

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION**

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**RESPONSIVENESS SUMMARY
INCLUDING RESPONSES TO COMMENTS**

**ORDER NO. R9-2009-0038
AMENDING**

**ORDER NO. R9-2006-0065 (NPDES NO. CA0109223)
WASTE DISCHARGE REQUIREMENTS FOR
THE POSEIDON RESOURCES CORPORATION
CARLSBAD DESALINATION PROJECT
DISCHARGE TO THE PACIFIC OCEAN VIA
THE ENCINA POWER STATION DISCHARGE CHANNEL**

The Carlsbad Desalination Project (CDP) has been subject to extensive regulatory process before this agency and other resource agencies, and the March 27, 2009 Flow, Entrainment and Impingement Minimization Plan has been considered in several iterations at four public meetings before the Regional Board, with substantial public comment. Substantial additional comments regarding the details of the Regional Board's proposed decision were received in February, March and April of 2009, including at the public hearing held on April 8, 2009. To fully respond to this additional public comment, to provide a detailed explanation for the bases for the Board's decision on this matter, and to provide citations to the evidence upon which the Board has based its decision, the California Regional Water Quality Control Board, San Diego Region (hereinafter Regional Board) staff have prepared the following summary of significant issues and responses to comments submitted throughout the course of this proceeding as follows:

**Summary of Significant Issues
Description of the CDP**

* Staff endeavored to create a Responsiveness Summary that is as complete as possible. Due to the volume of comments received by the Regional Board, however, staff focused on the most significant issues and comments. In addition, staff attempted to minimize redundant responses to similar comments, which resulted in some minor inconsistencies in the corresponding responses, and, in some cases, a response of "comment noted." In those situations, the reader should also review the responses to similar comments for the full context of the response. Finally, many of the most recent comments were received too late for substantive written responses. The most significant of those comments will be responded to orally by staff at the Board Meeting.

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On August 16, 2006, the Regional Board adopted Order No. R9-2006-0065 (NPDES No. CA0109223) (Order No. R9-2006-0065) establishing waste discharge requirements for Poseidon Resources Corporation's (Discharger) Carlsbad Desalination Project (CDP).

As described in revised Tentative Order No. R9-2009-0038, the CDP will convert approximately 107 million gallons per day (MGD) of source water into approximately 50 MGD of potable water. The other 57 MGD will be discharged as a combined waste stream comprised of concentrated saline wastewater and filter backwash wastewater. Approximately 197 MGD of additional source water will be used to dilute the 57 MGD wastewater stream, for a total discharge flow rate of approximately 254 MGD. The 197 MGD of additional source water not used for production is needed as dilution water to allow the CDP to comply with the salinity requirements of the NPDES permit. The total source water needed for conversion to potable water and dilution of the waste stream will be approximately 304 MGD.

The CDP will be located adjacent to an existing power plant referred to as the Encina Power Station (EPS). The EPS includes an intake structure that draws water from Agua Hedionda Lagoon (AHL) to supply cooling water for its electricity generation operations. After use, the cooling water the EPS withdraws from AHL is discharged to the Pacific Ocean. The CDP will use the existing intake and discharge system of the EPS to supply its source water, and discharge its wastewater stream. The CDP will use the water the EPS discharges after it has been used for cooling purposes (shown on CDP Flow Schematic – April 9, 2009 Regional Board Agenda Item No. 7, Attachment 1b). On some days, it is expected that the EPS will not discharge enough water to supply the 304 MGD needed for its desalination operations. On those days, the intake system will withdraw from AHL additional water above and beyond what the EPS is using in order to supply the CDP. Although the cooling water withdrawals of the EPS vary from year to year, information available from 2008 indicates that the EPS would have met approximately 89% percent of the CDP's water needs (i.e., 304 MGD), had the CDP been in operation in calendar year 2008 (March 27, 2009 Flow, Entrainment and Impingement Minimization Plan, Attachment 1 - EPS 2008 Daily Flow Data). Since the fifth EPS generating unit (Unit 5) was put into service in 1976, annual water use at the EPS for cooling water purposes has never dropped below 61% of the water that would be needed on a daily basis by the CDP. (Minimization Plan, 6-4.)

Relationship of Board Action to Prior Board Actions

In issuing Order No. R9-2006-0065, the Regional Board previously determined the Discharger's obligations under the federal Clean Water Act, 33 U.S.C. § 1251 et seq., and the National Pollutant Discharge Elimination System (NPDES), 33 U.S.C. § 1342. Tentative Order No. R9-2009-0038 pertains exclusively to the Discharger's obligations under a provision of state law applicable to seawater intakes, specifically California Water Code (CWC) Section 13142.5(b). CWC Section 13142.5(b) provides that: "For each new or expanded coastal powerplant or other industrial installation using seawater for cooling, heating, or industrial processing, the best available site, design, technology,

and mitigation measures feasible shall be used to minimize the intake and mortality of all forms of marine life.”

When the Regional Board reviewed the CDP in 2006 and issued Order No. R9-2006-0065, the Board determined that when the EPS is discharging sufficient water to meet the proposed source water needs of the CDP (304 MGD), the potential for the CDP to cause intake and mortality of marine life, i.e., impingement and entrainment, is *de minimis*. (Order No. R9-2006-0065, Attachment F – Fact Sheet, Section VII.B.4.b.) Order No. R9-2009-0038, concerns, therefore, the situation in which the EPS is *not* generating sufficient discharge to meet the source water intake needs of the CDP (“co-location operation for CDP benefit”). Co-location operation for CDP benefit can occur under two conditions: (1) when some or all of the generating units at the EPS are temporarily shut down, or (2) when some or all of the generating units at the EPS are operating but its discharge volume is not sufficient to meet the CDP’s intake requirements.

Minimization Plan Provisions and Proceedings

To ensure compliance with CWC Section 13142.5(b) when the CDP is operating in co-location mode (versus complete stand-alone mode when the EPS has permanently ceased operations), Section VI.C.2.e of Order No. R9-2006-0065 required the Discharger to submit for Regional Board approval a Flow, Entrainment and Impingement Minimization Plan (Minimization Plan) that “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 CDP intake requirements exceed the volume of water being discharged by the EPS” within 180 days of adoption of the Order No. R9-2006-0065.

To satisfy Section VI.C.2.e. of Order No. R9-2006-0065, the Discharger relied upon data collected in AHL pursuant to a field study, the work plan for which was approved by the Regional Board. These data were collected for the purpose of characterizing entrainment and impingement at the EPS’s intake structure. The EPS is subject to federal Clean Water Act Section 316(b), 33 U.S.C. § 1326(b), which requires “that the location, design, construction, and capacity of cooling water intake structures reflect the best technology available for minimizing adverse environmental impact.” The work plan, entitled, “Cabrillo Power I LLC, Encina Power Station, 316(b) Cooling Water Intake Effects Entrainment and Impingement Sampling Plan,” was reviewed and approved by the Regional Board, U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Game (CDFG), and other agencies. (March 27, 2009 Flow, Entrainment and Impingement Minimization Plan, Attachment 4). The results of the field program, conducted in 2004-2005, are provided in the report entitled, “CLEAN WATER ACT SECTION 316(b) IMPINGEMENT MORTALITY AND ENTRAINMENT CHARACTERIZATION STUDY, Effects on the Biological Resources of Agua Hedionda Lagoon and the Nearshore Ocean Environment, January 2008” (“E & I Study”). (Latham & Watkins comment letter dated January 26, 2009, Appendix A, Tab 3.)

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On February 13, 2007, the Discharger submitted a draft Minimization Plan dated February 12, 2007 in order to comply with Section VI.C.2.e. of Order No. R9-2006-0065. After input from Regional Board staff and the public, the February 2007 draft was followed by a June 1, 2007 Minimization Plan. The Minimization Plan was divided into chapters addressing the four principal factors of CWC Section 13142.5(b) – site, design, technology, and mitigation – to be used to minimize the intake and mortality of marine life.

Regional Board staff reviewed the revised Minimization Plan over the next several months and in a letter to the Discharger dated February 19, 2008, Regional Board staff identified several issues to be addressed before the Minimization Plan would be ready for Regional Board approval. In response to staff's February 19, 2008 letter, on March 7, 2008, the Discharger submitted an updated version of the Minimization Plan, dated March 6, 2008. The Regional Board conditionally approved the March 6, 2008 version of the Minimization on April 9, 2008 (Resolution No. R9-2008-0039).

On April 17, 2008, Regional Board staff questioned the Discharger, through an email, whether the value calculated for potential impingement in the March 6, 2008 Minimization Plan was in error. The daily average of 0.96 kg appeared to have been calculated by dividing the weight of fish collected during 52 sample days by 365 days (instead of 52), and fish counts and weights presented as prorated to 304 MGD did not appear to be prorated. On April 30, 2008, the Discharger sent an email to staff confirming that the March 6, 2008 Plan contained an error in the calculation used to convert the 2004-2005 EPS sample data to a CDP daily projection. While the Discharger acknowledged the March 6 Plan contained an error, it did not provide a projection based on corrected, prorated EPS data. Instead, it provided staff with a linear regression of the 2004-2005 EPS data for fish weight, exclusive of two high days of impingement, as an approach it wished staff to consider. This new approach estimated impingement at 1.56 kg/day. The Discharger revised the March 6, 2008 Minimization Plan then pending before the Board to remove the incorrect calculation when it submitted the March 9, 2009, Minimization Plan.

While the March 6, 2008 Minimization Plan was pending before the Regional Board, the California Coastal Commission also was evaluating the potential for entrainment and impingement at the CDP, as part of the proceedings related to the Coastal Development Permit for the CDP. The Discharger prepared the Marine Life Mitigation Plan (MLMP) both to satisfy conditions imposed by the Coastal Commission and to satisfy the requirements of Resolution No. R9-2008-0039 to evaluate mitigation options for the CDP. On November 18, 2008, the Discharger submitted the final MLMP to the Regional Board as an amendment to the mitigation provisions in the March 6, 2008 Minimization Plan to satisfy the conditions of Resolution No. R9-2008-0039.

On February 11, 2009, the Regional Board held a hearing to consider whether the MLMP satisfied the conditions established in Resolution No. R9-2008-0039, and, if not, whether the Resolution was thereby inoperative by its own terms. At the commencement of the meeting, the Executive Officer identified a narrowed list of staff's

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outstanding issues concerning the March 6, 2008 Minimization Plan, as supplemented by the MLMP, including “(3) Poseidon to provide the flow-proportioned calculations for Poseidon’s impacts due to impingement, to help support the Board’s determination that these impacts are *de minimis*.”

