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January 26, 2009

File No. 036182-0005

**VIA HAND DELIVERY AND U.S. MAIL**

Dr. Richard Wright
Chairman
San Diego Regional Water Quality Control Board
9174 Sky Park Court, Suite 100
San Diego, CA. 92123-4340

Re: February 11, 2009 San Diego Regional Board Meeting, Item 6 - Poseidon Resources Corporation, Proposed Carlsbad Desalination Project (Order No. R9-2006-0065, NPDES No. CA0109223)

Dear Chairman Wright:

On behalf of the Poseidon Resources Corporation, we are submitting the enclosed public comment ("Comment Letter") to the California Regional Water Quality Control Board, San Francisco Bay Region ("RWQCB") and Appendix, in response to the RWQCB's January 2, 2009 Notice of Public Hearing, Item 6 – Poseidon Resources Corporation, Proposed Carlsbad Desalination Project. Additional copies of the Comment Letter and Appendix follow via hand delivery. Supporting Declarations by Peter MacLaggan, David Mayer, Dr. Scott Jenkins, and Chris Nordby will arrive under separate cover.

We respectfully request that the Comment Letter, Appendix, and other materials submitted under separate cover, be given appropriate consideration, be placed in the administrative record and be maintained in RWQCB's records.

Sincerely,

Amanda Halter
of LATHAM & WATKINS LLP

Enclosures

# COMMENTS ON CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD'S REVIEW OF POSEIDON RESOURCES CORPORATION'S MARINE LIFE MITIGATION PLAN FOR COMPLIANCE WITH RESOLUTION NO. R9-2008-0039

Submitted by:

Date: January 26, 2009

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On behalf of Poseidon Resources Corporation ("Poseidon"), we appreciate the opportunity to submit public comment to the California Regional Water Quality Control Board, San Diego Region ("Regional Board"), in preparation for the Regional Board's February 11, 2009 meeting, where it will consider whether Poseidon's Marine Life Mitigation Plan[1] ("MLMP") meets the requirements of Resolution No. R9-2008-0039 (the "April Resolution")[2]. The MLMP supplements and amends Poseidon's *Flow, Entrainment and Impingement Minimization Plan* ("Minimization Plan"), which the Regional Board conditionally approved on April 9, 2008.

## I. EXECUTIVE SUMMARY

The MLMP presents the culmination of a comprehensive, interagency planning process involving extensive scientific study and public involvement aimed to ensure that potential entrainment and impingement ("E&I") impacts to marine resources from the proposed Carlsbad Desalination Project (the "Project") will be mitigated. The California Coastal Commission already has evaluated these very same impacts and has determined that:

> **"implementation of the [Marine Life Mitigation] Plan will ensure the project's entrainment-related impacts will be fully mitigated and will enhance and restore the marine resources and biological productivity of coastal waters . . . ."** (Emphasis in original.)[3]

In its current form before the Regional Board providing for up to 55.4 acres of wetlands in two phases, the MLMP contains a much more developed and robust mitigation proposal than the one for 37 acres presented in the Minimization Plan considered by the Regional Board in April 2008. In April 2008, the Regional Board directed Poseidon to subject its mitigation planning to an interagency process, which had a significant positive influence on the plan. The term "MLMP" was coined by the Coastal Commission, which ordered its preparation in November 2007 as a condition of the coastal development permit for the Project. Poseidon submitted the MLMP to Coastal Commission staff on July 3, 2008, which distributed it to other interested state and federal agencies for comment, including the Regional Board. After receiving

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1 Appendix A, Tab 1.

2 We respectfully request that these public comments, and related expert reports, appendices, and attachments submitted under separate cover be given appropriate consideration, be placed in the administrative record for Resolution No. R9-2008-0039 and the related NPDES Permit for the Carlsbad Desalination Project, Order No. R9-2006-0065, NPDES No. CA0109223, and be maintained in the agency's records.

In addition, the Regional Board should be aware that it has all of the correspondence and data cited herein in its possession currently but that certain items have been reproduced in the appendices to this letter for ease of reference.

3 California Coastal Commission Revised Condition Compliance Fidings (Item W16a). Condition Compliance for CDP No. E-06-013 – Poseidon Resources (Channelside), LLC; Special Condition 8: Submittal of a Marine Life Mitigation Plan, November 21, 2008.

expert review of the MLMP from Dr. Peter Raimondi, who is considered by the Coastal Commission a leader in this field, and the Commission's Scientific Advisory Panel, the Commission approved the MLMP on August 6, 2008.

The mitigation to be implemented under the MLMP is not needed today, as construction of the Project has not yet begun. The mitigation is relevant only after Poseidon begins to operate the Project in late 2011 or early 2011, and only when Poseidon cannot get sufficient feedstock water from the Encina Power Station ("Encina"), with which it is co-located. Failure to approve the MLMP at this time, however, may jeopardize Poseidon's orderly planning and implementation of the mitigation proposal, placing an unnecessary cloud over Poseidon's ability to deliver the Project's much-needed potable water supply.

The MLMP conservatively provides for Poseidon to construct enough wetlands to offset *all* entrainment[4] impacts associated with the intake system, that is, even if Encina shuts down. Because the MLMP provides mitigation to offset all entrainment impacts associated with intake, it essentially provides for *over*-mitigation unless or until Encina is no longer operating.

As proposed, the MLMP will:

- Avoid or mitigate to less-than-significant levels all impacts to marine resources associated with potential E&I from the Project's water intake;

- Create or restore up to 55.4 acres of high-quality estuarine wetland habitat based on the best science available to mitigate Project-related impacts and likely result in a net biological benefit to the Southern California Bight;

- Establish monitoring protocols and empower the Regional Board and the California Coastal Commission with enforcement mechanisms to ensure potential E&I impacts are accurately measured over time and that mitigation success targets consistently are achieved;

- Establish an enforceable schedule for completion of site selection (nine months), environmental review and permitting of the site(s) (24 months) and the start of construction (six months after approval of the permits);

- Provide for significant, continuing agency oversight during the selection, development and performance monitoring of the final mitigation site(s), including by the Executive Officer if the Regional Board approves the MLMP (as the MLMP would then be equally enforceable by the Regional Board); and,

- Authorize enforcing agencies to order remediation in the event the rigorous performance criteria are not met.

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[4] As is explained in Section V, infra, impingement impacts are de minimis and will be reduced further via application of best available technology, obviating the need for mitigation to offset impingement-related marine life mortality.

The MLMP, in combination with the Minimization Plan and related correspondence, fully addresses the concerns raised by the April Resolution and Regional Board staff, including the following:

- *Compliance with Water Code Section 13225* – The successful interagency process subsequent to the Regional Board's April 9, 2008 meeting complied fully with the Water Code, resulting in a consensus mitigation plan that reflects recommendations from regulatory agencies and extensive agency coordination to verify scientific soundness, environmental integrity, and compliance with applicable laws, regulations, and policies designed to protect marine resources.

- *Compliance with Water Code Section 13142.5* – The adequacy of mitigation has been vetted fully, resulting in a robust plan based on sound data and conservative resource-protective methodologies approved by the appropriate regulatory agencies (including the Regional Board and the Coastal Commission).

- *Sound Data* – The underlying data upon which the MLMP is based were collected in 2004 – 2005 under a Regional Board-approved work plan and reviewed by the agency's third-party consultant, Tetra Tech. The data are representative, adequate, and appropriate for assessment of potential E&I effects during both co-located and stand-alone operations.

- *Sound Calculations* – Working with Regional Board staff subsequent to the April 9, 2008 meeting, the impingement calculations were refined, and were found to be slightly more than as presented at the April 9, 2008 meeting (about 1.5 kg/day instead of 0.9 kg/day). Entrainment calculations were made using agency-accepted models (the Entrainment Transport Model and the Area of Production Foregone approach). The entrainment calculations were subject to rigorous peer review by the Coastal Commission.

- *Conservative Results* – The Coastal Commission required Poseidon to incorporate into the MLMP mitigation acreages that are based on high levels of confidence regarding the amount of entrainment not typically imposed (80 percent), and including acreage to account for attenuated impacts to open ocean species. These strict requirements are what resulted in the acreage increasing from 37 (before the Regional Board in April 2008) to 55.4.

- *Not Tied to One Site; Not Disregarding Agua Hedionda Lagoon* - The actual mitigation site(s), which will be selected this year, will not be locked in to San Dieguito Lagoon or other pre-determined outcome as staff was concerned in April 2008, and will be at location(s) acceptable to the Executive Officer of the Regional Board, and the Executive Director of the Coastal Commission.

- *Strict Success Criteria* – The MLMP incorporates strict criteria against which the success of mitigation will be measured, which were developed for the highly successful San Dieguito restoration project that Southern California Edison has underway. By accepting these strict performance measures, Poseidon is demonstrating its commitment to mitigation, and these criteria also enable the Regional Board and the other agencies to continue to consider several sites, since they know they will be provided with a thriving wetlands project at any one of these locations, as measured by the criteria.

- *Poseidon's Commitment* – Poseidon is subject to multiple process checks from multiple agencies, any of which could result in adverse consequences to Poseidon should it not implement the MLMP as proposed. For example, on April 1, 2011 Poseidon will be submitting a Report of Waste Discharge to the Regional Board, starting the process of permit renewal. No doubt the Regional Board will be evaluating Poseidon's progress on mitigation at that time. Permit reopener provisions contained in Poseidon's existing permit give the Regional Board atypical authorities to reopen the NPDES process and reexamine permit conditions, including the one requiring mitigation through the Minimization Plan. Further, Poseidon very likely will need additional Regional Board approval (e.g., WDRs and/or Section 401 Water Quality Certification) for its mitigation site(s). Poseidon's commitment to mitigation has been inextricably bound by the agencies to its entitlements to operate the Project.

After repeated attempts to identify any additional, specific concerns that staff may have, we are aware of none, except for a minor issue regarding the timing of the submittal of the MLMP, which timely was received in draft form in July, months before the deadline, and in final form as soon as possible to accommodate the Resolution-directed interagency agency process with the knowledge and permission of staff.

The Regional Board's approval of the MLMP will put Poseidon on schedule to begin construction of the Project mid-year 2009, while enabling Poseidon to begin securing entitlements for the wetlands restoration in the MLMP that will result in net biological benefits to coastal Southern California. In short, we believe that a robust, science-based MLMP that complies fully with all legal requirements is before you today, and we urge your approval of it so that we may proceed to the implementation phase of mitigation planning.

## II. BACKGROUND

### A. The Facility

Poseidon plans to construct and operate the Carlsbad Desalination Project, which will convert approximately 104 million gallons per day ("MGD") of salt water into 50 MGD of fresh, potable water for 300,000 San Diego County residents in this water-starved region. The Project will be located alongside the Encina Power Station so that it can use the discharge water from Encina's cooling system as its feedstock water. Encina's source water is Agua Hedionda Lagoon, which opens into the Pacific Ocean. The Project will use Encina's intake system even when Encina is not operating. Currently, Poseidon expects to begin construction of the plant in June 2009. Commercial operations are to commence approximately 2.5 years later, in approximately December 2011.

### B. Regional Board Order No. R9-2006-0065, NPDES No. CA 0109223

On August 16, 2006, the Regional Board unanimously adopted Order No. R9-2006-0065, granting Poseidon a National Pollutant Discharge Elimination System ("NPDES") permit pursuant to its authority under the federal Clean Water Act ("CWA"). The permit allows the Project to discharge up to 57 MGD of combined concentrated saline wastewater and filter

backwash wastewater into the Pacific Ocean via Encina's cooling discharge channel. The permit expires October 1, 2011, months before Poseidon is likely to begin commercial operations. Poseidon, will therefore, need to come before the Regional Board to secure a permit renewal before any discharges will have occurred.