Regional Board staff and the Discharger met to discuss the outstanding issue no. 3 on numerous occasions following the February 11, 2009 meeting. During these discussions, the Discharger submitted “flow-proportioned calculations,” corrected as compared to the March 6, 2008, Minimization Plan, which resulted in an estimated projected impingement of 3.74 kg/day, derived by prorating all 52 samples to 304 MGD. When two days of data considered by the Discharger to be “outliers” are excluded, the “flow-proportioned calculations” result in an estimated projected impingement of 2.11 kg/day. As a result of the discussions, the Discharger also developed several other estimates of impingement using variations on these methodologies.

On March 9, 2009, the Discharger submitted a revised Minimization Plan, including the MLMP, for Regional Board consideration. The March 9, 2009 Minimization Plan included revisions to Chapter 6 regarding mitigation, including the incorporation of the MLMP, additional provisions placing the Regional Board on equal footing with the Coastal Commission to address outstanding issue no. 1, and provisions identifying the five sites within the Regional Board boundaries as priority mitigation sites to address outstanding issue no. 2. It also included Attachment 5, which explained and identified several possible approaches to estimating impingement, including a flow-proportioned approach and a linear regression approach, and three variations of the other two approaches. Among these approaches is “Proportional Approach 3-B” which results in an estimate of 4.7 kg/day of projected impingement.

The Discharger believes that other approaches resulting in lower estimates are more appropriate and submitted revisions to the Minimization Plan on March 27, 2009 to provide additional analysis to support its claim that two days of high impingement during the 2004-2005 sample period are “outliers” and should be excluded from impingement estimates. While staff and the Discharger disagree about whether it is appropriate to exclude two high impingement days from the 2004-2005 EPS sample period, it is unnecessary to resolve this dispute because, at the April 8, 2009 meeting, the Discharger agreed to monitor impingement at the intake and fish productivity at the mitigation site(s) and to meet a fish productivity performance standard of 4.7 kg/day (1715.5 kg/year), a number derived from Proportional Approach 3-B. The Board staff believes that 4.7 kg/day is a reasonable, conservative, estimate of impingement.

After receiving extensive public comment at its April 8, 2009 hearing regarding the Minimization Plan, the Regional Board closed the record and continued the matter for final decision at its May 13, 2009 meeting.

SITE

Chapter 2 of the Minimization Plan addresses the “site” factor of CWC Section 13142.5(b). The CDP will be co-located with the EPS and use the EPS’s existing intake and discharge facilities, which draw cooling water from AHL and discharge into the Pacific Ocean. A number of commenters requested that the Regional Board consider alternative sites for the CDP outside of the Carlsbad area, including areas elsewhere in San Diego County and elsewhere in California. To determine whether these alternative sites are feasible under conditions of co-location operation for CDP benefit, the Board has examined the fundamental project objectives of the CDP, based on the evidence before it, including the objectives as described by the Discharger and the City of Carlsbad in its comments, the objectives as described in the EIR certified by the City of Carlsbad, and the project objectives as described in the August 6, 2008 findings of the Coastal Commission.

As described by the Discharger, the approximately 50 MGD of potable water that the CDP will produce will be enough water to supply approximately 300,000 San Diego County residents, or approximately 112,000 households. The Discharger is under contract to provide the water from the CDP to various water agencies in the San Diego region. The City of Carlsbad has contracted with the Discharger to allow the City to take up to 100 percent of its water needs from the desalination plant, approximately 25 MGD or 27,990 af/yr. Carlsbad has contract rights to 25 MGD and will take water based on daily demand projected at between 10 MGD and 25 MGD. The following additional cities and water districts have contracts with the Discharger to provide desalinated water to the customers in their service territories: City of Oceanside for up to 5,000 af/yr; Olivenhain Water District for up to 5,000 af/yr; Rainbow Municipal Water District for up to 7,500 af/yr; Rincon Del Diablo Municipal Water District for up to 4,000 af/yr; Santa Fe Irrigation District for up to 2,000 af/yr; Sweetwater Authority for up to 2,400 af/yr; Vallecitos Water District for up to 7,500 af/yr; Valley Center Municipal Water District for up to 7,500 af/yr. (Latham & Watkins comment letter dated April 2, 2009, Appendix C, Tab 31.)

The Discharger defines the CDP’s fundamental project objectives as: (1) allowing Carlsbad to purchase 100 percent of its potable water supply needs from the desalination plant, thus providing a secure, local water supply that is not subject to the variations of drought or political or legal constraints; (2) reducing local dependence on water imported from outside the San Diego County area and from outside of Carlsbad and surrounding areas; (3) providing water at or below the cost of imported water supplies; and (4) meeting the CDP’s planned contribution of desalinated water as a component of regional water supply planning goals. The objectives are summarized in the Environmental Impact Report certified by the City of Carlsbad for the CDP and related findings adopted by the City, and on page 14 of 106 of the findings adopted on August 6, 2008 by the California Coastal Commission for the Coastal Development Permit adopted for the project.

Among the fundamental project objectives of the CDP as defined by the Discharger is the objective to provide a local and reliable water source. The record indicates that the

City of Carlsbad will be able to meet 100 percent of its potable water supply needs from the desalination plant, a secure, local water supply not subject to the variations of drought or political or legal constraints. Any site for the project outside the City of Carlsbad might subject the project to the control of other water agencies or governmental jurisdictions. For example, if the project were to be sited in another city, that city might exercise its police powers to utilize the water within its own jurisdiction, or to regulate or prohibit the transmission of water outside of its municipal boundaries. Thus, sites outside of Carlsbad could potentially conflict with this fundamental project objective, which would mean that any such site is neither available nor feasible for use by the CDP, under conditions of co-located operation, within the meaning of Water Code section 13142.5(b).

A second fundamental project objective of the CDP as defined by the Discharger is reducing local dependence on water imported from outside the San Diego County area and from outside of Carlsbad and surrounding areas. Importation of water over substantial distances increases the cost of the water, increases the energy necessary to deliver the water, and makes the supply of water less secure and more vulnerable to disruption from broken or inoperable pipelines due to earthquakes or other natural disasters. Also, as noted on page 2-6 of the Minimization Plan, long-distance transportation of water from the CDP to its intended users would cause an increase in carbon emissions because significant additional energy would be required to accomplish it, thereby increasing greenhouse gas emissions associated with the Project. Any site too remote from Carlsbad and surrounding areas would simply be another form of "imported water" that would have to be transported to the location of the agencies that are purchasing the water. While one of the agencies purchasing the water from the CDP is located in southern San Diego County, the remaining agencies provide water service within Northern San Diego County and the vicinity of Carlsbad. Considering this fundamental project objective, the Regional Board concludes that alternative sites that are too remote from Carlsbad would not be feasible to minimize the intake and mortality of all forms of marine life pursuant to Section 13142.5(b) under conditions of co-located operation for the CDP benefit.

A third fundamental project objective of the CDP identified by the Discharger is providing water at or below the cost of imported water supplies. Alternative sites would each require the construction of a new form of seawater intake system. The construction of a new seawater intake system of any type, such as a new seawater intake at the Encina Water Pollution Control Facility (see, e.g., Minimization Plan at 2-5) or the construction of a new seawater intake infiltration gallery, (see e.g., Coastal Commission August 6, 2008 findings at Page 51 of 106), would be very costly or "cost prohibitive" and increase the cost of production of the water well above the cost of imported water supplies. Under conditions of co-located operation, the existing intake may be used while EPS is operating. Therefore, alternative sites requiring the construction of a new seawater intake system are not feasible to minimize the intake and mortality of all forms of marine life pursuant to Section 13142.5(b) under these circumstances.

Another important objective of the CDP is its planned contribution of desalinated water as a component of meeting regional water supply planning goals. The Discharger reports that CDP's expected output of 50 MGD will supply about 10 percent of the desalinated water needed in California by 2030, according to the Department of Water Resources, and 56,000 af/yr out of the 150,000 af/yr of desalinated water that is needed to ensure regional reliability, according to the Metropolitan Water District of Southern California. In order to satisfy this objective, the CDP must be constructed at a site that can accommodate a 50 MGD facility, so that the CDP's output will be sufficient to satisfy Carlsbad's demand, the demand of other local agencies, and the CDP's planned contribution of desalinated water as a component of regional water supplies. The Project Environmental Impact Report (EIR), certified by Carlsbad on June 13, 2006, analyzed a reduced output (25 MGD) alternative but found that the alternative would be insufficient to satisfy the CDP's planned contribution to regional water supplies or the demand of local agencies other than Carlsbad. Considering this fundamental project objective alternative sites that can not accommodate a 50 MGD facility are not feasible to minimize the intake and mortality of all forms of marine life pursuant to Section 13142.5(b) under conditions of co-located operation for CDP benefit.

As described on Page 2-4 of the Minimization Plan, the EIR, certified by the City of Carlsbad on June 13, 2006, analyzed a number of alternative sites within the boundaries of the EPS and alternative sites within the boundaries of the Encina Water Pollution Control Facility. The Coastal Commission staff requested an evaluation of other potential locations for the desalination facility and its associated infrastructure. As a result, the Discharger added the Maerke Reservoir site to the list of alternative sites considered. Each of these sites is neither available nor feasible for the reasons set forth in the Minimization Plan Sections 2.2.1, 2.2.2 and 2.2.3, and the findings adopted by the City of Carlsbad on June 13, 2006 and the California Coastal Commission on August 8, 2008. These facts support the Board's determination that the site proposed by the Discharger is the best available site feasible to minimize the intake and mortality of all forms of marine life pursuant to Section 13142.5(b) under conditions of co-location operation for the CDP benefit.

In its findings adopted on August 6, 2008, the Coastal Commission found that "[t]here are no feasible and less environmentally damaging alternative locations to draw in the needed seawater (e.g. subsurface or offshore)." (Page 28 of 106.) The Coastal Commission further noted on page 48 of 106 of its findings, based on evidence presented in the City of Carlsbad Environmental Impact Report, that alternative intake systems at other sites, such as horizontal wells, vertical beach wells or infiltration galleries in lieu of the CDP's use of the EPS power plant intake system at the proposed EPS site "would cause more significant impacts than those caused by the existing [EPS site] power plant intake and that they would be economically infeasible." On page 51 of 106, the Coastal Commission found that alternative sites using proposed or potential (but unbuilt) alternative seawater intake systems, such as slant wells at Dana Point or elsewhere, infiltration galleries, horizontal wells, vertical beach wells or other types of subsurface intakes would be infeasible alternative sites for the CDP project: "[T]he proposed alternatives would result in greater environmental impacts than the proposed

project due to the destruction of coastal habitat from construction of intake systems, the loss of public use of coastal land due to numerous intake collector wells that would be located on the beach, and the adverse environmental impacts to coastal resources during construction, including but not limited to the creation of negative traffic, noise, and air pollution impacts.”