C. NPDES Tentative Order Altered in Response to Public Comment

The Regional Board had initially held a hearing to consider adopting Tentative Order No. R9-2006-0065 granting Poseidon the NPDES permit two months earlier, on June 14, 2006. At the June 14, 2006 hearing, the Regional Board elected to postpone adopting a final order so that it could revise the tentative order to include the following provision[5]:

> The discharger shall submit a Flow, Entrainment and Impingement Minimization Plan within 180 days of adoption of the Order. The plan shall assess the feasibility of site-specific plans, procedures, and practices to be implemented and/or mitigation measures to minimize the impacts to marine organisms when the Project intake requirements exceed the volume of water being discharged by the Encina Power Station. The plan shall be subject to the approval of the Regional Water Board and shall be modified as directed by the Regional Water Board.[6]

The Regional Board's stated rationale for the provision is that "[t]he Regional Water Board recognizes that future Encina flows may not follow historical trends.[7]" That is, the Regional Board required the development of the Minimization Plan to account for a scenario in which Encina's outflows are insufficient to satisfy the Project's feedstock needs.

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5 Responding to comments from interested parties, the Regional Board, pursuant to its authority as an administrator of California's Porter-Cologne Water Quality Control Act, amended the original tentative order to include within the Special Provisions, section VI.B., a requirement that Poseidon submit a "Flow, Entrainment and Impingement Minimization Plan", VI.B.2.e. The Regional Board has noted that approval of a Minimization Plan is not a condition for commencement of discharge. April Resolution at ¶¶ 3-4.

6 The Regional Board noted that the Project's operations are not subject to the statutory requirements of Section 316(b) of the CWA, as that section pertains only to impacts from intake of seawater for the purpose of power generation, but that the Project is a "new industrial installation" subject to California Water Code Section 13142.5, which requires the use of best available site, design, technology, and mitigation measures feasible to minimize the intake and mortality of all forms of marine life. Resolution at ¶¶ 3-4.

7 Add cite NPDES rationale §.

One month after the Regional Board adopted Order No. R9-2006-0065, Poseidon's NPDES permit, Surfrider Foundation and Coastkeeper filed a petition to the State Water Resources Control Board ("State Board") on the basis that the permit's reopener provision was inadequate, the permit failed to adequately address the impacts of the Project when Encina is not operational, and that the permit conflicted with the federal Clean Water Act by not following proper procedures for establishing water quality-based effluent limits. On June 5, 2007, the State Board rejected the challenge on the ground that Petitioners had failed to raise substantial issues that were appropriate for review. Petitioners did not seek a writ of mandate challenging the State Board's denial of review. On October 1, 2006, the NPDES permit became effective.

Poseidon submitted the first draft of its proposed Minimization Plan to Regional Board staff for its review on February 12, 2007. After time for public comment, Poseidon submitted a substantially revised second draft on June 29, 2007. On February 19, 2008, Regional Board staff sent Poseidon a letter identifying concerns with the second draft of the Minimization Plan.

Poseidon responded to staff's concerns by requesting a meeting to review the letter and better understand staff's needs, which appeared to be concerned primarily with insufficiency of supporting data. Then, on March 7, 2008, Poseidon submitted a third draft of the Minimization Plan, which included over three hundred pages of scientific support for the proposal. Submitted concurrently with the revised Minimization Plan was a detailed response to the February 19, 2008 letter, which addressed how the Minimization Plan and supporting scientific material responded to the Regional Board's concerns as articulated in the letter and refined in the subsequent meeting with staff.[8]

D. Minimization Plan is Conditionally Approved

Regional Board consideration of Poseidon's Minimization Plan was set for a public meeting on April 9, 2008. During that meeting, staff's comments, as well as comments from the public, were addressed by Poseidon's Project Manager Peter MacLaggan and three experts, Dr. Scott Jenkins from Scripps Institute of Oceanography, David Mayer of Tenera Consulting, the foremost expert on the West Coast on entrainment and impingement studies, and Chris Nordby, an environmental wetlands restoration specialist.

After considering testimony, the Minimization Plan, and Poseidon's extensive supporting submittal, the Regional Board conditionally approved the Minimization Plan, adopting the April Resolution. The April Resolution required Poseidon to submit within six months an amendment to the Minimization Plan that included a specific proposal for mitigation of the impacts, by impingement and entrainment, upon marine organisms resulting from the intake of seawater

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[8] Consistent with the interagency exchange of information on this Project, Regional Board staff member Eric Becker then sent Poseidon's March 7, 2008 response to several other interested agencies, including the Coastal Commission, the U.S. Department of Fish & Wildlife, and National Marine Fisheries Service. Email from E. Becker to several others, March 7, 2008.

from Agua Hedionda Lagoon, i.e., a mitigation plan, just as the Coastal Commission had required Poseidon to generate as a condition to its coastal development permit.

E. Interagency Coordination to Develop Minimization Plan Amendment – Data and Modeling are Subjected to Additional Expert Review

The Regional Board directed Poseidon to resolve the conditions of the April Resolution through an interagency review and approval process. The Coastal Commission staff retained Dr. Pete Raimondi to examine the Tenera study provided by Poseidon to the Regional Board and the Coastal Commission in March 2008 submitted as part of the Minimization Plan supporting materials.

1. Late April Follow-up to Regional Board Staff Questions

On April 17, 2008, Mr. MacLaggan received an email from Senior Regional Board Scientist Chiara Clemente indicating that perhaps a meeting with Regional Board staff would not be necessary to obtain clarifications staff sought but that it would be most helpful to receive via email answers to several specific questions.[9] On April 30, 2008, Mr. MacLaggan provided responses to Ms. Clemente's emailed questions and invited her to contact him should she have any questions.[10]

2. May 1-2 Interagency Meetings

On April 10, 2008, just two days after the conditional approval of the Minimization Plan, Peter MacLaggan sent the Executive Officer a list of confirmed attendees for interagency meetings set for May 1-2, 2008, as well as the original invitation to the meeting, receipt of which the Executive Officer acknowledged.[11]

On May 1, 2008, the Coastal Commission hosted an interagency meeting on the MLMP at the Agua Hedionda Lagoon Discovery Center. The agenda notes that it was an "interagency working group meeting...to address potential mitigation options for impacts to marine life from impingement and entrainment by the Carlsbad Desalination Project." Thirteen state and federal agencies were invited to attend. Both the Executive Officer and Senior Scientist Chiara Clemente attended on behalf of the Regional Board. At the conclusion of the May 1, 2008 meeting, Mr. MacLaggan asked the Executive Officer whether Poseidon's April 30, 2008 submittal, coupled with the Coastal Commission's independent expert review of Poseidon's entrainment study, adequately addressed Poseidon's obligations under the April Resolution to identify potential impacts from impingement and entrainment, and establish the adequacy of the monitoring data to support such a determination. Mr. Robertus responded that the Regional Board had no further questions regarding the identification of impacts or the adequacy of the monitoring data.[12]

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9 Email from C. Clemente to P. MacLaggan, April 17, 2008, Appendix A, Tab 13.

10 Email from P. MacLaggan to C. Clemente, April 30, 2008, Appendix A, Tab 16.

11 Email from P. MacLaggan to J. Robertus, April 10, 2008, Appendix A, Tab 12.

12 MacLaggan Declaration (submitted under separate cover), ¶ 33.

3. Scientific Advisory Panel Advises Coastal Commission on MLMP

In June, Coastal Commission staff asked the Commission's Scientific Advisory Panel ("SAP") to review Dr. Raimondi's conclusions and make further recommendations to Poseidon to include in its soon-to-be-proposed MLMP.

4. Poseidon Submits MLMP

On July 3, 2008, Poseidon submitted the first draft of its MLMP to Coastal Commission staff.[13] Poseidon's draft closely followed the SCE model that had been provided by the Coastal Commission. The next day Coastal Commission staff member Sara Townsend sent an email to the various interested agencies, including the Executive Officer of the Regional Board, attaching Poseidon's MLMP for review. The email indicated that the MLMP would be brought before the Coastal Commission in August and asked that comments from the other agencies be submitted within the next two weeks.[14] Thus, the Regional Board received the first draft of Poseidon's MLMP on July 8, 2008. We are not aware that the Regional Board staff expressed any concerns to Coastal Commission staff. On August 2, 2008, Poseidon submitted a revised version of the MLMP.

5. Coastal Commission and State Lands Commission Approvals Reflect Input Received from Agency Staff

On August 6, 2008, at a public meeting, the Coastal Commission approved Poseidon's MLMP with certain non-substantive modifications delegated to the Executive Director to resolve with Poseidon. It appears the Executive Officer attended this meeting.

The State Lands Commission ("SLC") also approved the MLMP when it incorporated it as an amendment to the Lease for the intake system. The SLC lease requires, among other things, that at all times during the term of the lease, Poseidon shall comply with the MLMP as adopted by the Coastal Commission on August 6, 2008.[15]

6. Poseidon and Coastal Commission Staff Work Together to Finalize Language - Regional Board Staff Elects to Wait for Final Language

Over the next several months, Poseidon continued to work at the direction of the Coastal Commission staff on revisions to the August 2, 2008 draft MLMP to make it consistent with the Coastal Commission's August 6, 2008 approval. On September 17, 2008, Mr. MacLaggan advised the Executive Officer in an in-person meeting that he was continuing to work with the Coastal Commission to finalize that language but that final language was unlikely to be available before October 8, 2008, the deadline set by the April Resolution for submittal of the MLMP.

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13 MacLaggan Declaration, Exh. D.

14 Email from S. Townsend to various people, including J. Robertus, July 8, 2008, Appendix A, Tab __.

15 State Lands Commission, Amendment of Lease PRC 8727.1, Appendix A, Tab 21.

Mr. MacLaggan and the Executive Officer discussed the substance of the MLMP as it had been approved by the Coastal Commission on August 6, 2008, and Mr. MacLaggan brought a draft of the MLMP with the anticipated Coastal Commission language changes. Mr. MacLaggan offered the Executive Officer the option to receive the draft, anticipated language or wait to receive the final language. The Executive Officer advised Mr. MacLaggan that he preferred to wait to receive the final language.[16]

On October 15, 2008, Mr. MacLaggan emailed Ms. Clemente at the Regional Board advising her that he had a meeting with Coastal Commission staff on October 28, 2008 to finalize the text of the MLMP and that he would forward her the final language when received. Ms. Clemente responded, "Thank you for the 'head's up.' We will plan accordingly."[17]

At the November 12, 2008 Regional Board meeting, the Executive Officer advised the Regional Board that flexibility in the October 8, 2008 deadline was being allowed to accommodate the involvement of the other agencies participating in the interagency process required by the April Resolution. The Regional Board's attorney also noted that the other agencies' approvals may have been impacted by litigation initiated by groups opposing the Project.[18]

In response to an email from Regional Board staffer Mike Porter on November 13, 2008 inquiring as to the status of the final language, Mr. MacLaggan responded that an agreement had been reached with Coastal Commission staff on November 7, 2008 and that he would be forwarding the final language the next day. On November 14, 2008, Mr. MacLaggan submitted the final MLMP to the Regional Board. On November 17, 2008, the Executive Officer acknowledged receipt.[19]

7. Regional Board Staff's Participation in the Interagency Process

In sum, the Regional Board staff participated in the process but looked to the Coastal Commission staff to largely coordinate it after the May 1, 2008 interagency meeting.[20] The Regional Board was kept informed by other agencies and the public record. To Poseidon's knowledge, Regional Board staff never objected to or asked questions about the process or the way the MLMP was developing into the plan that was ultimately approved by the Coastal Commission on August 6, 2008. By its participation in the interagency process and failure to voice any continuing concerns, staff's conduct led Poseidon to reasonably believe that that any concerns it had had already been addressed or were being addressed during the process.

8. Staff Responds to MLMP and Ceases Communicating with Poseidon

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16 MacLaggan Declaration ¶ 41.

17 MacLaggan Declaration ¶ 43, Exh. G9.

18 Recording of November 12, 2008 Regional Board meeting (submitted under separate cover).

19 MacLaggan Declaration, ¶ 45, Exh. G12-13.

20 Email from G. Newton to J. Brown, August 5, 2008, appendix A, Tab 18.

On December 2, 2008, Regional Board staff sent a letter to Mr. MacLaggan criticizing the MLMP. This appears to be the first time Regional Board staff indicated any concerns regarding the MLMP, despite having received it 5 months earlier when the Coastal Commission was reviewing it. The December 2, 2008 letter asserts that Poseidon has failed to address staff's February 19, 2008 letter regarding the Minimization Plan, which letter was submitted, responded to, and discussed, all prior to the April 9, 2008 meeting at which the Regional Board approved the Minimization Plan.[21] Mr. MacLaggan responded to staff's December 2, 2008 letter one week later, on December 9, 2008, reiterating that staff's concerns had been addressed and inviting staff to meet with Poseidon to discuss any outstanding, specific questions it felt were unresolved. The Executive Officer responded that he would have staff review the materials. Mr. MacLaggan received no further response from Regional Board staff.[22]

9. Notice of February 11, 2009 Regional Board Public Hearing is Posted

On December 30, 2008, Regional Board staff posted a notice of public hearing for the Regional Board's February 11, 2009 meeting indicating that the Regional Board would be considering rescission of the April Resolution.[23] On January 2, 2009, the Regional Board issued a corrected notice of public hearing stating that it would instead be considering whether the MLMP meets the conditions of the April Resolution. No indication has been given as to why the Regional Board may have been considering rescission of the April Resolution.[24]

10. Poseidon Attempts Communication with Regional Board Staff

On January 5, 2009, Mr. MacLaggan telephoned the Executive Officer and inquired as to whether Poseidon's December 9, 2008 letter was responsive for the purposes of the February 11, 2009 public hearing. The Executive Officer responded that his counsel had advised him not to speak with Mr. MacLaggan about the February 11, 2009 hearing and referred me to staff.[25] Mr. MacLaggan also telephoned staffer Mike Porter and left a voicemail inquiring as to whether the Regional Board needed anything from Poseidon. Mr. Porter responded via email on January 7, 2009, stating that he did not know whether anything was needed but that staff would be done with their evaluation shortly and would let Mr. MacLaggan know either way.[26] The Regional Board has made no requests for additional information or specific indications of how Poseidon's voluminous submittals, including the materials before the Coastal Commission, fall short of staff's needs.

Regardless, the several-month interagency process resulted in a comprehensive mitigation plan providing for the selection and development of a mitigation wetlands project to mitigate for potential impacts to marine life caused by the Project when it takes in water in

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21 MacLaggan Declaration ¶ 47.

22 MacLaggan Declaration ¶¶ 47-49.

23 MacLaggan Declaration ¶ 50.

24 MacLaggan Declaration ¶ 51.

25 MacLaggan Declaration ¶ 52.

26 MacLaggan Declaration ¶ 53.

excess of the cooling water needs of Encina. Thus, the MLMP before the Regional Board directly addresses the mitigation directives set forth by the Regional Board in the April Resolution.

## III. FRUIT OF THE INTERAGENCY PROCESS - HOW THE MLMP WORKS

### A. How the MLMP Works

In total, the MLMP provides for up to 55.4 acres of mitigation to offset any marine life mortality associated with entrainment at the intake system that will be implemented in two phases. Within two years of the issuance of the Project's coastal development permit, Poseidon must submit a complete coastal development permit application for a proposed restoration project that provides at least 37 acres of estuarine wetland restoration.[27] The coastal development permit application must include CEQA documentation and any necessary local or state approvals to use the site for wetlands restoration.[28] Within five years of the issuance of the coastal development permit for the first 37 acres, Poseidon must submit a complete coastal development permit application proposing up to 18.4 acres of additional restoration, unless it can demonstrate that additional technology measures at the intake structure obviate the need for more mitigation or receives credit for dredging in Agua Hedionda Lagoon.

The MLMP provides that within 9 months of the effective date of the Project's coastal development permit, Poseidon shall submit its selection of site(s) along with a preliminary wetland restoration plan, which will provide the technical and logistical details of exactly how the site is to be developed and turned into functional wetlands.[29] The site selection and preliminary wetland restoration plan will then be subject to review and approval by the Coastal Commission, and if the Regional Board similarly approves the MLMP, it will also be subject to review and approval by the Regional Board.[30]

Within six months of approval of the Phase I restoration plan, subject to Poseidon's obtaining the necessary permits for the site, Poseidon is to begin construction of the wetland restoration project.[31] The following chart provides the timelines in graphical form:

| | **Poseidon must submit the following…** | *How soon after the Project's coastal development permit issuance by Coastal Commission?* |
|---|---|---|
| **Phase I** | 1. Proposed site(s)<br>2. Preliminary restoration plan | 10 months |

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27 MLMP § 1.0, Appendix A, Tab 1.

28 MLMP § 4.1, Appendix A, Tab 1.

29 MLMP § 2.0, Appendix A, Tab 1.

30 *Id.*

31 MLMP § 4.2, Appendix A, Tab 1.

| | | |
|---|---|---|
| | Complete coastal development permit application<br><br>Restoration plan to restore **37 acres**<br><br>(Poseidon must begin constructing the wetland within 6 months of the Coastal Commission's approval of the restoration plan.) | 2 years |
| **Phase II** | Complete coastal development permit application<br><br>Final restoration plan to either<br>a. Restore 18.4 more acres;<br>b. Implement technologies not currently available or feasible that would reduce entrainment levels below anticipated levels; or<br>a. Dredge Agua Hedionda Lagoon in a manner that warrants mitigation credit | 5 years |

The following chart details the requirements of the wetlands restoration plan for the selected site(s) prescribed by the MLMP.

| Additional Elements to which Poseidon's restoration plan must conform |
|---|
| a. Detailed review of existing physical, biological, and hydrological conditions; ownership, land use and regulation;<br>b. Evaluation of site-specific and regional restoration goals and compatibility with the goal of mitigating for Poseidon's marine life impacts;<br>c. Identification of site opportunities and constraints;<br>d. Schematic restoration design, including:<br>1. Proposed cut and fill, water control structures, control measures for stormwater, buffers and transition areas, management and maintenance requirements;<br>2. Planting program, including removal of exotic species, sources of plants and or seeds (local, if possible), protection of existing salt marsh plants, methods for preserving top soil and augmenting soils with nitrogen and other necessary soil amendments before planting, timing of planting, plans for irrigation until established, and location of planting and elevations on the topographic drawings;<br>3. Proposed habitat types (including approximate size and location);<br>4. Assessment of significant impacts of design (especially on existing habitat values) and net habitat benefits;<br>5. Location, alignment and specifications for public access facilities, if feasible;<br>6. Evaluation of Encina for implementation e.g. permits and approvals, development agreements, acquisition of property rights;<br>7. Cost estimates;<br>8. Topographic drawings for final restoration plan at 1" = 100 foot scale, one foot contour interval; and<br>9. Drawings shall be directly translatable into final working drawings.<br>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.

B. The Site(s) Will Be Selected Using Strict Standards and Will Be Subject to Coastal Commission and Regional Board Approval

The site(s) selected must be within the Southern California Bight. No more than two sites will be selected, unless approved.[32] During the interagency process to develop the MLMP, a specific list of sites emerged as those preferred by contributing agencies, including Tijuana Estuary, San Dieguito River Valley, Agua Hedionda Lagoon, San Elijo Lagoon, Buena Vista Lagoon, Huntington Beach Wetland, Anaheim Bay, Santa Ana River, Los Cerritos Wetland, Ballona Wetland, and Ormond Beach.[33] The MLMP lists these specific sites and indicates that Poseidon may also consider other sites recommended by the California Department of Fish & Game as high priority wetlands restoration projects.[34]

The following chart indicates the slate of sites contemplated in the MLMP, subject to agency approval of actual selection.

| **Identified Mitigation Sites (MLMP § 2.0)** | |
|---|---|
| San Diego County | 1. Tijuana Estuary<br>2. San Dieguito River Valley<br>3. Agua Hedionda Lagoon<br>4. San Elijo Lagoon<br>5. Buena Vista Lagoon |
| Orange County | 6. Huntington Beach Wetland<br>7. Anaheim Bay<br>8. Santa Ana River |
| Los Angeles County | 9. Los Cerritos Wetland<br>10. Ballona Wetland |
| Ventura County | 11. Ormond Beach |
| • The permittee may also consider any sites that may be recommended by the California Department of Fish & Game as | |

32 MLMP § 2.0, Appendix A, Tab 1.

33 *Id.*

34 *Id.*

high priority wetlands restoration projects.

- Other sites proposed by the permittee may be added to this list with the Executive Director's approval.

The basis for selection of the site(s) is prescribed in the MLMP in detail, which sets out an extensive list of minimum standards and objectives for the site(s) and restoration plan.

Minimum standards include the requirement that the site(s) must provide at least 37 acres of habitat similar to the affected areas in the Agua Hedionda Lagoon, have a buffer zone to ensure protection of the wetland, be free of any contamination problems, would not result in net loss of existing wetlands, and could be preserved in perpetuity for wetlands purposes.[35] The site(s) must incorporate as many objectives as possible, which include, among other things, providing substantial fish habitat compatible with other wetland values, provide rare or endangered species habitat, and is such that restoration can be accomplished in a timely fashion.

| **§ 3.1 Minimum Standards** (Restoration plan must satisfy) | **§ 3.2 Objectives** (Plan must incorporate to the extent feasible) |
|---|---|
| a. Location within Southern California Bight;<br>b. Potential for restoration as tidal wetland, with extensive intertidal and subtidal areas;<br>c. Creates or substantially restores **a minimum of 37 acres and up to at least 55.4 acres of habitat** similar to the affected habitats in Agua Hedionda Lagoon, excluding buffer zone and upland transition area;<br>d. Provides a buffer zone of a size adequate to ensure protection of wetland values, and at least 100 feet wide, as measured from the upland edge of the transition area;<br>e. Any existing site contamination problems would be controlled or remediated and would not hinder restoration;<br>f. Site preservation can be guaranteed in perpetuity (through appropriate public agency or nonprofit ownership, or other means approved by the Executive Director), to protect against future degradation or incompatible land use;<br>g. Feasible methods are available to protect the long-term wetland values at the site(s), in perpetuity;<br>h. Does not result in a net loss of existing wetlands; and<br>i. Does not result in an adverse impact on | 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;<br>b. Provides substantial fish habitat compatible with other wetland values at the site(s);<br>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;<br>d. Provides maximum upland transition areas (in addition to buffer zones);<br>e. Restoration involves minimum adverse impacts on existing functioning wetlands and other sensitive habitats;<br>f. Site selection and restoration plan reflect a consideration of site specific and regional wetland restoration goals;<br>g. Restoration design is that most likely to produce and support wetland-dependent resources;<br>h. Provides rare or endangered species habitat;<br>i. Provides for restoration of reproductively isolated populations of native California species;<br>j. Results in an increase in the aggregate |

[35] MLMP § 3.0, Appendix A, Tab 1.

| | |
|---|---|
| endangered animal species or an adverse unmitigated impact on endangered plant species. | acreage of wetland in the Southern California Bight;<br>k. Requires minimum maintenance;<br>l. Restoration project can be accomplished in a reasonably timely fashion; and,<br>m. Site(s) in proximity to the Carlsbad desalination facility. |

C. The MLMP Provides for Rigorous Performance Standards to Measure and Ensure Success

Poseidon is committed to full mitigation of all marine life impacts from the Project operations, as demonstrated by the MLMP's incorporation of strict, measurable performance standards, which are an important component of satisfying the April Resolution's stated requirement of a "specific proposal for mitigation of impacts by impingement and entrainment upon marine organisms resulting from the intake of seawater from the Agua Hedionda Lagoon."[36]

These standards include: (a) specific timelines for submittal of proposed site(s) and a Preliminary Restoration Plan for Coastal Commission review and approval (MLMP § 2.0); (b) identification of 11 pre-approved candidate mitigation sites (MLMP § 2.0); (c) minimum standards and objectives for the mitigation site selection (MLMP §§ 3.1 and 3.2); (d) detailed restoration plan requirements (MLMP § 4.1); (e) specific monitoring, maintenance and remediation standards to be conducted over the "full operating life" of the Project including, but not limited to, long-term physical standards, biological performance standards and suggested sampling locations (MLMP § 5.0); and (f) a comprehensive administrative and procedural structure (Condition B).