The Coastal Commission’s finding that there are no feasible and less environmentally damaging alternative locations available to the Project is noted and cited on page 2-8 and note 6 of the Minimization Plan. The Regional Board has considered these conclusions and gives them great weight in finding that the site proposed by the Discharger is the best available site feasible to minimize the intake and mortality of all forms of marine life pursuant to Section 13142.5(b) under conditions of co-location operation for the benefit of CDP.

When the Board adopted Order No. R9-2006-0065 in 2006 granting approval of the CDP, it determined that the EPS site was appropriate for the project under Section 13142.5(b), despite the possibility of impacts to marine life for operations when the EPS was *not* generating sufficient discharge to meet the source water intake needs of the CDP. The Board required that a Minimization Plan be prepared to assess the feasibility of “site-specific” plans, procedures, practices and mitigation measures to minimize impacts and address any “additional review” required by Section 13142.5(b). Thus the Board determined in 2006 that the EPS site was the best available site feasible to minimize the intake and mortality of all forms of marine life pursuant to Section 13142.5(b) under conditions of co-location operation for the benefit of CDP. Such 2006 determination constitutes a separate and independent basis for a determination that the CDP has complied with 13142.5(b) for co-location operation. However, because of the possibility that such 2006 determination might be challenged indirectly through an attack on the Board’s approval of the Minimization Plan, as a separate and alternative ground, the Board (at the Discharger’s request) has reexamined anew without regard to its 2006 determination, the question of the appropriate site for the CDP and has made the determination in this Order, including review of the information set forth above, that the proposed site is the best available site feasible to minimize the intake and mortality of all forms of marine life pursuant to Section 13142.5(b) under conditions of co-located operations.

One commenter at the April 8, 2009 hearing suggested that a feasible alternative site for the CDP would be to locate the CDP somewhere else in San Diego County, and then use the San Diego County Water Authority Pipeline to transfer the water or use “paper water credits” to allow project users to get the benefit of water production. Such an alternative site would neither be available nor feasible within the meaning of Section 13142.5(b) for the reasons that (1) no alternative location with access to seawater was described by the commenter; (2) locations remote from the ocean would be infeasible due to the lack of access to seawater, or the extremely high costs and logistical problems of pumping seawater and brine to and from the desalination facility remote from the ocean; and (3) another location in San Diego County would require the construction of a new seawater intake system. The construction of new seawater intake

systems at sites other than the EPS was found to be infeasible due to the costs of constructing a completely new intake system when the existing intake operated at EPS is available to meet CDP's intake needs while under co-located operation.

MITIGATION

Chapter 6 of the March 27, 2009 Minimization Plan addresses the best available mitigation feasible to minimize the intake and mortality of marine life pursuant to CWC Section 13142.5(b).

The Minimization Plan provides for the implementation of mitigation in addition to, as opposed to in lieu of, site, design, and technology measures to minimize the intake and mortality of marine life.

Chapter 5 of the Minimization Plan estimates potential entrainment and impingement that may be associated with the CDP under conditions tantamount to stand-alone operations with a permanent shutdown of the EPS. That is, these estimates assume that the CDP receives all 304 MGD of its source water from AHL and no water from the EPS's discharges. These estimates are not reduced to account for co-located operations, although the Order will require review under Water Code section 13142.5(b) of mitigation if CDP proposes to operate in stand-alone mode, with permanent shut down of EPS generating units.

Chapter 6 of the Minimization Plan prescribes mitigation requirements, the implementation of which is expected to fully compensate for the potential entrainment and impingement identified in Chapter 5. The Order requires productivity monitoring through establishment of a fish productivity standard, or biological performance standard, of 1,715.5 kg/year. In addition, the success of mitigation for entrainment associated with CDP's operations will be measured through the MLMP.

Entrainment

For purposes of preparing the MLMP, the CDP's entrainment was projected using the Empirical Transport Model ("ETM"), which 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 will provide wetlands benefits sufficient to mitigate for the fish larvae that pass through the intake screens and become entrained in a water intake system.

As discussed in the Minimization Plan, 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 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 larvae to be drawn into and entrained by the intake system. The SWB for the CDP is primarily AHL.

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 larvae that are entrained in a water intake system by (b) the number of larvae in the same water body that are subject to entrainment (i.e., entrainable).

Tenera Environmental (“Tenera”) collected entrainment samples in AHL as part of its entrainment and impingement study. Based on the entrainment data derived from sampling at the EPS intake, Tenera estimated the proportional entrainment mortality (Pm) of the most commonly entrained larval fish living in AHL by applying the ETM to the data. To estimate the CDP’s potential entrainment, Tenera computed the values based on a total flow rate of 304 MGD. Tenera concluded that the entrainment effect of the Project’s stand-alone operation would influence 36.8 acres of Agua Hedionda Lagoon (i.e., APF = 36.8 acres). The ETM results presented in the Minimization Plan incorporated the assumptions of 100% mortality of all marine organisms entering the intake and that species are evenly distributed throughout the entire depth and volume of the water body.

In March 2008, the Discharger provided a copy of its entrainment study to the Coastal Commission as required by Special Condition 8 of the CDP’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 California Coastal Commission (CCC) in April 2008. In consultation with Dr. Peter Raimondi, the CCC evaluated the data provided by Poseidon, and determined it appropriate to apply an 80% confidence interval to the APF results, resulting in 49 acres of mitigation. For impacts to nearshore ocean waters, the CCC imposed an additional 6.4 acres of wetland mitigation, on the basis that wetland habitat would be ten times more productive than nearshore habitat. The CCC concluded that 55.4 acres of wetland mitigation, to be implemented in two phases (an initial 37 acres, followed by an additional 18.4 acres), would adequately compensate for entrainment impacts for operation of the CDP at 304 MGD.

After reviewing Tenera and Dr. Raimondi’s work, the Coastal Commission concluded that by creating or restoring up to 55.4 acres of estuarine wetlands, the Discharger “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...” (Condition Compliance Findings for Special Condition 8, Marine Life Mitigation Plan, November 21, 2008, (approved December 10, 2008), p. 19 of 19.)

No new entrainment data has been generated since evaluation by the CCC. Therefore, it is appropriate for the Regional Board to rely on the CCC’s findings with regards to the adequacy of mitigation for entrainment impacts

Impingement

Like the entrainment projection, the CDP’s impingement projection was calculated using data collected pursuant to the EPS’s Regional Board-approved 316(b) Impingement Mortality and Entrainment Characterization Study plan. Tenera collected 52 impingement samples on a weekly basis from June 24, 2004 to June 15, 2005.

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As a result of extensive discussions following the February 11, 2009 meeting, the Discharger submitted a revised Minimization Plan on March 27, 2009, including five (5) approaches that could be used to estimate the potential for impingement when the CDP operates in stand-alone mode. (See Minimization Plan Attachment 5.)

While the Discharger believes that the amount of impingement from the CDP under standalone operations will be less 1.56 kg/day rather than 4.7 kg/day resulting from Proportional Approach 3-B set forth in Attachment 5, the Discharger has agreed to provide mitigation for impingement at an amount equal to 4.7 kg/day through a commitment to produce up to 4.7 kg/day (1715.5 kg/year) of "available" fish biomass in the mitigation wetlands, meeting a fish productivity standard of 1,715.5 kg/year. Fish productivity studies indicate that the mitigation wetlands will likely produce approximately 150 kg/acre/year of fish biomass. (Larry G. Allen, Seasonal Abundance, Composition, and Productivity of the Littoral Fish Assemblage in Upper Newport Bay, California, 80 Fishery Bull. 769 (1982), referenced in Attachment 7 to the Minimization Plan.)

The Discharger has explained that the mitigation proposed in the MLMP was designed to compensate for the three most commonly entrained lagoon fish groups, and the 5 most commonly entrained ocean species. Under this assumption, the mitigation wetlands are expected to produce fish biomass in excess of that which is earmarked for entrainment mitigation as described in Attachment 7 to the Minimization Plan. Based on the acreage designated for intertidal/sub-tidal (49) and nearshore/ocean (6.4), mitigation by the CCC, to the extent that the mitigation wetlands produce:

- a. The three (3) most commonly entrained lagoon species, 12% (i.e., 6.4/55.4 acres) of their biomass would be available to count toward productivity for impingement;
- b. The five (5) most commonly entrained ocean species, 88% (i.e., 49/55.4 acres) of their biomass is available to contribute toward productivity for impingement; and
- c. All other fish, 100% of their biomass is available to contribute toward productivity for impingement.

Although 12% of the biomass of the three (3) most commonly entrained lagoon species is not reserved for entrainment mitigation and, as a logical matter, may be used to offset potential impingement, the Discharger proposed in its Minimization Plan to exclude this biomass from the impingement mitigation accounting. For present purposes, therefore, the biomass of these three identified most commonly entrained lagoon species is never available as impingement mitigation credit.

By committing to creating or restoring up to 55.4 acres of estuarine wetlands, the Discharger provides a reasonable basis for concluding that the mitigation wetlands will produce more than 1715.5 kg/year of fish biomass which is available to fully mitigate for impingement associated with CDP's operations. The Discharger has provided expert

opinion that the mitigation site(s) provided for under the MLMP will result in a net productivity of fish biomass and provide mitigation for both entrainment and impingement. Specifically, the Discharger concludes that every acre of subtidal mudflats and/or intertidal habitat will produce approximately 150 kg/year of fish biomass. The MLMP's minimum standards provide that the mitigation site(s) must have potential for extensive intertidal and subtidal areas. Assuming 60% of the restored habitat consists of new subtidal and intertidal wetlands, the 37 acres to be constructed in Phase I are expected to yield approximately 3,330 wet weight (ww)/year of fish biomass, and the mitigation of 55.4 acres of such habitat are expected to yield approximately 4,986 kg ww/yr of fish biomass.

To demonstrate that the mitigation wetlands produce at least 1715.5 kg/year of fish biomass available to compensate for impingement losses, as described in the Minimization Plan, the Discharger must conduct productivity monitoring in accordance with a plan submitted by the Discharger for review to the CCC's Scientific Advisory Panel and review and approval by the Executive Officer pursuant to this Order. This monitoring will be for purposes of measuring fish productivity according to specific methodologies used by Allen, Seasonal Abundance, Composition, and Productivity of the Littoral Fish Assemblage in Upper Newport Bay, California, 80 Fishery Bull. 769 (1982), referenced in Attachment 7 to the Minimization Plan. The Discharger may propose additional or different methodologies, subject to review by the Scientific Advisory Panel and review and approval by the Executive Officer.

The Discharger will also be required to monitor impingement associated with CDP operations once they commence operations and may propose that the Executive Officer adjust the fish productivity standard as appropriate. This monitoring program provides for empirical verification of both the CDP's impingement and the effective offset of such impingement in the mitigation site(s).