Additionally, these strict standards establish specific criteria for effectively measuring the success of the mitigation project, e.g., within five years of the start of construction, the constructed wetlands must match habitat values within a 95% confidence level for four undisturbed wetlands identified in the MLMP.

The MLMP's specific biological performance standards, which are used to determined whether the restoration project is successful, are catalogued in the following chart:

| **Biological performance standards**<br><br>Poseidon's mitigation project is only deemed successful if the variation between Poseidon's mitigation site and baseline average is less than 5%. |
|---|
| 1. Biological Communities. Within 4 years of construction, the total densities and number of species of **fish, macroinvertebrates and birds** shall be similar to the densities and number of species in similar habitats in the reference wetlands; |

36 April Resolution, Section II.3.

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 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**.

1. The MLMP Incorporates Performance Standards of the San Onofre Nuclear Generating Station Mitigation Plan

As required by the Regional Board in the April Resolution, the MLMP represents the culmination of extensive state, local and federal agency coordination, including input from the Regional Board, Coastal Commission, State Lands Commission, Department of Fish and Game, California Department of Transportation, U.S. Fish and Wildlife Service, City of Carlsbad and City of Vista. In addition, the MLMP was peer reviewed by the Coastal Commission's Marine Science Advisory Panel, which consists of eight scientists affiliated with universities across California.

One of the many results of this comprehensive interagency collaboration was the MLMP's incorporation of the performance standards and conditions approved by the Regional Board for the mitigation of marine life impacts from Southern California Edison's ("SCE") San Onofre Nuclear Generating Station ("SONGS"). In June 2008, Coastal Commission staff provided Poseidon with the conditions the Coastal Commission required SCE to meet for conducting its site selection, construction, monitoring, and other aspects of its restoration plan, and offered its recommendation that Poseidon include these conditions as part of its MLMP. *See* Coastal Commission Staff Report, Condition Compliance for the Project No. E-06-013, July 24, 2008 ("Staff Report"), at 14. This recommendation culminated in the incorporation of MLMP performance standards and conditions strikingly similar to those required of SCE at its San Dieguito Restoration Project.[37]

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[37] *See* Coastal Commission Reporter's Transcript of Proceedings, August 6, 2008, Agenda Item 5.a., at 313:4-9 ("Environmental Specialist Luster: Yes, staff's recommendation in Exhibit 2, those are the conditions that the Commission required of SONGS. Staff modified some of those conditions to reflect some updates, and mitigation approaches,

The determination to adopt the SONGS performance standards as part of the MLMP has been strongly supported by Coastal Commission staff throughout the MLMP approval process.[38]

Therefore, the final determination of the MLMP performance standards and conditions lies largely with Coastal Commission staff. Accordingly, by incorporating the SONGS performance standards and conditions into the MLMP, Poseidon was properly complying with the Executive Officer's remarks at the April 9, 2008 hearing in which he emphasized that the Regional Board intended to be a participant in an interagency process, guided largely by the Coastal Commission. *See* Regional Board Reporter's Transcript of Proceedings, April 9, 2008, at 11:12-19.

2. The Inclusion of the SONGS Performance Standards Ensures That the MLMP Represents a "Very Carefully Designed" Mitigation Plan

Additionally, through the incorporation of the SONGS performance standards and conditions, the MLMP is implementing the standards of a mitigation project that has long been highly-regarded in the environmental community for its strict environmental protection standards. Public commentators remarking on the San Dieguito Wetland Restoration Project have called the plan both "a fabulous project" which has been "very carefully designed." James Steinberg, *Forward, Marsh*, San Diego Union-Tribune, March 19, 2006 (quoting Craig Adams, executive director of the San Dieguito Valley Conservancy). Through the incorporation of the SONGS performance standards and conditions, the MLMP will now encompass these same rigorous success measures which have met with high praise from the environmental community.

Furthermore, with the inclusion of the SONGS performance standards and conditions, the MLMP now encompasses performance standards which have already been proven successful in a practical scenario. As documented by both SCE and local media, the SONGS performance standards have resulted in the successful implementation of key milestones in the overall completion of the 150-acre restoration project. *See* Southern California Edison, San Dieguito

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and you know, removed references to SONGS and Edison and replaced them with Poseidon."), Appendix A, Tab 20.

38 Coastal Commission Reporter's Transcript of Proceedings, August 6, 2008, Agenda Item 5.a., at 307:4-10 ("Environmental Specialist Luster: The conditions that the Commission imposed on Edison for the San Dieguito site, those were issued before Edison has selected its site, and so we feel that if Poseidon meets the same conditions that Edison was held to, and selects a site within the Southern California bit, that would provide adequate assurance that subsequent plans that come to you would be sufficient."); *Id*, at 313-14 ("Commissioner Hueso: Why are we referencing SONGS, specifically, because of their approval to the mitigation? What you are doing is recommending that exact same approach? Environmental Specialist Luster: Yes[....w]e believe the conditions that SONGS was held to would be applicable to Poseidon if they did estuarine restoration somewhere in the Southern California bite.") Appendix A, Tab 20.

Lagoon Restoration (available at http://www.sce.com/PowerandEnvironment/PowerGeneration/MarineMitigation/SanDieguitoLagoonRestoration.htm) (stating that SCE submitted a Preliminary Restoration Plan in September 1997, certified a Final Environmental Impact Report for the project in September 2000, submitted a Final Restoration Plan in November 2005, and began construction in Fall 2006); Matthew Rodriguez, *Tidal Basin Opens to Ocean*, San Diego Union-Tribune, January 24, 2008 (stating that a 40-acre tidal basin opened to the public in January 2008).

Thus, the inclusion of the SONGS performance standards and conditions ensures that the mitigation required by the MLMP will be as effectively and timely implemented as the well-regarded and successfully implemented San Dieguito Wetland Restoration Project.

3. The MLMP Incorporates Continuous Monitoring Performance Standards to Achieve Effective and Successful Implementation of the Restoration Project

In addition to the safeguards found through the inclusion of the already-proven SONGS performance standards, the MLMP incorporates a series of detailed and rigorous continuous monitoring standards to ensure the successful mitigation of all the Project marine resources impacts. Under the terms of Section 5.0 of the MLMP, these monitoring standards will be conducted over the "full operating life" of the Project. The MLMP provides for three separate monitoring phases: pre-restoration site monitoring (MLMP § 5.2), construction monitoring (MLMP § 5.3), and post-restoration monitoring and remediation (MLMP § 5.4). During each of these phases, independent scientific and administrative support staff (hired by the Executive Director) will conduct the field work, analyze and interpret the data, and report to the Executive Director. Charged with overseeing the mitigation and monitoring functions, the independent scientists and staff will ensure that these MLMP provisions are implemented competently and objectively.

Oversight by the Coastal Commission's respected Scientific Advisory Panel (SAP) will also ensure the quality of Poseidon's mitigation efforts. The Commission's Executive Director will convene a special panel of recognized scientists in the fields of marine biology, ecology, statistics, and physical science. The SAP will provide scientific advice on the design, implementation and monitoring of the wetland restoration. The Coastal Commission has used a similar team of scientists to provide guidance and oversight on ecological issues associated with the San Dieguito Restoration Project.[39] The inclusion of the SAP, therefore, represents yet another instance in which Poseidon's mitigation project will be modeled after the successful SONGS mitigation work at San Dieguito Lagoon.

Through the implementation of these monitoring standards, and the availability of the SAP to provide the Executive Director with scientific advice throughout the course of the design, implementation and monitoring process, the wetlands restoration project required by the MLMP will be subject to continuous and ongoing oversight by respected scientific and technical

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[39] Recommended Revised Condition Compliance Findings November 21, 2008, page 7, n. 6, Appendix A, Tab 22.

personnel under the direction of the Executive Director of the Coastal Commission. MLMP, Condition B, § 1.0

In addition, monitoring data are to be made available for public review via the Internet. The Coastal Commission also will receive annual written project status reports and convene periodic public hearings to assess progress and success of the project. MLMP, Condition B, § 3.0. If necessary, the Executive Director, and therefore the Executive Officer if the Regional Board adopts the MLMP, is authorized to order remediation to correct any deficiencies in achieving the MLMP's extensive performance criteria. *Id.*

D. Because the MLMP is Modeled After and Nearly Identical to Performance Standards Upon Which the Successful SONGS Mitigation Project is Based, the MLMP Provides a High Degree of Certainty Regarding the Final Success of Poseidon's Mitigation Plan

The success of the San Dieguito Restoration Project contributed to the Coastal Commission's recommendation that Poseidon adopt the SONGS performances standards during the interagency coordination process that produced the MLMP. *See* California Coastal Commission Staff Report, July 24, 2008, pg. 14. The Coastal Commission staff advocated for the Poseidon's adoption of the SONGS performance standards because of their proven success. *See* California Coastal Commission Staff Report, July 24, 2008, pg. 2 ("The second recommendation is meant to ensure that mitigation is timely and successful. It would require Poseidon to implement its mitigation subject to the conditions similar to those the Commission required of Southern California Edison at its San Dieguito Restoration Project. [ ] Staff recommends the two projects be held to similar standards.")

Once the other participating agencies—including the Regional Board—approved of the adoption of these standards, Poseidon agreed to draft its own MLMP modeled after the SONGS restoration plan. As a result, the provisions in the MLMP are virtually identical to those that form the basis for the SONGS mitigation plan (e.g., both include sections pertaining to site selection, minimum standards, objectives, plan implementation, monitoring and management, etc.).

These precise procedural safeguards, along with the inclusion of the successful SONGS performance standards and conditions, work to make the MLMP a mitigation plan that will fully mitigate all marine life impacts from the Project operations.

## IV. POSEIDON'S IMPINGEMENT AND ENTRAINMENT DATA ARE TECHNICALLY SOUND

Poseidon prepared a Minimization Plan, the purpose of which is to minimize marine life mortality caused by the impingement and entrainment of marine organisms in the intake structure it will share with Encina.

1. Origins of Impingement and Entrainment Data

As a fossil-fueled power generating station that draws water from the Pacific Ocean via the Agua Hedionda Lagoon to cool its facilities, Encina was required to perform an impingement

and entrainment study to comply with the United States Environmental Protection Agency's ("EPA") CWA Section 316(b) regulations. In 2004-2005, Encina hired Tenera Consultants to gather the necessary impingement and entrainment data that would be used to assess the adverse impacts associated with Encina's intake, known as an Impingement Mortality and Entrainment Characterization ("IM&E") Study.

2004-2005 happened to be an abnormally rainy year. Although Regional Board staff suggested at one point that the heavy rainfall skewed the sampling data by reducing the salinity in the water to a point that drove away marine species, Dr. Jenkins explained at the April 9, 2008 hearing that because the Agua Hedionda Lagoon is a small watershed that holds a large volume of seawater, its salinity levels were not depressed by the rains to a point that would have changed the mix of species in the lagoon. Therefore, the sampling conducted pursuant to Tenera's impingement and entrainment study did not under-represent impingeable or entrainable marine organisms.