Board Interpretation And Application Of Section 13142.5(b)

Under Section VI.C.2.e. of Order No. R9-2006-0065, the Regional Board reviews the Minimization Plan to assure that the Project will be in compliance with CWC Section 13142.5(b), which provides that: "For each new or expanded coastal power plant or other industrial installation using seawater for cooling, heating or industrial processing, the best available site, design, technology and mitigation measures feasible shall be used to minimize the intake and mortality of all forms of marine life."

Order No. R9-2006-0065 requires an approved Minimization Plan to ensure that the CDP complies with CWC Section 13142.5(b) when under conditions of co-location operation for CDP benefit. To approve the Minimization Plan, the Regional Board must determine that it provides for the use of the best available site, design, technology, and mitigation feasible to minimize intake and mortality of all forms of marine life under these operating conditions.

Responsiveness Summary and Responses to Comments
Order No. R9-2009-0038

Counsel for Surfrider and Coastkeeper have argued in numerous public comments and pending litigation that the Regional Board's interpretation of CWC Section 13142.5(b) must be harmonized with judicial interpretation of Section 316(b) of the federal Clean Water Act, specifically *Riverkeeper, Inc. v. U.S. E.P.A.*, 475 F.3d 83 (2007), *rev'd, remanded sub nom. Entergy Corp. v. Riverkeeper, Inc.*, No. 07-588, 2009 U.S. LEXIS 2498 (U.S. Apr. 1, 2009). To clarify, as found in R9-2006-0065, the Regional Board finds that the Project is not subject to Clean Water Act Section 316(b), and further finds that it is unnecessary to determine whether CWC Section 13142.5(b) should be interpreted in accordance with Clean Water Act Section 316(b). The Regional Board has analyzed the Minimization Plan to ensure that it provides for the use of the best available site, design, technology, and mitigation feasible to minimize intake and mortality of all forms of marine life, as is required to satisfy CWC Section 13142.5(b).

Counsel for Surfrider and Coastkeeper have also argued in numerous public comments that CWC Section 13142.5(b) must be interpreted to require avoidance of intake and mortality first, and then mitigation of any residual intake and mortality that cannot be avoided. In accordance with this theory, they argue that CWC Section 13142.5(b) creates a hierarchy for minimization, pursuant to which site, design, and technology approaches must be selected first, with resort to mitigation only if those three approaches do not minimize intake and mortality. In this instance, this theory is irrelevant as those mitigation measures set forth under the Minimization Plan and, correspondingly the MLMP, are being made in addition to, and not in place of, measures taken under the site, design and technology elements of CWC Section 13142.5(b) to minimize intake and mortality of marine organisms by impingement and entrainment.

The theory put forth by counsel for Surfrider and Coastkeeper that CWC Section 13142.5(b) creates a hierarchy of actions also is incorrect. CWC Section 13142.5(b) does not express any preference for site, design and technology, over mitigation. It does not characterize the former three approaches as avoidance approaches, to be distinguished from mitigation. It does not reserve mitigation only for those situations where intake and mortality cannot be avoided. Rather, CWC Section 13142.5(b) provides discretion to the Regional Board to strike an appropriate balance among these various factors, as may be achieved through a variety of approaches relying to greater and lesser degrees on the four approaches authorized by the California Legislature to minimize intake and mortality.

While unnecessary, the Regional Board has determined that its interpretation of CWC Section 13142.5(b) corresponds with the interpretation set forth by the California Court of Appeal, Sixth District in *Voices of the Wetlands v. California State Water Resources Control Board*, 157 Cal. App. 4th 1268, 1351 (2007), *modified, reh'g granted*, No. H028021, 2008 Cal. App. LEXIS 28 (Cal. Ct. App. Jan. 10, 2008), *review granted, depublished by*, 74 Cal. Rptr. 3d 453 (2008), *reserved by*, No. S160211, 2009 Cal. LEXIS 450 (Cal. Jan. 14, 2009), which states: "California law makes mitigation a legitimate factor in certain circumstances. For example, a provision of state water law contained in the Porter-Cologne Act, which governs 'each new or expanded coastal

power plant,' expressly recognizes the availability of 'mitigation measures' as one way 'to minimize the intake and mortality of all forms of marine life.' (Wat. Code, § 13142.5, subd. (b).)."

GENERAL

Implementation of the Minimization Plan, including its provisions related to impingement and entrainment, is not required by the federal Clean Water Act and does not represent an effluent standard or limitation within the meaning of Section 1365 of the federal Clean Water Act, 33 U.S.C.S. § 1365. By requiring implementation of the Minimization Plan, the Regional Board is requiring compliance with California Water Code Section 13142.5(b) and is mandating through this permit amendment a greater scope of coverage than that required by the federal Clean Water Act and its implementing regulations. These requirements are imposed solely as a function of state law for which there is no federal corollary, do not relate to state water quality standards, and do not relate to the planning, monitoring, and reporting requirements of the receiving waters limitations and/or effluent limitations of the CDP's NPDES permit, or any other element of the Clean Water Act's enforcement procedures.

**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

COMMENT NUMBER	COMMENTS and/or CONCERNS	REGIONAL BOARD RESPONSE
3/14/2008 letter from San Diego Desal Partners		
1.	In anticipation that the Encina Power Station (EPS) might not always satisfy the CDP's source water demands, the Regional Board required Poseidon to submit a Flow, Entrainment and Impingement Minimization Plan (Plan) to 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 CDP intake requirements exceed the volume of water being discharged by the EPS. The Regional Board review and approval of the Plan will address any additional review of the proposed desalination facility required pursuant to Water Code. The Plan has been available for public comment for the past 12 months and extensively revised on two occasions in response to Regional Board and public comments. As elected and appointed public officials, we urge your approval of the revised Flow, Entrainment & Impingement Minimization Plan before you.	Comments noted.
3/19/2008 letter from San Diego Coastkeeper and Surfrider Foundation		
2.	We request a 30-day public comment period on the revised "Flow, Entrainment and Impingement Minimization Plan" (Minimization Plan) that was submitted by Poseidon Resources to the Regional Board on March 6, 2008.	This order would approve the March 9, 2009 Minimization Plan as revised March 27 (hereafter March 27, 2009 Minimization Plan) and would supersede Resolution No. R9-2008-0039 adopted on April 9, 2008. The Regional Board has met all applicable public notice requirements for this Order.
3.	In approving Tentative Order No. R9-2006-0065, granting NPDES Permit No. Ca0109223 (NPDES permit), the Regional Board considered public comments received during	This order would approve the March 9, 2009 Minimization Plan as revised March 27 (hereafter March 27, 2009 Minimization Plan) and would

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	<p>an extensive comment period. The original NPDES permit comment period started on May 8, 2006 and closed on June 14, 2006. After revisions to the NPDES permit were made, a second comment period was conducted until August 9, 2006. Thus, the original approval of the NPDES permit provided for almost 60 days of public comment. In contrast, today's post of the agenda on the Board's website provides only seven days for written comments (which will be extensive in keeping with the voluminous documents submitted by Poseidon) and a maximum comment period of 21 days before the hearing itself.</p>	<p>supersede Resolution No. R9-2008-0039 adopted on April 9, 2008. The Regional Board has met all applicable public notice requirements for this Order.</p>
<p>4.</p>	<p>As a consolidated permit issued pursuant to section 402 of the Federal Clean Water Act (CWA) and Chapter 5.5, Division 7 of the California Water Code (CWC), Poseidon's permit is subject to section 10206 of the California Code of Regulations. Section 10206 states that a "summary of all decisions made pursuant to the consolidated permit for the project shall be made available for public review and comment upon the filing of the consolidated permit application form or the permit applications." (emphasis added). Because the Minimization Plan is subject to approval and modification by the Regional Board, review of the Minimization Plan qualifies as a "decision made pursuant" to the NPDES permit.</p>	<p>A consolidated permit is defined in Title 27 Section 10100 (c) as "a permit incorporating the environmental permits granted by environmental agencies for a project and issued in a single permit document by the consolidated permit agency."</p> <p>Order No. R9-2006-0065 does not fall within the definition of a consolidated permit as defined in Title 27 Section 10100.</p>
<p>5.</p>	<p>To allow time for coordination of a stakeholder meeting, adequate review by our experts, and full public participation, we request a formal public comment period. This action is necessary given that this project presents a new interpretation and implementation of the language in CA Water Code § 13142.5(b). Granting a formal comment period, with responses from staff, will assure that Board</p>	<p>This comment is no longer applicable.</p>

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COMMENT NUMBER	COMMENTS and/or CONCERNS	REGIONAL BOARD RESPONSE
	<p>members have all information before considering this important issue. Providing a sufficient amount of time may also avoid unnecessary complications in the permitting process in the future. We believe this project deserves extraordinary scrutiny in that the outcome has the potential to set important precedent for numerous similar project proposals statewide.</p>	
3/20/2008 letter from Coastal Commission		
<p>6.</p>	<p>For the reasons provided below, we recommend the Board not take action on the Revised Plan at this time.</p> <p>In November 2007, the Coastal Commission approved a coastal development permit for Poseidon's desalination facility. Among the Commission's conditions of approval was a requirement that Poseidon submit its complete entrainment study and an acceptable Marine Life Mitigation Plan for further Commission review and approval before it can be issued a coastal development permit. For several reasons, we have determined that Poseidon's current Revised Plan is not yet adequate for Commission consideration - for instance, until we complete our review of Poseidon's entrainment study, we cannot determine whether Poseidon's proposed mitigation is appropriate or adequate to address the project's entrainment impacts; additionally, the mitigation options described in the Revised Plan do not include enough certainty or detail to show how they will actually mitigate for any anticipated impacts.</p> <p>We have taken steps to address the Revised Plan's current shortcomings. Regarding the entrainment study, Poseidon submitted additional necessary information about the study last week, and we have hired an independent science team to review that information for adequacy. We expect that</p>	<p>Comments noted.</p> <p>The Board is considering approval of the March 9, 2009 Minimization Plan, as revised March 27, 2009. The Board's action will supersede the conditional approval of April 9, 2008 (Resolution No. R9-2008-0039). Since the April 9, 2008 Board Meeting, the Discharger participated in an interagency meeting to determine what mitigation options might be available and feasible. Thirteen state and federal agencies were invited to attend, and staff representatives from the Regional Board, Coastal Commission, California State Lands Commission, California Department of Fish and Game, California Department of Transportation, City of Carlsbad, City of Vista, and U.S. Fish and Wildlife Service attended. The Discharger also coordinated with other agencies during this time.</p> <p>Since April 2008, the MLMP was revised numerous times in response to various agencies' and public comments. The Coastal Commission approved the MLMP, with final language, in November 2008. While recent Coastal Commission comments indicate that the adequacy of the MLMP for impingement may be revisited, such potential action does not require the Board to postpone action. Order No. R9-2006-0065</p>

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COMMENT NUMBER	COMMENTS and/or CONCERNS	REGIONAL BOARD RESPONSE
	<p>review to be completed by mid-April. Additionally, we have been working with involved agencies, including Regional Board staff, to help Poseidon develop the mitigation measures suitable for Commission approval.</p> <p>With these coordination efforts underway, we believe it would be in the best interest of all parties for the Regional Board to refrain from taking action on Poseidon's current Revised Plan until the above-described interagency coordination initiatives have occurred. Although the Board is reviewing Poseidon's project under standards different from those of the Coastal Commission, we believe that deferral by the Board of its decision will facilitate coordination efforts between our two agencies and will result in a mitigation plan that fulfills the standards of the Regional Board, the State Lands Commission, and the Coastal Commission, all of which have common but distinct interests in protecting water quality and marine life. Further, if the Board were to approve the Revised Plan in its current form, Poseidon would still need to incorporate significant additional information and changes into its Plan to provide the certainty needed for the required Commission review and approval.</p> <p>Finally, we are concerned that action by the Board at this time on the Revised Plan would create a real or perceived conflict between the Board's action and the requirements imposed by the Commission in its November 2007 approval of Poseidon's project. This is likely to slow or confuse our ongoing review and coordination process, resulting in delay for Poseidon's project.</p>	<p>specifically authorizes the Regional Board to require revisions to the Minimization Plan and the Board may require revisions, as necessary, to address any future Coastal Commission action.</p>
3/26/2008 letter from Industrial Environmental Association		
7.	In October 2006, your Board issued a discharge permit for this project but further required a Flow, Entrainment and	Comments noted. See response to Comment 6.

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	<p>Impingement Minimization Plan be submitted to provide additional regulatory safeguards. That plan was submitted and has been revised twice at the request of your staff.</p> <p>The San Diego Regional Board will be voting on whether or not to accept and approve that plan on April 9. We believe that Poseidon has clearly demonstrated that they are using all feasible methods to reduce their entrainment and impingement impacts on the lagoon.</p> <p>Until your board approves this mitigation plan, the project cannot return to the State Lands Commission and the California Coastal Commission for the final project approvals needed before construction can begin.</p>	
3/26/2008 letter from City of Carlsbad, Office of the City Council		
8.	<p>It's important to know that every regulatory agency that has reviewed the project, including the Coastal Commission itself, has determined the project to be necessary and environmentally sound. An unbiased, scientific review of the project has concluded that the Carlsbad desalination facility is a critical water supply project and an environmental preservation and enhancement project. It's a win-win.</p> <p>The Flow, Entrainment and Impingement Minimization Plan contains full and comprehensive response to the Regional Board's requirement that Poseidon assess the feasibility of the best available site, design, technology and mitigation for protection of the Pacific Ocean and Agua Hedionda Lagoon marine ecosystem. Your board's decision to accept and finalize this plan should be dependent solely on the merit of the plan - not by another agency's attempt to overstep its authority and undermine yours. Furthermore the plan complies with California Water Code Section 13142.5(b) and</p>	Comments noted.

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	<p>by taking action the Regional Board is in no way violating the spirit or letter of the Porter-Cologne Act, as insinuated by Coastal Commission staff.</p>	
3/26/2008 letter from Hubbs- Sea World Research Institute		
<p>9.</p>	<p>Over the years, HSWRI has provided written and oral testimony in support of the Carlsbad Desalination Project after reviewing the project very thoroughly to ensure that it would not have a negative impact on our operations. We have also studied their Flow, Entrainment and Impingement Minimization Plan which your board requested after approving a discharge permit for the project in 2006.</p> <p>We find that the desalination project has been designed with more than adequate coastal protections and mitigation measures to ensure the health of the marine ecosystem.</p> <p>It's also important to know approval of the project will result in additional lagoon acreage to be dedicated to the City of Carlsbad for the expansion of our white seabass enhancement program or related marine research. This dedication is in addition to the project's proposed mitigation plan and constitutes added environmental value.</p> <p>We have also reviewed the recently released draft Flow, Entrainment and Impingement Minimization Plan, which we believe to be a clear demonstration of the project's regard for the marine environment, especially the nearby lagoon which supports some endangered species.</p> <p>I urge you to approve this plan and bring our region one step closer to a reliable, affordable supply of water</p>	<p>Comments noted.</p> <p>To clarify, no permitting action by this Board recognizes the approval of this project will result in additional lagoon acreage to be dedicated to the City of Carlsbad for the expansion of Hubbs-Sea World Research Institute white seabass enhancement program or related marine research. The mitigation site(s) have not yet been selected.</p>

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<i>COMMENT NUMBER</i>	<i>COMMENTS and/or CONCERNS</i>	<i>REGIONAL BOARD RESPONSE</i>
3/26/2008 letter from San Diego North Economic Development Council		
10.	<p>Seawater desalination is a critical component of the region's water supply strategy.</p> <p>Once approved, the Carlsbad Desalination Project will provide as much as 10% of our region's water needs at no additional costs to government or taxpayers. It is a win-win for the entire county which will benefit from an abundant, affordable and environmentally-benign water supply.</p> <p>Poseidon Resources' Flow, Entrainment and Impingement Minimization Plan before you on April 9th meets the requirements of the discharge permit the Regional Board issued in 2006. The Regional Board has the full discretion to approve the Plan and advance the project.</p> <p>On behalf of our members and all of their employees, we respectfully ask the Board to finalize approval of the discharge permit. It's the right decision for the region.</p>	Comments noted.
3/26/2008 letter from Andrew Davis, Carlsbad Aquafarm		
11.	<p>My business cannot operate if the Agua Hedionda Lagoon is not healthy. At some point in the future, the Encina Power Plant will be decommissioned and their stewardship of the lagoon will end. That is why it is so important for the Carlsbad Desalination Project to be approved. The owners of the project, Poseidon Resources, have agreed to maintain and dredge the lagoon in perpetuity, guaranteeing it stays healthy. Poseidon's <i>Flow, Entrainment and Impingement Minimization Plan</i> clearly lays out how they will minimize impacts in the lagoon and identifies a feasible mitigation plan to protect marine life.</p> <p>While I appreciate the input of outside organizations like the</p>	<p>Comments noted.</p> <p>To clarify, adoption of this Order neither condones (as a mitigation requirement) or precludes (as a voluntary measure) the Discharger's efforts to maintain the lagoon.</p>

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	<p>Surfrider Foundation, I hope that you will take into consideration the opinion of someone who relies entirely on the health of Agua Hedionda Lagoon for the success of my business. I am satisfied that the applicant has taken all necessary steps to ensure a healthy lagoon and marine environment. Please approve the Carlsbad Desalination Project minimization plan.</p>	
3/27/2008 letter from Sweetwater Authority		
12.	<p>Poseidon Resources' desalination project has gained enthusiastic support from water agencies, cities, businesses, residents, and elected officials, including our entire state and federal delegation. While we appreciate the due diligence that regulatory agencies have taken to ensure this is the most environmentally-benign project possible, we believe it has been thoroughly vetted and utilizes every possible avenue for reducing impacts to the marine environment.</p> <p>The Sweetwater Authority Board of Directors asks you to make the right decision and approve the Flow, Entrainment and Impingement Minimization Plan for the Carlsbad Desalination Project.</p>	Comments noted.
3/27/2008 letter from Christine Kehoe, Senate, 39th District		
13.	<p>This minimization plan has been prepared and available for your review for the past year. The discharge permit and related minimization plan offer far-reaching design, technology and mitigation measures that will ensure that the plant is operated in a manner consistent with state law.</p> <p>As Chair of the Senate Committee on Energy, Utilities and Communications and as a longtime member of the Senate Committee on Natural Resources and Water, I know how important it is to have a reliable local water supply to serve</p>	Comments noted.

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COMMENT NUMBER	COMMENTS and/or CONCERNS	REGIONAL BOARD RESPONSE
	<p>the San Diego region's needs. This important project has enjoyed the unanimous support of the San Diego's state legislative delegation as expressed in a letter to the California Coastal Commission when they considered the issuance of the project's coastal development permit this past summer.</p> <p>I respectfully urge the RWQCB to now approve the discharge permit to help the San Diego region achieve a new, local, drought-proof water supply.</p>	
3/27/2008 letter from San Diego Regional Economic Development Corporation		
14.	<p>EDC would like to offer its full support of the Carlsbad desalination plant. We believe that this project will provide San Diego with the diverse, reliable, environmentally sound water supply that it desperately needs.</p> <p>Your Board has already issued a discharge permit for this project. Poseidon Resources is complying with the permit's conditions by submittal of its Flow, Entrainment and Impingement Minimization Plan. The plan identifies feasible mitigation opportunities and provides regulatory assurances that the implementation of the mitigation plan will continue to be subject to a state-agency's coordinated process to ensure the best available mitigation feasible.</p>	Comments noted.
3/27/2008 letter from San Dieguito River Valley Regional Open Space Park		
15.	<p>Our interest in the Carlsbad Desalination Project is linked to Poseidon Resources proposed coastal habitat restoration project.</p> <p>In the summer of 2007, the River Park responded to Poseidon's request for expressions of interest for the development and implementation of a coastal habitat restoration project. As you are aware, a major restoration</p>	<p>Comments noted.</p> <p>To clarify, the San Dieguito Lagoon is just one of several alternative sites where the Discharger may choose to conduct this mitigation.</p>

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	<p>project is underway in the San Dieguito River Valley about 12 miles south of Poseidon's proposed desalination facility. This Project is being funded by Southern California Edison as mitigation for the entrainment and impingement impacts from its San Onofre Power Plant.</p> <p>The restoration proposal we provided Poseidon will expand the number of acres of functional wetlands and associated habitat in the San Dieguito Lagoon area, by supplementing the 115-acre Wetlands Restoration Project, which is currently underway.</p> <p>The proposed restoration projects will create approximately 37 acres of marine wetlands and additional acres of associated native grassland habitat from what is now entirely disturbed land. The project includes maintenance and monitoring to ensure the successful re-establishment of planted species. A second component of this project is funding for enhanced water quality sampling, testing and monitoring of the proposed water quality treatment ponds.</p> <p>We are currently doing a feasibility study to ensure that Poseidon's proposed coastal habitat restoration project will complement the ongoing restoration project while providing additional restored habitat in the San Dieguito Lagoon that closely matches the habitat in Agua Hedionda Lagoon.</p>	
3/27/2008 letter from California Coastal Coalition		
16.	<p>CalCoast has spoken out on behalf of the Carlsbad Desalination Project numerous times because we believe that this project has been designed and will be operated with careful consideration of the coastal environment and habitat.</p> <p>We have given considerable consideration to Poseidon's</p>	Comments noted.