2. The IM&E Study Was Conducted In Conformity with a Study Plan that Was Reviewed and Approved by the Regional Board

Per the EPA's 316(b) regulations, Encina produced a "Study Plan" before conducting the IM&E Study. The Study Plan was submitted to the Regional Board for its review and approval pursuant to the terms of Encina's NPDES permit. Regional Board staff reviewed the plan with the assistance of Tetra Tech, its third-party consultant. Under the direction of a Technical Advisory Group comprised of staff from the Regional Board, state and federal resources agencies, Encina and Tenera revised the Study Plan and submitted its final report to the Regional Board in January 2008. Tenera's IM&E study for Encina used sampling methodologies and analysis techniques from other recent impingement and entrainment studies, including those conducted for the AES Huntington Beach Generating Station and Duke Energy South Bay Power Plant.

Since the Project uses Encina's intake structure, when it was required to produce a Minimization Plan to account for its entrainment and impingement impacts, it used the Encina data approved by the Regional Board in order to support its Minimization Plan, so the data are necessarily compliant with EPA regulations and consistent with Regional Board standards.

3. Pursuant to Condition 8 of Poseidon's Coastal Development Permit, Poseidon Submitted the Encina Data to the Coastal Commission, Where It Was Again Reviewed and Endorsed Through a Peer Review Process

In March 2008, Poseidon provided data from the IM&E study to the Coastal Commission in order to satisfy the terms of Condition 8 in Poseidon's coastal development permit for the Project, which had been granted on November 15, 2007. The Coastal Commission retained Dr. Pete Raimondi—an independent scientist described by the Coastal Commission as "California's leading expert on entrainment analysis"—to review Poseidon's impingement and entrainment data. Dr. Raimondi, who has been a key participant and reviewer of most of the entrainment studies done along the California coast during the past decade, including those done for the AES Huntington Beach Generating Station, the Morro Bay Power Plant, and Moss Landing Plant, endorsed Tenera's IM&E study.

At the August 6, 2008 Coastal Commission hearing to review the first draft of the MLMP, which Poseidon had submitted July 3, 2008, the Coastal Commission heard testimony from Dr. Raimondi about the data. Dr. Raimondi explained to the Commission that the study's sampling methods were consistent with other recent entrainment studies and applauded the work performed by Tenera.[40] Dr. Raimondi's review and endorsement of the Tenera data, and the Coastal Commission's subsequent approval of the MLMP based thereupon, provide further indications of the validity of the data underlying the MLMP now before the Regional Board.

4. The Regional Board Has Before It All of the Necessary Information to Conclude that the Impingement and Entrainment Data Are Technically Sound

In his PowerPoint to the Coastal Commission, Dr. Raimondi describes the basis of his analysis. Poseidon has introduced into the administrative record all of the information upon which Dr. Raimondi relied in endorsing the entrainment study, including (1) "relevant Poseidon documents" that the Regional Board received with the March 6, 2008 Minimization Plan and related correspondence (2) "documents from the associated power plant's entrainment study," and (3) information generated "by working with the [Tenera] consultants."[41]

Items (1) and (3)—i.e., "relevant Poseidon documents" and information generated "by working with the [Tenera] consultants"—are embodied in two emails. The first email represents a communication between two scientists with Tenera Consultants that took place on April 4, 2008. In this email, John Steinbeck memorializes a telephone conversation that he had with Dr. Raimondi during which Mr. Steinbeck provided Dr. Raimondi with data that Dr. Raimondi needed to input into the Entrainment Effects Model ("EEM")—a model that is used by the U.S. Fish and Wildlife Service to estimate mortality rates resulting from cooling water withdrawals by

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40 Dr. Raimondi stated, "This is characteristic of Tenera International, which did the work, and that work was done very well." Coastal Commission transcript, August 6, 2008 hearing, p. 242:5-8, Appendix A, Tab 20.

41 Mayer Declaration (submitted under separate cover).

power plants.[42] In the second email of April 22, 2008, Mr. Steinbeck explains to Dr. Raimondi how certain EEM variances were calculated in the Encina study.[43]

Item (2)—i.e., "documents from the associated power plant's entrainment study"—refers to the final version of Encina's 316(b) entrainment study, which was not complete until January 2008.[44]

## V. THE PROJECT'S IMPINGEMENT EFFECTS WILL BE DE MINIMIS AND EVEN FURTHER REDUCED BY TECHNOLOGY

### 1. Factors Affecting Impingement Effects

The impingement effect of any intake structure is caused by its screens and is associated with two parameters: the intake flow and the velocity of this flow through the screens. For the purposes of this analysis, the impingement effect is assumed proportional to the intake flow at velocities above 0.5 feet per second ("fps").

### 2. Methodology for Impingement Assessment

The impingement assessment provided herein is based on the analysis of the most recent data that Tenera Consultants collected at the Encina intake facilities during the period June 1, 2004 to May 31, 2005. Although Tenera initially collected the data for Encina, Tenera has been able to use these data to project the impingement impacts that will be associated with the Project's standalone operations.

To isolate the impingement impacts associated with the Project's stand-alone intake operations, Tenera conducted a regression analysis that factored in Encina's historical flow rates and impingement effects. Figure 1 shows the average daily flow rate and impinged biomass for each of the 50 (out of 52) weekly surveys collected during the impingement survey period.[45]

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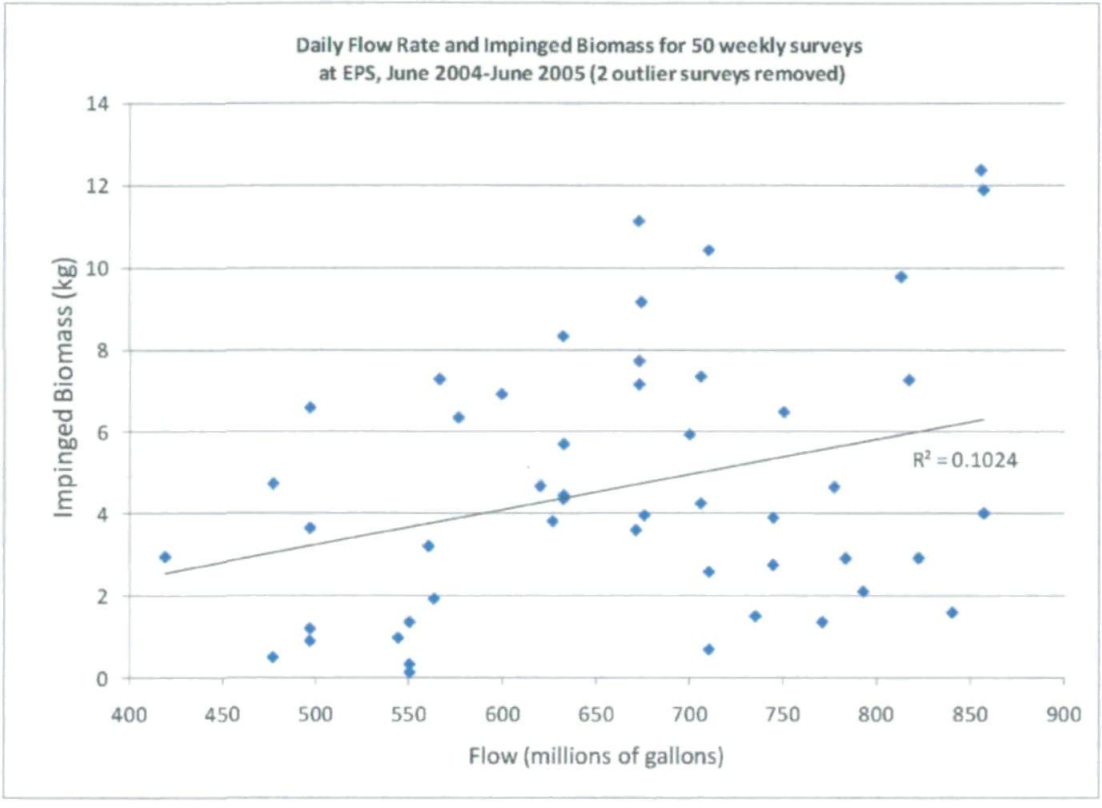
42 Email from J. Steinbeck to D. Mayer, April 24, 2008, Mayer Declaration, Attachment B.

43 Email from J. Steinbeck to P. Raimondi, April 22, 2008, Mayer Declaration, Attachment B.

44 Clean Water Act Section 316(b) Impingement Mortality and Entrainment Characterization Study, Cabrillo Power I LLC, Encina Power Station, January 2008. Tenera Environmental, Appendix A, Tab 3.

45 The two other samples were outliers and, therefore, were removed in order to get more accurate statistical correlation of the impingement results.




Whereas Encina's average intake flow during the 2004/2005 sampling period was 632.6 MGD,[46] the Project's maximum intake flow will be only 304 MGD. Because the Project's flow volumes will be less than Encina's, its impingement impacts are also proportionally less than the Project's projected impacts.

3. Tenera's Study Indicates that the Project's Impingement Effect Will Be 1.56 kg/day

Using the statistically significant relationship between the impingement effects and flows measured under normal power plant operations that occurred during the June 2004 to June 2005 impingement survey, Tenera concluded that the Project's stand-alone operations will result in an average daily impingement effect of 1.56 kg (3.45 lbs).

4. As a Stand-alone Facility, the Project Will Reduce its Intake Flow Rate to 0.5 Feet Per Second or Below, Thereby Further Reducing its Impingement Impacts

As noted above, Encina's daily water requirements are approximately twice those projected for the Project. To satisfy Encina's water demands, the power plant draws water in at a flow rate that exceeds the Project's projected flow rate. When the Project operates in stand-alone mode, therefore, it will be able to operate the existing intake facilities at a reduced flow

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46 March 6, 2008 Minimization Plan, pp 5-3.

rate and use fewer pumps to collect the water.[47] By lowering its flow rate below the 0.5 fps level, the Project "will reduce the impingement impacts associated with the desalination plant operations to a level that the Coastal Commission acknowledged is 'a de minimis impact.'"[48]

The EPA has recognized that a water intake flow rate equivalent to the Project's (0.5 ft/s) would minimize impingement impacts to insignificant levels. Specifically, in the context of establishing the "best technology available" under Section 316(b) of the federal Clean Water Act for new facilities utilizing cooling water intake structures (Phase I Rule), the EPA determined – based on substantial scientific evidence – that a maximum intake velocity of 0.5 ft/s or less minimizes adverse environmental impacts associated with impingement mortality to acceptable levels.[49] Similarly, for existing facilities (Phase II Rule), the EPA promulgated a regulation that an intake velocity of 0.5 ft/s or less minimizes impingement impacts to such an extent that no further technological or mitigation measures are necessary to protect fish species.[50] It should be noted that the EPA's Phase II Rule has been suspended pending ongoing litigation, but the litigation and subsequent regulatory suspension were not related to this issue and do not undermine the scientific basis of the EPA's determinations on this issue.

In developing the Phase I Rule, the EPA found that an approach velocity of 0.5 fps to protect fish species from impingement previously was used as guidance in at least three federal agency reports,[51] which were based in part on a study of fish swimming speeds and endurance performed by Sonnichsen et al. (1973).[52] To include an additional layer of conservatism for the Phase I Rule, the EPA prepared an additional analysis that concluded "thresholds should be based on the fishes' swimming speeds (which are related to the length of the fish) and endurance

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47 March 6, 2008 Minimization Plan, § 4.3 "Alternative Power Plant Intake & Screening Technologies"

48 *Id.*

49 *See* 66 Fed. Reg. 65274; *see also* 40 C.F.R. 125.84(b)(2), 125.84(c)(1).

50 40 C.F.R. 125.94(a)(1)(ii).

51 66 Fed. Reg. 65274 (citing Boreman, J. 1977. Impacts of power plant intake velocities on fish. Power Plant Team, U.S. Fish and Wildlife Service; 33 Christianson, A. G., F. H. Rainwater, M.A. Shirazi, and B.A. Tichenor. 1973. Reviewing environmental impact statements: power plant cooling systems, engineering aspects, U.S. Environmental Protection Agency (EPA), Pacific Northwest Environmental Research Laboratory, Corvallis, Oregon, Technical Series Report EPA–660/2–73–016; King, W. Instructional Memorandum RB–44: Review of NPDES (National Pollutant Discharge Elimination System) permit applications processed by the EPA (Environmental Protection Agency) or by the State with EPA oversight.'' In: U.S. Fish and Wildlife Service Navigable Waters Handbook.)