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	<p>proposal and find that the project includes the necessary design, technology and mitigation measures for one to conclude it represents an environmentally responsible use of coastal property and public trust resources.</p> <p>Over the last several years we have provided written and/or oral testimony before the Regional Board, State Lands Commission and California Coastal Commission. After considerable regulatory scrutiny, it is clearly time to move this project forward. The desalination facility would offer many benefits to the region and the California Coastal Coalition is pleased to offer our full support of the desalination project.</p>	
3/27/2008 letter from San Diego County Building & Construction Trades Council, AFL-CIO		
17.	<p>The Carlsbad desalination project will have significant economic benefit for the region, including an estimated \$170 million in spending during construction, 2,100 jobs created during construction, and \$37 million in annual spending throughout the region once the desalination plant is operational.</p> <p>The building trades industry has a strong record of promoting and protecting the environment. We believe that this particular project strikes the right balance between strengthening the economy and preserving the coastal marine environment, especially the Agua Hedionda Lagoon.</p> <p>For the region, the desalination facility will create jobs, generate tax revenue, improve water quality and enhance water reliability with a new drought-proof supply. We urge your approval of the Carlsbad Desalination Project, which will bring this region one step closer to a safe, reliable and cost-effective water supply.</p>	Comments noted.

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3/27/2008 letter from Robert Simmons Counselor-at-Law		
18.	<p>In my opinion, the project's entrainment and impingement minimization plan is a good one. As you know, the plan details procedures to minimize impacts on marine life during a temporary or permanent reduction or shutdown of the Encina power plant generation, i.e., when the project's intake requirements exceed the power station's discharges. The current productive state of the adjacent lagoon is primarily due to the good stewardship of the power station, which daily circulates seawater throughout the lagoon and dredges its entrance, annually. These actions have transformed the lagoon from the stagnant marsh of the past to the healthy ecosystem we see today.</p> <p>Opponents of this project have falsely argued to you (and unsuccessfully, to courts and other agencies) that the Federal Clean Water Act (CWA Section 316) applies to this desalination plant. This is legally incorrect! In truth, the plant is regulated under the California Water Code Section 13142.5. This provision requires industrial facilities using seawater for processing to use the best available site, design, technology, and feasible mitigation-to minimize impacts to marine life. In my opinion, the plan before you for decision on April 9 clearly meets all the requirements of this law and I urge you to approve it.</p>	Comments noted.The Regional Board concurs that 316 (b) requirements do not apply.
3/27/2008 letter from Rainbow Municipal Water District		
19.	<p>I am writing today on behalf of Poseidon Resources' Carlsbad Desalination Project and asking you to approve their Flow, Entrainment and Impingement Minimization Plan. Please accept this letter as a declaration of Rainbow Municipal Water District's support and endorsement for this important project.</p>	Comments noted.

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	<p>Now it is up to your Board to ensure that our efforts to protect our agricultural customers are not in vain. We understand that you will be holding a hearing on April 9th to approve the project's Flow, Entrainment and Impingement Minimization Plan. We believe this plan is in full compliance with applicable state water regulations, specifically Water Code Section 13142.5(b).</p> <p>Poseidon Resources has repeatedly accommodated requests for information and demands for additional stringent mitigation measures. On behalf of Rainbow Municipal Water District, I urge the State Water Resources Control Board to approve this project and bring us one step closer to solving our region's long-term water reliability needs.</p>	
3/28/2008 letter from Vallecitos Water District		
20.	<p>We have thoroughly reviewed the project's Flow, Entrainment and Impingement Minimization Plan and have determined that this plan meets the Regional Board's requirement that Poseidon assess the feasibility of the site, design, technology, and mitigation measures to minimize impacts to marine life.</p> <p>We believe that this project presents the best most environmentally expedient opportunity for siting a desalination facility in San Diego. The research that has been done verifies that the environmental impacts will be minor at this site, with or without the Encina Power Plant. Poseidon Resources has made every effort to mitigate even minor impacts and has committed to restoring 37 acres of wetland habitat, dedicating 15 acres for public access, recreation and marine research, and providing maintenance to the lagoon itself after the power plant is taken off line. These are major commitments that confirm the ecological benefits of the</p>	Comment noted. Poseidon will be required to minimize and mitigate the environmental impacts in compliance with Water Code Section 13142.5(b).

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	project.	
3/28/2008 letter from City of Oceanside		
21.	<p>Poseidon Resources submitted the Flow, Entrainment and Impingement Minimization Plan in February 2007 to RWQCB and it has been available for public review since that time. Poseidon has revised the plan several times in response to comments from the Board, staff and public. The plan fulfills the Regional Board's requirement that Poseidon assess the feasibility of site, design, technology and mitigation measures to minimize impact to the marine environment. We believe that Poseidon's proposed mitigation approach and regulatory assurances are more than adequate for this project and should be approved.</p> <p>In closing, the Carlsbad Desalination Project is a positive step in the right direction for our region's future water supply. As demonstrated in their Flow, Entrainment and Impingement Minimization Plan, it will be environmentally- responsible and proactive in minimizing any potential impacts. The City of Oceanside respectfully requests that you vote in favor of this badly-needed project.</p>	Comments noted.
3/28/2008 San Diego Regional Chamber of Commerce		
22.	<p>In the Chamber's opinion, Poseidon Resources has designed an environmentally-superior project that will have minimal impact to marine life found in the lagoon and surrounding coastal areas. In addition to their commitment to ongoing lagoon maintenance, Poseidon has also committed to a 37-acre wetlands restoration program and a comprehensive Climate Action Plan that will eliminate the plant's carbon footprint. We appreciate their extraordinary efforts to make this project both environmentally and fiscally responsible, while reducing our county's dependence on imported water.</p>	Comment Noted.

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	<p>The existence of the project's Flow, Entrainment, and Impingement Minimization Plan - a condition the Regional Board placed on the discharge permit when it was approved in 2006 - is one example of the appropriately stringent regulations that have been attached to the project. By preparing the minimization plan, Poseidon Resources has met its permit conditions and provided a roadmap that guarantees the project is built using the best available site, design, technology, and mitigation feasible to minimize impacts to marine life.</p>	
3/28/2008 letter from Agua Hedionda Lagoon Foundation		
23.	<p>The Regional Board has put stringent permit conditions in place that allows the desalination plant to utilize the power station's seawater intake and outfall infrastructure. In compliance with Water Code Section 13142.5(b), Poseidon Resources submitted a Flow, Entrainment and Impingement Minimization Plan to your agency. My organization has studied this plan and we are completely satisfied that there are sufficient marine environment protections in place.</p> <p>We also believe that operation of the Carlsbad Desalination Plant will be critical to the Agua Hedionda Lagoon. Poseidon's commitment to dredge the lagoon once the power plant ceases to operate will ensure that the lagoon's ecosystem will remain balanced and healthy. Additionally, Poseidon has pledged annual funding for the Foundation's Academy for Environmental Stewardship. This elementary school program reaches children at a young age so they can understand the importance of preserving our watershed and wetlands. We note that Poseidon's commitment to serve as a steward for the Agua Hedionda Lagoon and the surrounding watershed will guarantee for many years to come that the</p>	Comment Noted.

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	<p>citizens of Carlsbad will be able to enjoy the benefits of this clean lagoon and its surrounding beaches. This commitment will provide real environmental benefit and rises above and beyond the wetlands mitigation proposed in the Minimization Plan.</p>	
3/28/2008 letter from Shapery Enterprises		
24.	<p>San Diego needs to develop a cost-effective, drought-proof supply of water to augment the nearly 90% supplies we currently import. My firm believes that desalination makes sense from an economic and environmental standpoint. Poseidon Resources, in particular, has designed a top-notch project that will meet the water needs of 10% of our population at no additional cost to taxpayers. They have also put together a sensible mitigation plan to ensure that the lagoon and beaches are protected and will not be harmed by the plant's discharge.</p> <p>I think this project is a win-win for San Diego's environment and taxpayers. Shapery Enterprises respectfully requests that you approve the Carlsbad Desalination Plant on April 9th.</p>	Comments noted.
3/31/2008 letter from Santa Fe Irrigation District		
25.	<p>I'm writing today on behalf of Poseidon Resources' Carlsbad Desalination Project and asking you to approve their Flow, Entrainment, and Impingement Minimization Plan at the public hearing on April 9,2008.</p> <p>We are confident that the Carlsbad Desalination Project meets or exceeds all environmental regulations and will contribute to the long-term health of the lagoon and marine habitat through its careful stewardship and a broad array of design, technology and mitigation measures.</p>	Comments noted.

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	<p>We believe that this agreement provides our region with a reliable, affordable and environmentally benign water source to augment our imported supplies. On behalf of my Board of Directors and our thousands of customers, we urge the Water Quality Control Board approve the Flow, Entrainment, and Impingement Minimization Plan.</p>	
3/31/2008 letter from Farm Bureau San Diego County		
26.	<p>On behalf of the San Diego County Farm Bureau and the county's farmers, I am writing you in support of the Carlsbad Desalination Project. Our organization testified before the Regional Board in 2006 when the Board unanimously approved the project's discharge permit. The permit required Poseidon to provide the Regional Board with a Flow, Entrainment and Impingement Minimization Plan to help reduce marine impacts. Poseidon has prepare this plan met its obligations under the permit.</p> <p>San Diego County is mired in a historic drought, suffering through the driest consecutive years in our region's history. The Carlsbad Desalination Project is not a panacea, but it offers fanners and urban water users alike a new, affordable water supply. After nearly ten years in the works, it's time the Carlsbad facility was approved. San Diego County's agricultural industry - and our fanning heritage - is counting on it.</p>	Comments noted.
3/31/2008 letter from Carlsbad Chamber of Commerce		
27.	<p>I am writing on behalf of the Carlsbad Chamber of Commerce in support of Poseidon Resource's Carlsbad Desalination Project. The Chamber recently awarded Poseidon Resources with their first-ever Environmental Spirit Award because of their project's demonstrated commitment to the environment,</p>	Comments noted.