52 Sonnichsen, J.C., Bentley, G.F. Bailey, and R.E. Nakatani. 1973. A review of thermal power plant intake structure designs and related environmental considerations. Hanford Engineering Development Laboratory, Richland, Washington, HEDL–TME 73– 24, UC–12.

(which varies seasonally and is related to water quality)."[53] This analysis demonstrated that "the species and life stages evaluated could endure a velocity of 1.0 ft/s."[54] However, to "develop a threshold that could be applied nationally and is effective at preventing impingement of most species of fish at their different life stages, EPA applied a safety factor of two to the 1.0 ft/s threshold to derive a threshold of 0.5 ft/s. This safety factor, in part, is meant to ensure protection when screens become partly occluded by debris during operation and velocity increases through portions of the screen that remain open."[55] Further, "EPA compiled the data from three studies[56] on fish swim speeds ...[which] suggest that a 0.5 ft/s velocity would protect 96 percent of the tested fish."

In a similar fashion, the Coastal Commission independently determined that the Project's intake flow rate would help reduce impingement impacts to insignificant levels under the Coastal Act. Specifically, the Coastal Commission found that

> "Water velocities at the intake...would be less than 0.5 fps, which would conform to the U.S. EPA's "Best Technology Available" standard for minimizing impingement impacts...[and with] these low velocities, the already *de minimis* impingement impacts that Poseidon's project may cause are expected to be further reduced and thus mitigated to an insignificant level and consistent with Coastal Act Sections 30230 and 30231."[57]

Tenera's conclusion that the Project's stand-alone operations will result in an average daily impingement of 1.56 kg (3.45 lbs) of fish, sharks and rays does not account for the fact that the Project will be able to reduce the intake flow rate to 0.5 fps or that the Project will use fewer pumps. Therefore, the Project's impingement effects will actually be less than the already insignificant figure of 1.56 kg/day.

5. <u>The Project Will Install Variable Frequency Drives That Will Reduce Impingement</u>

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53 66 Fed. Reg. 65274.

54 *Id.*

55 *Id.*

56 *Id.* (citing "University of Washington study" [Smith, L.S., L.T. Carpenter, *Salmonid Fry Swimming Stamina Data for Diversion Screen Criteria*; Final Report (Fisheries Research Institute, University of Washington, Dec. 1987], "Turnpenny" [A.W.H. Turnpenny, *The Behavioral Basis of Fish Exclusion from Coastal Power Station Cooling Water Intakes.* Central Elec. Generating Bd. Central Elec. Research Labs., 1988], and EPRI [C.C. Countant et al., *Technical Evaluation of the Utility of Intake Approach Velocity As an Indicator of Potential Adverse Impact Under Clean Water Act Section 316(b)* (Electric Power Research Institute, 2001])

57 Coastal Commission's Final Adopted Findings, August 6, 2008, p. 56, Appendix A, Tab 19.

Poseidon previously has notified the Regional Board of its commitment to incorporate variable frequency drives to reduce the total intake flow for the desalination facility to no more than that needed at any given time.[58] The desalination plant intake pump station will be equipped with a variable frequency drive system to closely control the volume of the collected seawater. As water demand decreases during certain periods of the day and the year, the variable frequency drive system will automatically reduce the intake pump motor speed and decrease intake pump flow to the minimum level needed for water production.[59] By reducing the intake pump flow below EPA approved velocities, the Project will further minimize impingement.

## VI. METHODOLOGY FOR ASSESSMENT OF THE PROJECT'S ENTRAINMENT IMPACT

### 1. The Empirical Transport Model Calculates APF

The Empirical Transport Model ("ETM") is a widely used model to estimate mortality rates resulting from water intake systems. The ETM calculates what is known as the Area of Production Foregone (APF)—a value that represents the number of acres of habitat that must be created or restored to mitigate for the small marine organisms (e.g., fish larvae) that pass through the intake screens and become entrained in a water intake system.

### 2. Model: *APF = SWB x Pm*

The ETM is an algebraic model that incorporates two basic variables: Source Water Body (SWB) and Proportional Mortality (Pm).

The Source Water Body (SWB) represents the number of acres in which egg and larvae populations are subject to entrainment. The SWB value is limited to the area in which mature fish produce eggs and larvae. If mature fish do not spawn in a given area, that area will contain no entrainable organisms—i.e., no eggs or larvae to be drawn into and entrained by the intake system.

Proportional Mortality (Pm) represents the percentage of the population of a marine species in a given water body that will be drawn in and entrained by a water intake system. The Pm ratio is calculated by dividing (a) the number of marine organisms that are entrained in a water intake system by (b) the number of marine organisms in the same water body that are subject to entrainment (i.e., entrainable).[60]

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[58] March 6, 2008 Minimization Plan, § 4.1 "Feasibility Considerations", p. 4-3.

[59] March 6, 2008 Minimization Plan, § 4.4.1 "Installation of Variable Frequency Drives on Desalination Plant Intake Pumps", p. 4-26.

[60] Hypothetical illustration:

*Pm Quantity Entrained / Quantity Entrainable*

3. Entrainment Sampling is Conducted to Estimate Pm and APF

The example described above uses given SWB and Pm values to calculate the APF. It assumes that we can precisely identify both the size of the source water body and the rate of entrainment.

In the real world, however, scientists must make estimates with respect to these values—the ultimate goal being to provide an APF estimate that closely approximates the actual APF. For instance, in this case, Tenera Environmental ("Tenera") collected samples throughout the Agua Hedionda Lagoon in order to generate Encina's Impingement & Entrainment Study Plan, which the Regional Board approved in 2004, see Section V. 2, infra. Because of variation in the sampling data, each sample collected by Tenera represents an estimate of the actual Pm—i.e., the actual percentage of the population that becomes entrained through the intake system.

4. Confidence Levels for APF Estimates Are Reached Using Statistical Theory

In addition to producing SWB and Pm value estimates, entrainment sampling produces standard error estimates. Scientists apply these standard error estimates to the SWB and Pm values and, using basic statistics principles, calculate confidence intervals to indicate the reliability of the APF estimates. The following example illustrates these principles:

| | |
|---|---|
| Assume: Pm = 0.1, SWB = 500 acres; SE = 5%; SE/Pm = 0.5 | The graph represents the cumulative probability function for a set of normally distributed data with a |

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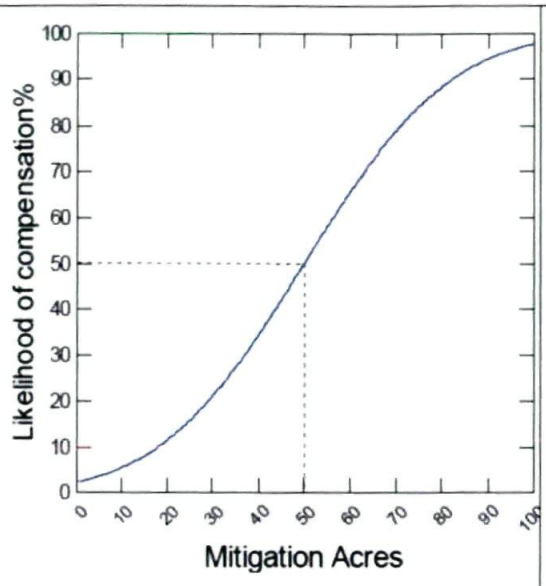
To illustrate the ETM's application, assume that the sampling conducted pursuant to an entrainment study demonstrates that a desalination plant's intake system draws in and entrains 100 anchovy larvae from a water body that contains 1000 anchovy larvae. In this case, Pm = 10% (i.e., 100 anchovies / 1000 anchovies). Next, assume that the intake system withdraws water from a 500-acre water body that contains mature anchovies; SWC = 500 acres. Based on this entrainment data, a straightforward application of the ETM calculates an APF of 50 acres (i.e., 500 acres x 10%).

This means that in order to mitigate for the entrainment losses caused by its intake system, the desalination plant would need to create or restore 50 acres of habitat similar to that of the source water body. These 50 acres of restored habitat would support the existence of the same number of larvae entrained by the desalination plant's operations.




mean of 50 and a given standard error.

The curve shows the probability (on the y-axis) that a value less than or equal to the corresponding APF value on the x-axis would occur from a sample of normally distributed data with the given mean and standard error.

The distribution represents the corresponding values that would define the upper and lower limits for a confidence interval based on a given probability level. For example, a 50% confidence interval (5% - 50% on the curve) would range from ~ 10 to 50 acres.

In this example, one can say—with a 50% level of confidence—that the ETM identifies the full extent of the entrainment impact.

5. Background Data Used for Preparation of Entrainment Assessment

Tenera Environmental collected entrainment data pursuant to Encina's Regional Board-approved IM&E study from June 2004 to May 2005. These data were provided to the Regional Board with Poseidon's March 2008 submittal.[61] All samples used for the entrainment assessment were collected in front of the Encina intake with a boat-towed plankton net.[62]

Based on these entrainment data, Tenera estimated the proportional entrainment mortality (Pm) of the most commonly entrained larval fish living in Agua Hedionda Lagoon by applying the ETM to the complete data. The potential entrainment contribution of the desalination facility operations was computed based on a total flow of 304 MGD (104 MGD flow to the desalination facility and 200 MGD for dilution of concentrated seawater).

In March 2008, Poseidon presented its ETM results to the Regional Board in preparation for its upcoming April 9, 2008 meeting. The ETM results were included as part of Poseidon's Minimization Plan. Attached to its Minimization Plan, Poseidon also submitted documentation containing impingement and entrainment data that Tenera had used to calculate the ETM results.[63]

Using the entrainment data that it collected during 2004 and 2005, Tenera concluded that the entrainment effect of the Project's stand-alone operation would extend over 36.8 acres of Agua Hedionda Lagoon (i.e., APF = 36.8 acres).

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61 March 6, 2008 Minimization Plan.

62 This is the standard protocol. Mayer Declaration, § 313.

63 March 6, 2008 Minimization Plan, Attachment 2-5.

6. To Arrive at an APF of 36.8 Acres, the Revised Plan Estimated the APF by Incorporating a Number of Very Conservative Assumptions While Entirely Discounting the Substantial Additional Ecological Benefits Associated with Poseidon's Mitigation

The ETM results presented in the Minimization Plan incorporated the following assumptions, which contributed to the conservative estimation of the APF value supporting the mitigation requirements set forth in the MLMP. Importantly, the ETM results in the MLMP continue to rely on the following specific, conservative assumptions:

a. Assumes 100% mortality of all marine organisms entering the intake. The ETM does not take into consideration any of the design and technology features that would be incorporated in the project to avoid impact to marine life (e.g., variable frequency drives, reduced flow rate velocities, etc.). The actual impact to marine life is expected to be substantially lower given these improvements.

b. Assumes 100% survival of all fish larvae in their natural environment. In fact, over 90% of the fish larvae are lost to predators and do not ever reach adulthood.

c. Assumes species are evenly distributed throughout the entire depth and volume of the water body. This assumption is very conservative for the site-specific conditions of Agua Hedionda Lagoon because it is well known that some impacted species (e.g., garibaldi) mainly inhabit the rocky area in immediate proximity to the entrance to the power plant intake while source water is drawn from a broader area. The assumption that the species are evenly distributed results in a higher SWB value, which, in turn, results in an overestimation of the APF.

d. Assumes the entire habitat from which the entrained fish larvae may have originated is destroyed. This approach to identifying the restoration requirement for the stand-alone desalination facility assumes that the area of production foregone (APF) is an area of lost habitat for all marine species inhabiting this area.

Moreover, the entrainment model does not account for the significant environmental benefits that extend well beyond compensating for the entrainment impacts. For example, the APF calculation does not take into account the tremendous ecological value of the restored acreage that will accrue to the valuable wetland species that are completely unaffected by the intake, such as the numerous riparian birds, reptiles, benthic organisms and mammals that will utilize the habitat for foraging, cover and nesting. Nor does the calculation consider the myriad phytoplankton, zooplankton and invertebrate species that are largely unaffected by the intake operations and benefit directly from the restored wetlands.

7. By Accounting for Ocean Species and Using an 80% Confidence Level, the MLMP Applies Additional Conservative Assumptions to the ETM

In March 2008, Poseidon provided a copy of its entrainment study to the Coastal Commission as required by Special Condition 8 of the Project's coastal development permit. Coastal Commission staff forwarded the study to Dr. Pete Raimondi for his review and recommendations. Dr. Raimondi provided the initial results of his review and recommendations to the Coastal Commission in April 2008.

During the course of his review of Tenera's entrainment study, Dr. Raimondi made two important revisions that resulted in his upward revision of the APF estimate to 55.4 acres from Tenera's 36.8 acres.

First, Dr. Raimondi added open ocean water species (e.g., the northern anchovy) to the entrainment model, even though he recognized that the water intake system's intake system's entrainment impact on ocean species is very small.[64] By adding ocean species, Dr. Raimondi's approach forces Poseidon to mitigate for a number of species that will be only minimally affected by the Project's operations. The addition of ocean species to the entrainment model adds an extra layer of resource protection to the Project's mitigation obligation.

Second, Dr. Raimondi applied an 80% confidence level APF as the basis for mitigation. This approach represents a significant departure from the way that entrainment studies have been conducted in the past and ensures that the MLMP plan will fully account for the Project's entrainment impacts. Whereas Tenera based its APF calculation on a 50% confidence interval—i.e., the level of confidence that past entrainment studies have generally used[65]—Dr. Raimondi used the higher 80% figure. Thus, to an 80% degree of certainty, the mitigation plan comprehensively identifies and accounts for any entrainment impacts.

8. Layering Conservative Assumptions Over an 80% Confidence Level Entrainment Model the MLMP Calculates a High APF Value, Ensuring Entrainment Impacts Will Be Fully Mitigated

As discussed above, the MLMP conservatively estimates Poseidon's mitigation burden by making two conservative adjustments regarding ocean species and confidence levels. When these adjustments are combined with all of the conservative assumptions that Tenera had already incorporated in arriving at the 36.8-acre figure, the entrainment model generates a final APF that ensures resource protection and promotes excess mitigation.

## VII. THE MLMP COMPLIES WITH THE APRIL RESOLUTION

The April Resolution required that Poseidon's amendment address the Regional Board staff's February 19, 2008 letter indicating its concerns with the second draft of the Minimization

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64 Dr. Raimondi's PowerPoint Presentation; Presented to Coastal Commission Staff and Poseidon on April 25, 2008 in San Francisco. Mayer Declaration, Attachment C.

65 Mayer Declaration, V E..

Plan (without clarifying how Poseidon's March 7, 2008 submittal did not already resolve the Regional Board's concerns), as well as the following items:

- Identification of impacts from impingement and entrainment;
- Adequate monitoring data to determine the impacts from impingement and entrainment;
- Coordination among participating agencies for the amendment of the Plan as required by Section 13225 of the California Water Code;
- Adequacy of mitigation; and
- Commitment to fully implement the amendment to the Plan.

A. Staff Concerns Have Been Addressed[66]

1. Interagency Input and Approval[67]

As described in Sections II E, III supra, the MLMP was developed in a months-long interagency process and will continue to engage the agencies in site selection, restoration plan development, and performance monitoring.

2. Adequacy of the Underlying Data and Modeling[68]

The underlying impingement and entrainment data and calculations are representative, adequate, and sound for both co-located and stand-alone operations. As detailed in Sections II, the MLMP has benefited from development in an interagency process involving independent scientific review in which the data and modeling were fully vetted.

3. Mitigation Will Fully Offset Impacts[69]

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66 Staff concerns have been identified in the February 19, 2008 letter, the April 4, 2008 Technical Report, and the April 17, 2008 email correspondence from Chiara Clemente to Peter MacLaggan. Concerns not summarized here have been mooted either by the third draft of the Minimization Plan conditionally approved at the April 9, 2008 meeting or the MLMP. For example, in point 1 of its February 19, 2008 letter, staff expressed concern that the second draft of the Minimization Plan did not include technology measures. Technology was addressed in the third draft of the Minimization Plan. See also Section V, supra, describing technology measures to reduce impingement.

67 February 19, 2008 letter, concern 7; April 4, 2008 Technical Report, concern 1, 2.

68 February 19, 2008 letter, concerns 2, 3, 8, 9, 10, 13, 14; April 4, 2008 Technical Report, concern 3; April 17, 2008 email correspondence from Chiara Clemente to Peter MacLaggan.

69 February 19, 2008 letter, concerns 4, 6, 11, 12, 15, 17

As explained in Sections V, supra, the entrainment modeling fully captures impacts for stand-alone operations using conservative, resource-protective assumption to arrive at a mitigation acreage amount, and is calculated to produce an anticipated loss rate rather than converted to a fixed dollar amount of loss.

4. Site Selection[70]

The actual mitigation site(s), which will be selected this year, will not be locked in to San Dieguito Lagoon or other pre-determined outcome as staff were concerned in April 2008, and will be at location(s) acceptable to the Executive Officer of the Regional Board, and the Executive Director of the Coastal Commission.

5. Presentation of a Single Site at this Site Was Not Anticipated, Required, or Feasible at this Juncture[71]

a. *Staff Course of Conduct Indicated that Poseidon Was to Consider Multiple Sites*

Consistent with the April Resolution, Poseidon submitted eleven specific mitigation sites determined during the interagency process and submitted a specific proposal for mitigation at these identified sites. In its December 2, 2008 letter to Poseidon, staff indicated that "the MLMP does not propose a specific mitigation site or a specific proposal for mitigation at an identified site." This letter is not clear in indicating staff's concern with the MLMP.

In the April 4, 2008 Technical Report, staff faulted Poseidon's mitigation planning for seeming to "favor a pre-determined outcome (i.e., mitigation in San Dieguito Lagoon)." In that same Technical Report, and with apparent approval, staff acknowledged that Poseidon was considering mitigation at several possible sites, including Frazee State Beach, Loma Alta Lagoon and Buena Vista Lagoon, in addition to Agua Hedionda Lagoon and San Dieguito Lagoon. The April 4, 2008 Technical Report stated that the adoption of the Minimization Plan was premature because it did not "clearly identify the method for the final selection and agency concurrence of the preferred mitigation alternative." In fact, both prior to the April 9, 2008 conditional approval, and during the interagency process, Poseidon was led to believe that staff viewed a short list of potential sites coupled with a rigorous screening, selection and implementation process that is evaluated against a comprehensive set of objective performance criteria a strength of an appropriate mitigation plan.

To the extent staff is concerned that Poseidon is not bringing to the Regional Board a single site for consideration, the concern is belated to the point of prejudice to Poseidon and is in contrast to its course of conduct.

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70 February 19, 2008 letter, concern 5; April 4, 2008 Technical Report, concern 4.

71 Letter from J. Robertus to Poseidon, December 2, 2008.

As an additional matter, at the May 1, 2008 interagency meeting, the Executive Officer indicated that the focus should not be on Agua Hedionda.[72] Thus, an staff concern that mitigation Agua Hedionda should be selected as the mitigation site is contrary to the guidance staff has provided Poseidon, to Poseidon's prejudice.

b. *The April Resolution Did Not Require the Presentation of a Single Site*

To the extent staff feels that Poseidon should have presented a single site for the Regional Board's approval, this position is not supported by the April Resolution.

c. *Selection of a Single Site at this Juncture Would Have Been Infeasible, Contrary to Water Code Section 13142.5*

Water Code Section 13142.5 requires that an "industrial installation using seawater for...industrial processing [employ] the best available site, design, technology, and mitigation measures feasible...to minimize the intake and mortality of all forms of marine life.".

A "single-site" plan would have been infeasible in the six-month time frame allotted by the April Resolution. In order to generate such a plan, Poseidon would have need to identify and acquire a site (without the benefit of prior agency approval as is being sought here), conduct the necessary engineering and environmental review (CEQA), secure multiple entitles including a RWQCB 401 Water Quality Certification, Dewatering Permit, Army Corps Sections 10 and 404 permits, a coastal development permit, a State Lands Commission Encroachment Permit, a Department of Fish & Game Streambed Alteration Agreement, etc., and negotiate any contractual issues associated with the acquisition of a selected site.

The Coastal Commission recognized this infeasibility when it directed staff to design a MLMP that will maintain, restore and enhance the marine environment without causing significant delays to the start of construction of a critically needed water supply facility in the midst of a water supply emergency. The San Diego County Water Authority in its April 2007 Updated 2005 Urban Water Management Plan relies upon the Project for the delivery of 56,000 acre-feet of local seawater desalination in 2011 in order to meet its overall water supply goals.[73] An unreasonable insistence that the MLMP be presented to the Regional Board within six months of the conditional approval of the Minimization Plan as a single-site plan (in addition to being in contradiction to the interagency process and the April Resolution) would derail the Project, whereas adopting the current MLMP will get the Project, including the development of the extensive mitigation wetlands, underway.

B. Resolution's Additional Concerns Have Been Addressed

1. Identification of Impacts from Impingement and Entrainment

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72 MacLaggan Declaration.

73 April 2007 Updated 2005 Urban Water Management Plan , p 4-6, Section 4.3.1 Appendix A, Tab 24.

See Sections IV-VI, supra, for discussion on how the impact data was gathered and vetted.

2. Adequate Monitoring Data to Determine Impacts from Impingement and Entrainment

See Sections IV-VI supra, for a discussion of the adequacy of the monitoring data supporting the MLMP.

3. Coordination Among Participating Agencies as Required by Water Code Section 13225

See Section II, supra, for a discussion of the interagency process to develop the MLMP.

4. Adequacy of Mitigation

See Section V, supra, describing the modeling resulting in the mitigation computation.

5. Commitment to Implement the MLMP

See Sections III, VIII, supra, describing the MLMP standards, agency enforcement mechanisms, and safeguards.

## VIII. SAFEGUARDS

### A. The MLMP Will Be Enforced by the Coastal Commission and the Regional Board

The MLMP includes several enforcement mechanisms. In particular, it provides for approval of the site selection, performance, and remediation by the Executive Director of the Coastal Commission. If approved by the Regional Board as well, it will be equally enforceable by the Executive Officer. The Executive Director and the Executive Officer will be authorized to order remediation to correct any deficiencies perceived in meeting the MLMP's rigorous performance standards.

### B. Poseidon Will Be Required to Seek Renewal of the NPDES Permit from the Regional Board

Poseidon will also be required seek renewal of its NPDES permit in order to begin commercial operations. Poseidon's Report of Waste Discharge is due April 1, 2011, and the current permit will expire October 1, 2011, and Poseidon is unlikely to have begun operations until months later. The Regional Board at that time will once again have the opportunity to examine the project and make adjustments if necessary.

### C. Regional Board May Reopen the Permit

As an additional safeguard, the Regional Board may choose to reopen the NPDES Permit. Specifically, the Permit provides that, "This Order may be modified, revoked and

reissued, or termination for cause including, but not limited to...Failure to comply with any condition of this Order[.]"[74] This reopener provision provides the Regional Board with complete control over activities authorized or contemplated by the NPDES permit.

D. Poseidon is Obligated to Comply With Progress Reporting Requirements Under the MLMP and the NPDES Permit

The MLMP provides that the Coastal Commission (and the Regional Board) will receive annual written project status reports and convene periodic public hearings to assess the progress and success of the project. Poseidon must make monitoring data available to the public on the Internet. In addition, Poseidon must comply with monitoring requirements for the Project established by the Regional Board in the NPDES permit.