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	<p>especially the Agua Hedionda Lagoon.</p> <p>This plan has been under review for over a year and has been updated on several occasions in accordance with your staff's requests. The Chamber believes that this plan puts into a place a multitude of protections for the lagoon during the plant's operation; it also ensures that the lagoon will continue to be a clean, healthy marine environment in the long-term. As part of their due diligence, Poseidon will perform regular monitoring and conduct studies designed to reduce the entrainment and impingement of marine organisms below acceptable levels. Additionally, the desalination facility will be subject to further environment review and analysis by State Lands Commission ten years after the lease is issued, guaranteeing sufficient regulatory oversight.</p>	
3/31/2008 letter from Sierra Club, San Diego Chapter		
28.	<p>First and foremost, the Report fails to provide a site specific conceptual food web model. This model serves to show the relationship among the various species and their interactions in response to the impingement and entrainment impacts. It is an essential tool for the ecosystems based management of the CDP project.</p> <p>Mortality and injury to marine life caused during transport through intake and discharge tunnels not addressed. The Report does not but should provide information on the number of fish, larvae and all other marine life that are killed, injured or dazed in the intake and discharge channels the CDP by abrasion, hard contact with the tunnel, disoriented by turbulent flow, and other mechanical means.</p>	<p>This project is reviewed under CWC Section 13142.5(b), which requires that the project use the best available site, design, technology, and mitigation measures feasible to minimize the intake and mortality of all forms of marine life. The statute does not mandate the use of a particular model, such as a site-specific conceptual food web model as the comment suggests.</p> <p>Consistent with CWC Section 13142.5(b), the purpose of the Minimization Plan is to evaluate intake and mortality, i.e., entrainment and impingement, of all forms of marine life, and to minimize these effects. To account for entrainment, the Minimization Plan applies the Empirical Transport Model ("ETM"). This ETM model is widely accepted in California by the scientific</p>

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		<p>and regulatory community and has been used in other recent studies conducted in California, such as those regarding the AES Huntington Beach Generating Station and the Duke Energy South Bay Power Plant. Here, in approving the MLMP, the Coastal Commission relied upon and adopted the ETM model, which was also used by its expert Dr. Peter Raimondi. The Regional Board similarly relies on the ETM model.</p> <p>To account for impingement, the Minimization Plan applies biomass productivity estimates of comparable estuarine habitats as calculated by Larry Glen Allen and applied in this case by Christopher Nordby. See Larry Glen Allen, Seasonal Abundance, Composition and Productivity of the Littoral Fish Assemblage in Upper Newport Bay, California, 80 Fishery Bulletin 4, 769-90 (1982); Christopher Nordby, "Mitigation Computation Based on Impingement Assessment", Minimization Plan Attachment 7.</p> <p>Instead of using food as the basis to characterize impingement and entrainment, the ETM and biomass productivity approaches reasonably rely on the benefits associated with increases in estuarine habitat.</p> <p>The comment assumes that an "ecosystems-based approach" is required and preferable. An ecosystems-based approach is not applicable to this case, however, because the affected ecosystem, Agua Hedionda Lagoon, is not wholly removed (as is generally done when evaluating compensatory mitigation for impacts of fill in a Clean Water Act ("CWA") Section 401 certification). Rather, in this case, only specific components of the ecosystem – rather than the entire ecosystem – are being altered, due to impingement and entrainment. Therefore, the</p>

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		<p>mitigation provided for in the Minimization Plan, which will fully offset impingement and entrainment, is appropriate.</p> <p>It should be noted, however, that the Minimization Plan does give consideration to the ecosystems affected. For example, Sections 3.1 and 3.2 of the MLMP, incorporated in Chapter 6, provide minimum standards and objectives for the mitigation site(s). These standards and objectives, among other things, provide that a site shall include habitat similar to the affected habitats in Agua Hedionda Lagoon and should provide maximum overall ecosystem benefits, e.g., maximum upland buffer and transition areas, enhancement of downstream fish values, regionally scarce habitat, potential for local ecosystem diversity, substantial fish habitat, rare or endangered species habitat, and provision for reproductively isolated populations of native California species.</p> <p>The Minimization Plan does not need to address mortality and injury caused by transport because both the impingement and entrainment estimates assume 100% mortality of all organisms that pass through the intake structure.</p>
29.	<p>Elimination of Heat Treatment Related Mortality. The Report (Chapter 3.7) proposes to clean the intake and discharge system by periodically circulating plastic scrubbing balls. The Report does not indicate where the debris from the cleaning will be disposed. The Encina Power Station disposed the heat treatment debris into the receiving waters via the discharge tunnel. We objected to this practice as it is in violation of the NPDES CA 0001350, No. R9- 2006-043,</p>	<p>The Regional Board is not considering the adequacy of the heat treatment replacement at this time since this is a feature that could be incorporated under stand-alone conditions. Once EPS permanently shuts down and the CDP is operated on a stand-alone basis, the Regional Board will undertake additional evaluation under CWC Section 13142.5.</p>

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	<p>Paragraph III, Discharge Prohibitions. Furthermore, it is highly likely that plastic, an ocean pollutant, will be worn off from the plastic scrubbing balls and be included in the debris. We continue to object to the practice of disposing the clean-up debris into the receiving waters.</p>	
30.	<p>Micro-screens effectiveness to minimize impingement and entrainment losses is problematical. The Report does not provide operational information such as pilot plant tests to verify that this technology is proven and reliable. The Report makes no mention that biofouling and biofilm buildup will occur in the micro-screens to require periodic chemical (biocides) treatment. Furthermore, as questioned previously, the Report does not address the expected survivability of the entrained marine organisms after being flushed out from the micro-screen filter and transported out the lengthy (approx 1500 ft) discharge tunnel. The Report does not but should provide a monitoring plan to quantify taxa, their abundance, and the survivability of the marine organisms at the ocean outfall.</p>	<p>The comment addresses potential concerns related to the use of micro-screens to minimize impingement and entrainment. This comment has been rendered moot by subsequent actions as follows:</p> <p>In the March 6, 2008 version of the Minimization Plan, the Discharger proposed the installation of micro-screens and the use of a low-pressure membrane pretreatment system to increase the potential to capture marine organisms and to return them successfully to the ocean. Based upon the use of these proposed technology measures, the Discharger initially considered the mortality rate of the entrained marine organisms to be less than 100%.</p> <p>Subsequent to that proposal, the Coastal Commission and the Scientific Advisory Panel (“SAP”) determined that these technology measures would not be effective in returning viable organisms to the ocean and would not result in any minimization or reduction of entrainment. The Coastal Commission found that the CDP’s entrained organisms would be subject to a number of stressors – including high pressures, significant changes in salinity, possible high temperature differences if the power plant is operating, etc. – and that the organisms would then be discharged to a different environment than is found in Agua Hedionda Lagoon. See Coastal Commission, Recommended Revised Condition Compliance</p>

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		<p>Findings, MLMP for Coastal Development Permit E-06-013, Poseidon Resources Carlsbad Desalination Project, November 21, 2008, at 13, available at http://documents.coastal.ca.gov/reports/2008/12/W16a-12-2008.pdf.</p> <p>The Coastal Commission concluded that any one or a combination of these stressors could result in mortality of the marine organisms prior to the return to the ocean. <i>Id.</i> Further, it is uncertain whether the returned marine organisms would survive past the initial release into the ocean or thereafter contribute reproductively to the population. Ferry-Graham, Dorin, and Lin, <i>Understanding Entrainment at Coastal Power Plants: Informing a Program to Study Impacts and Their Reduction</i>, CEC-500-2007-120 at 36 (March 2008).</p> <p>Because of this uncertainty, the Minimization Plan conservatively assumes 100% mortality of entrained species, consistent with guidance from the U.S. Environmental Protection Agency (“EPA”) and reflecting the practice of California’s State Water Resources Control Board (“State Board”) and the Regional Water Quality Control Boards, the California Energy Commission, and the Coastal Commission in conducting and evaluating these studies. Coastal Commission. <i>Recommended Revised Condition Compliance Findings, MLMP for Coastal Development Permit E-06-013, Poseidon Resources Carlsbad Desalination Project</i>, November 21, 2008, at 13. Available at http://documents.coastal.ca.gov/reports/2008/12/W16a-12-2008.pdf.</p> <p>Thus, these technology measures were removed from</p>

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		<p>the Minimization Plan. It would not be necessary or reasonable to conduct biological monitoring at the outfall for organisms returned to the ocean. Because these technology measures have been removed from the Minimization Plan, the comment has been rendered moot. Moreover, the Minimization Plan provides for mitigation sufficient to fully offset projected entrainment and impingement.</p> <p>The revised Minimization Plan assumes 100 percent mortality for entrained organisms and does not claim any intake and mortality reduction related to micro-screening.</p>
31.	<p>Methodology for Impingement Assessment, intake flow velocity. The statement that if intake through-screen velocity is below or equal to 0.5 fps, the impingement mortality of the intake screens is considered to be negligible has been disputed by the Henderson and Seaby. Their report lists nine problems that question this assertion of which six are applicable for the CDP. Two that not relevant here are high and low water temperatures and the third problem of flow direction with respect to gravity is not present because it is horizontal in this case. These six problems are listed below:</p> <ol style="list-style-type: none"> 1. Fish often do not know in which way to swim and so may become entrained or impinged even if they have they have the speed to escape. 3. There is no consideration of the effects of tide, currents etc. on flow rates through the screens. 4. There can be problems because fish orientate at 90 degrees to the screen and not the flow. 5. The velocity is determined at the screens - at this point the fish may already be trapped 	<p>This comment raises concerns regarding whether the reduction of intake through-screen velocity below or equal to 0.5 FPS reduces impingement mortality to less than significant levels. Reduced intake velocity has been recognized by the USEPA (EPA 440/1-76/015-a. USEPA April 1976. Washington, DC.) and the SWRCB (March 2008 Scoping Document, Water Quality Control Policy on the Use of Coastal and Estuarine Water for Power Plant Cooling) as an accepted method of reducing impingement. To the extent that the Henderson & Seaby study challenges these, the comment is noted.</p> <p>Nevertheless, Poseidon proposes to mitigate for all estimated impacts, without consideration to any site, design, or technology measures that will be implemented to minimize these impacts. In light of this, it is still acceptable for the Board to find that the project, in sum, complies with section 13142.5.</p> <p>The Regional Board's present evaluation of the</p>

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	<p>8. Fish eggs are often free floating and are therefore vulnerable to entrainment irrespective of the intake velocity</p> <p>9. Larval fish, post-larval fish and very young fish are poor swimmers and cannot achieve 0.5 ft/sec. They also do not all react to a flow by moving away from it.</p>	<p>proposed project is limited to minimization efforts applicable only to co-location operation for CDP benefit. However, in Chapter 3 of the Minimization Plan, if EPS permanently ceases operations, among other design measures, the Discharger proposes to reduce the inlet screen velocity (to equal to or less than 0.5 fps) and reduce the fine screen velocity. Additional evaluation of the CDP's design features would be necessary if the EPS permanently ceases power generation operations, and if the Discharger proposes, through submittal of a new Report of Waste Discharge, to operate EPS's seawater intake and outfall independently for the benefit of the CDP in a "stand-alone" capacity.</p> <p>The Regional Board notes that the comment takes issue with the principle that intake through-screen velocities at or below 0.5 feet per second (fps) reduce impingement mortality to insignificant levels but also notes that this approach has been widely followed by key regulatory agencies and is backed by extensive scientific study and review. Since the 1970s, EPA has recognized the relationship between flow and impingement. ("Development Document for Best Technology Available for the Location, Design, Construction and Capacity of Cooling Water Intake Structures for Minimizing Adverse Environmental Impact. EPA 440/1-76/015-a. USEPA April 1976. Washington, DC.") EPA notes that "flow reduction serves the purpose of reducing both impingement and entrainment." (U.S. Environmental Protection Agency, Phase II, Final Rule Technical Development Document, Chapter 4 [Efficacy of Cooling Water Intake Structure Technologies], at Section 1.5, p. 4-4. Available at http://www.swrcb.ca.gov/rwqcb3/water_issues/program)</p>