E. Poseidon is Obligated to Comply with the MLMP Under the Terms of the Intake System Lease as Approved by the State Lands Commission

The State Lands Commission approved Poseidon's lease for the intake system August 22, 2008, incorporating MLMP compliance as an amendment. Among other enforcement conditions, under the terms of the lease, Poseidon must provide copies of all monitoring reports to the State Lands Commission.[75] The SLC lease also requires that Poseidon shall comply with the MLMP as adopted by the Coastal Commission on August 6, 2008; comply with the post restoration monitoring and remediation requirements set forth in the MLMP Section 5.4 for ensuring the success of the wetlands restoration site(s), provided that the standards include success criteria from four existing relatively undisturbed sites and that Poseidon achieve a 95% confidence level of success for the restoration required. Should the Coastal Commission amend Section 5.4 at any time, Poseidon shall request an amendment to the lease. Within ten years from the effective date of the lease, or upon such earlier time as agreed to by the State Lands Commission, or upon notice by the owner of Encina that it will no longer require the use of the intake and outfall that are the subject of the lease for the purposes of generating electrical power, the State Lands Commission will undertake an environmental review of eh ongoing impacts of operation of the desalination facility to determine if additional requirements are required. Finally, Poseidon shall provide the State Lands Commission a performance bond in the amount of $3,700,000 prior to commencement of operation of the desalination facility to ensure the implementation of compensatory mitigation, monitoring and maintenance as described in the MLMP.

F. Poseidon's MLMP Embodies the Recommendations Set Forth in the Regional Board's "Lessons Learned" Memorandum, Demonstrating Poseidon's Dedication Implementing the MLMP

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74 Order No. R9-2006-0065, VI.B.1.

75 State Lands Commission, Amendment of Lease PRC 8727.1, ¶¶11-24, Appendix A, Tab 2.

On March 12, 2008, the Regional Board staff issued a report to the Regional Board titled "Lessons Learned From the State Route 125" ("Report"), which provides guidance to the Regional Board on how to ensure discharger compliance in large multi-phase construction projects. Generally speaking, the Report recommends that, when issuing permits, the Regional Board should include specific requirements, clear expectations, and mechanism to enforce those requirements. The following points illustrate how the MLMP incorporates the Report's policy recommendation, demonstrating Poseidon's commitment to developing and implementing a successful mitigation plan.

1. Poseidon's MLMP Contains Specific Language Prescribing Performance Measures, Timelines and Requirements

In the Report, the Regional Board staff recommends that Regional Board directives include specific language describing performance measures, timelines, and requirements to ensure the discharger's compliance. Poseidon's MLMP embodies these recommendations. As discussed previously, the MLMP contains specific language describing performance measures, timelines and requirements. The MLMP's embodiment of the Report's recommendations demonstrates Poseidon's dedication to meeting Regional Board directives, including the minimization of marine life mortality.

2. The Regional Board Has Enforcement Tools to Ensure Poseidon Implements Fully Functional and Complete Mitigation Site(s)

In the Report, the Regional Board staff discusses how a discharger's failure to comply with Regional Board mandates can result in harmful effects to marine life. To ensure compliance in future projects, the Report advises the Regional Board that permit requirements should be accompanied by meaningful enforcement mechanisms.

Poseidon's commitment to implement the MLMP will be enforced by the Regional Board through the requirements of Poseidon's NPDES permit and Resolution R9-2008-00398, and by the Coastal Commission through Condition 8 of Poseidon's coastal development permit. Furthermore, by the time the Project begins commercial operations in late 2011 or early 2012, Poseidon will have to seek renewal of its NPDES permit before the Regional Board.

## IX. THE MLMP WAS NOT UNTIMELY SUBMITTED

Regional Board staff have indicated they believe the MLMP was untimely submitted to the Regional Board. As described in Section II, Regional Board staff received the draft MLMP on July 8, 2008 and again on September 17, 2008. Therefore, the Regional Board received the MLMP long before the October 8, 2009 deadline provided by the April Resolution.

Final language for the MLMP was submitted to the Regional Board on November 14, 2008, which was timely in light of the flexibility required to accomplish the Regional Board's directive that Poseidon participate in an interagency process to develop the MLMP. As detailed in Section II, Poseidon apprised the Regional Board of the delay in the Regional Board's receipt of the final MLMP language caused by the interagency process, and staff understood that

flexibility in the deadline was necessary, as evidenced in the Executive Officer's comments to that effect at the Regional Board's November 12, 2008 meeting.

## X. DENIAL OF THE MLMP WOULD BE ARBITRARY AND CAPRICIOUS

At a minimum, the Regional Board's review of the MLMP and subsequent decision regarding its adequacy must satisfy the arbitrary and capricious standard under California law. Denial of the MLMP on the basis of untimeliness would be arbitrary and capricious under the circumstances. The MLMP, received by the Regional Board on July 8, 2008, months before the deadline was not untimely. To the extent the Regional Board would wish to base a finding of untimeliness on the November 14, 2008 date on which it received the final language decided by Coastal Commission staff, this, too, would be arbitrary and capricious since Poseidon's submission would not have been untimely but for the tension with the deadline created by the April Resolution's directive to engage in the interagency process to develop the MLMP, which did not conclude until *after* the deadline.

In addition, it would be arbitrary and capricious to deny the MLMP or rescind the April Resolution on any substantive basis, as the Regional Board has participated in the interagency process without expressing unresolved concerns.

## XI. CONCLUSION

Poseidon respectfully urges the Regional Board to approve the MLMP. As comprehensively explained above and in Poseidon's prior submittals, the MLMP is the result of rigorous scientific review and extensive interagency collaboration. It sets strict performance standards and provides for agency checks that will ensure the creation of up to 55.4 acres of highly productive wetlands habitat that will completely offset any marine life mortality associated with the Project's operations, whether when operating jointly with Encina or when operating alone. If the Regional Board approves the MLMP, and allows Poseidon to proceed to the site selection process, Poseidon will be able to begin the process of securing entitlements for the mitigation site(s). This will allow Poseidon to break ground on schedule with the Project construction schedule, and provide prime estuarine wetland habitat, along with much needed drinking water to the region.

# COMMENTS ON CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD'S REVIEW OF POSEIDON RESOURCES CORPORATION'S MARINE LIFE MITIGATION PLAN FOR COMPLIANCE WITH RESOLUTION NO. R9-2008-0039

Submitted by:

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## APPENDIX VOLUME 1, Tabs 1 - 10

# APPENDIX A

# EXHIBITS TO COMMENTS ON CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD'S REVIEW OF POSEIDON RESOURCES CORPORATION'S MARINE LIFE MITIGATION PLAN FOR COMPLIANCE WITH RESOLUTION NO. R9-2008-0039

## Comments Submitted by Latham & Watkins LLP, January 26, 2009 – February 11, 2009 San Diego Regional Board Meeting, Item 6 - Poseidon Resources Corporation, Proposed Carlsbad Desalination Project (Order No. R9-2006-0065, NPDES No. CA0109223)

## Volume 1

| Tab No. | Date | Description |
|---|---|---|
| 1. | November 14, 2008 | Poseidon Resources Marine Life Mitigation Plan |
| 2. | n/a | PowerPoint Presentation Prepared by Dr. Raimondi: Review of Carlsbad Seawater Desalinization Project (CDP) |
| 3. | January 2008 | Clean Water Act Section 316(b) Impingement Mortality and Entrainment Characterization Study, Cabrillo Power I LLC, Encina Power Station, January 2008. Tenera Environmental. |
| 4. | February 19, 2008 | Regional Board Comment Letter on 2/12/07 Revised Plan |
| 5. | March 6, 2008 | Revised Flow, Entrainment, and Impingement Minimization Plan |
| 6. | March 7, 2008 | Poseidon Response to February 19, 2008 Regional Board Comments |
| 7. | March 7, 2008 | Email from Eric Becker to Tom Luster; wpaznokas@dfg.ca.gov; Sharon_Taylor@fws.gov; Peter MacLaggan; bruce@sdcoastkeeper.org; gabe@sdcoastkeeper.org; Judy Brown; rwilson@surfrider.org, copied to John Odermatt; Mike McCann. Subject: Poseidon Revised Flow, Entrainment, & Impingement Plan & Response to Regional Board Comments |
| 8. | April 2, 2008 | Email from S. Townsend to various people, including E. Becker. Subject: Marine Life Mitigation Plan Meeting for Poseidon Desla Plant |
| 9. | April 4, 2008 | RWQCB Technical Report, Review of Carlsbad Seawater Desalination Plant Flow, Entrainment, and Impingement Minimization Plan |
| 10. | April 9, 2008 | Reporter's Transcript of Proceedings, California Regional Waater Quality Control Board, San Diego Region, Partial Transcript of Proceedings, Public Hearing |

# APPENDIX A

## Volume 2

| Tab No. | Date | Description |
|---|---|---|
| 11. | April 10, 2008 | Email from P. MacLaggan to J. Robertus. Subject: Re: Update on Attendees for May 1-2 Meetings |
| 12. | April 10, 2008 | Email from P. MacLaggan to J. Robertus. Subject: Subject: May 1 Desal Mitigation Meeting |
| 13. | April 17, 2008 | Email from C. Clemente to P. MacLaggan. Subject: Poseidon's CDP Plan - questions regarding IM & E assessments |
| 14. | April 22, 2008 | Email from J. Steinbeck to P. Raimondi |
| 15. | April 24, 2008 | Email from J. Steinbeck to D. Mayer |
| 16. | April 30, 2008 | Email from P. MacLaggan to C. Clemente, copied to Brian Kelley; David Barker; Deborah Woodward; Mike McCann. Subject: Re: Poseidon's CDP Plan – questions regarding IM & E assessments |
| 17. | July 8, 2008 | Email from S. Townsend to various people, including J. Robertus. Subject: Poseidon' Marine Life Mitigation Plan |
| 18. | August 5, 2008 | Email from G. Newton to J. Brown. Subject: Fwd: RE: Coordination re: Poseidon? |
| 19. | August 6, 2008 | California Coastal Commission Final Adopted Findings (Item W4a). Application File No. E-06-013. Permittee: Poseidon Resources (Channelside) LLC / Cabrillo Power II LLC |
| 20. | August 6, 2008 | Reporter's Transcript of Proceedings, California Coastal Commission Meeting, Agenda Items Nos. 4.a., 5.a., 5.b., Vol. 2 of 2, pgs 163 – 347. |
| 21. | August 22, 2008 | State Lands Commission Final Lease Amendment No. PRC 8727.1 |
| 22. | November 21, 2008 | California Coastal Commission Recommended Revised Condition Compliance Findings (Item W16a). Condition Compliance for CDP No. E-06-013 – Poseidon Resources (Channelside), LLC; Special Condition 8: Submittal of a Marine Life Mitigation Plan |
| 23. | December 2, 2008 | Letter from RWQCB to Poseidon re: Review of Proposed Poseidon Resources Carlsbad Desalination Plant Marine Life Mitigation Plan, Resolution No. R9-2008-0039 |
| 24. | April 2007 | Updated 2005 Urban Water Management Plan, San Diego County water Authority. |
| 25. | December 18, 2001 | National Pollutant Discharge Elimination System: Regulations Addressing Cooling Water Intake Structures for New Facilities, Final Rule. 66 Fed. Reg. 65256 |

# APPENDIX A

| Tab No. | Date | Description |
|---|---|---|
| 26. | July 9, 2004 | National Pollutant Discharge Elimination System—Final Regulations to Establish Requirements for Cooling Water Intake Structures at Phase II Existing Facilities, Final Rule. 69 Fed. Reg. 41576 |
| 27. | July 9, 2007 | National Pollutant Discharge Elimination System—Suspension of Regulations Establishing Requirements for Cooling Water Intake Structures at Phase II Existing Facilities. 72 Fed. Reg. 37107 |
| 28. | n/a | 40 C.F.R. 125.84 |
| 29. | n/a | 40 C.F.R. 125.94 |