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		<p>s/duke_energy/docs/usepa_efficacy_of_intake_technologies.pdf.) According to EPA, this explains why “[e]nvironmental commentators [have] advocated for flow reduction technologies as the most direct means of reducing fish kills from power plant intakes.” National Pollutant Discharge Elimination System -- Final Regulations to Establish Requirements for Cooling Water Intake Structures at Phase II Existing Facilities, 69 Fed. Reg. 41,576, 41,612 (July 9, 2004) (to be codified at 40 C.F.R. pts. 9, 122, 123, 124, 125).</p> <p>Similarly, the State Board recognizes the relationship between reduced flow and reduced impingement. In its March 2008 Scoping Document on once-through cooling (OTC) at coastal power plants, the State Board reiterated EPA’s conclusion and observed that “[f]low reduction will reliably reduce both impingement and entrainment impacts of OTC [once through cooling].” (State Board, Scoping Document: Water Quality Control Policy on the Use of Coastal and Estuarine Waters For Power Plant Cooling (March 2008), at 45. Available at http://www.energy.ca.gov/2008publications/SWRCB-1000-2008-001/SWRCB-1000-2008-001.PDF.) The EPS intake structure is an OTC intake.</p> <p>According to the comment, the Henderson and Seaby study challenges certain assumptions of the EPA/State Water Board approach as described above. To the extent that the Henderson and Seaby study challenges those accepted approaches, the comment is noted.</p>
32.	The quantification of unavoidable impacts to marine life is not acceptable. The Marine Life Protection Act requires	The Marine Life Protection Act (Fish and Game Code, sec. 2850 et seq.) is not directly applicable to the CDP.

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	<p>an ecosystem based approach. This requires that the impingement and entrainment impacts be assessed for all the marine organisms from the benthos, up the food web, and to the top consumers as shown in the Generalized Aquatic Food Web shown in the NOAA power point presentation cited above. Table 5-1 tabulates the impingement of fishes, sharks and rays during June 2004 to June 2005 prorated for 304 MGD. Note that under normal operations 19,408 individuals were impinged and 97 separate species. No ecological assessment has been provided to indicate whether these losses are sustainable and can maintain a healthy biologically diverse ecosystem. Instead the Report dismisses the impingement loss by citing that it amounts to 2.11 lbs/day. Likewise, the entrainment effects methodology is flawed because it addresses only the fish larvae entrainment.</p>	<p>Quantification of unavoidable impacts however is not necessary because Poseidon proposes to mitigate for all estimated impacts, without consideration to any site, design, or technology measures that will be implemented to avoid or minimize these impacts.</p> <p>Also, to clarify, Table 5-1 referenced here was in error, as it did not show pro-rated data. It has been replaced in the March 27, 2009 Minimization Plan (as Table 5.3) with pro-rated data.</p>
33.	<p>Need for an ecosystem based management plan. These local impingement and entrainment impacts must be evaluated to assess the connectivity with the coastal marine ecosystems to the north and south. This means that an ecosystem based management plan that is coordinated state-wide is needed.</p>	<p>An ecosystem approach is not entirely applicable to this case because the affected ecosystem is not wholly removed (as is generally done when evaluating compensatory mitigation for impacts of fill in a CWA Section 401 certification). Rather, specific components of that ecosystem are being altered due to impingement and entrainment.</p> <p>Nevertheless, Chapter 5 of the Minimization Plan does give consideration to the ecosystems affected and Chapter 6 attempts to provide compensatory mitigation in terms of the ecosystems affected.</p> <p>Also, see response to Comment 31.</p>
34.	<p>Reference site data needed to prevent shifting baselines. The Report should obtain ecological health data for reference marine sites that have not been used for once-through-cooling source water and the source water marine for the CDP for comparison benchmarking. Ecological health data</p>	<p>The MLMP incorporated into the Minimization Plan includes performance measures for the mitigation site(s) that are to be compared to reference wetlands (not being used for once-through-cooling). The baseline analyses of the reference wetlands may be</p>

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	for the CDP marine source waters as a reference basis is not acceptable. The ecosystems management must avoid the practice of shifting or sliding baselines.	useful in such a manner.
35.	Comprehensive receiving waters monitoring program is required. The Report lacks a comprehensive receiving waters monitoring program to evaluate the ecological health the marine ecosystems. The program should include sampling of benthic infauna, phytoplankton, zooplankton, benthic and piscivorous fish.	This comment should have been raised during the issuance of Order R9-2006-0065, NPDES permit (and monitoring requirements) for the CDP discharge.
36.	The proposed mitigation plan is severely flawed. Chapter 6.2 states the conservative assumption that CDP will cause 100 percent mortality of the marine organisms that are diverted from the Agua Hedionda Lagoon to the CDP. However, the Report does not provide data on the taxa and abundance of these organisms in the seawater that reside in the Lagoon but also in the coastal waters.	By attachment (Attachment G, Chapter 3) to the Minimization Plan, Poseidon includes baseline studies of the existing marine system in the area that could be affected by the facility.
37.	California actions to implement the MLMA. The above comments represent a significant departure from the approach presented in the Flow, Entrainment and Minimization Plan. These comments are based on the MLMA that was enacted in 1999. The implementation of the Plan is still underway. The Ocean Protective Council Five Year Strategic Plan Action Status February 20087 has two relevant objectives. The first is listed under Section C. Ocean and Coastal Water Quality, Objective 3, Once-through-cooling; Work to eliminate the harmful impacts of once through-cooling coastal power plants. Status: In progress. The second objective is listed in Section E. Coastal and Ocean Ecosystems, Objective 2: Marine Life Management Act; Help establish ecologically and economically sustainable	The MLPA is not a governing statute and is not directly applicable to the Minimization Plan.

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	fisheries.	
3/31/2008 letter from Denise Moreno-Ducheny		
38.	<p>I am writing in support of Poseidon Resources' proposed Carlsbad Desalination Project Flow, Entrainment, and Impingement Minimization Plan.</p> <p>The Carlsbad desalination plant is an excellent example of what can be accomplished when the private sector and government cooperatively strive for innovative solutions to our regional issues.</p> <p>I support the Carlsbad Desalination Plant and request that you approve the Flow, Entrainment, and Impingement Minimization Plan for this project.</p>	Comments noted.
3/31/2008 letter from Valley Center Municipal Water District		
39.	<p>This project has already gone through multiple layers of approvals over the past eight years and has long since proven it's an environmentally-responsible project. I would like to remind the board that they have already given their approval for a discharge permit and that the Flow, Entrainment and Impingement Minimization Plan includes many additional protections for the surrounding marine environment. In fact, the plant will be crucial to the long-term health of the Agua Hedionda Lagoon when the Encina Power Station is decommissioned and no longer provides maintenance and dredging.</p> <p>Valley Center Municipal Water District understands that seawater desalination is a key part of the solution to the region's long-term water reliability needs. The entire San Diego region is depending on this new water supply to lessen the demand on imported water. We find no reason to delay</p>	Comments noted.

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	action any longer and we strongly urge the Board to approve this project.	
4/1/2008 letter from Bill Horn, Supervisor, 5th District, County of San, Diego		
40.	<p>I am writing to urge you to support the Carlsbad Desalination Project at your April 9, 2008 meeting. A large portion of the district I have been elected to represent will benefit directly from the construction of the desalination facility.</p> <p>The San Diego County Water Authority has approved a resolution in support of the Carlsbad Desalination Project, and has identified the desalination plant as a critical component of the region's water diversification strategy.</p> <p>Your board already approved this project in 2006 and there is no reason for further regulatory delay. I urge you to accept the project's Flow, Entrainment and Impingement Minimization Plan and move. this project closer to providing San Diego with the water it desperately needs.</p>	Comments noted.
4/1/2008 letter from Mary Salas, 78th Assembly District		
41.	<p>This letter is to inform you of my support for the Carlsbad Desalination Plant and to request that you finalize the discharge permit by approving the key permit condition that requires a project to minimization marine impacts.</p> <p>The water produced will be of the highest quality, meeting or exceeding all drinking water regulatory standards under the law. It is also guaranteed never to cost more than the rates set by the San Diego County Water Authority, ensuring that Sweetwater won't have to pass on excessively high water rates to their customers. And it has gone through rigorous testing and public scrutiny to ensure that the plant will be</p>	Comments noted.

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	<p>environmentally friendly and efficiently operated. The project developers have made every effort to comply with state and federal environmental regulations and have long since proved their project will not harm the Agua Hedionda Lagoon or ocean. In fact, their proposed mitigation measures will restore 37 acres of wetlands habitat and will provide for the annual maintenance. of the lagoon.</p> <p>I am proud to support this successful public-private partnership between Poseidon Resources with the City of Carlsbad and I urge you to approve this project at your April 9,2008 meeting.</p>	
4/2/2008 letter from Coast Law Group		
42.	<p>The Board's consideration of approval of the Revised Flow, Entrainment and Impingement Minimization Plan at its April 9, 2008 board meeting would be both legally inappropriate and logistically imprudent. Porter-Cologne section 13225 and case law mandate that the Regional Board coordinate with other agencies similarly charged with responsibility for water quality protection prior to taking action on a matter equally within such other agencies' jurisdictions. As was made clear in the March 20, 2008 comment letter from the California Coastal Commission, significant additional resource agency input is required before Poseidon's mitigation plan can be appropriately considered for final approval by any agency.</p> <p>Only through coordination with staff from the Coastal Commission, California Department of Fish and Game, United States Fish and Wildlife Service, and National Marine Fisheries Service will the Regional Board be able to render an appropriate recommendation on the mitigation proposal. If the decision to approve is made prior to the agency coordination meeting, the record will be insufficient to support</p>	<p>The Board is considering approval of the March 9, 2009 Minimization Plan, as revised March 27, 2009. The Board's action will supersede the conditional approval of April 9, 2008 (Resolution No. R9-2008-0039). Since the April 9, 2008 Board Meeting, the Discharger participated in an interagency meeting to determine what mitigation options might be available and feasible. Thirteen state and federal agencies were invited to attend, and staff representatives from the Regional Board, Coastal Commission, California State Lands Commission, California Department of Fish and Game, California Department of Transportation, City of Carlsbad, City of Vista, and U.S. Fish and Wildlife Service attended. The Discharger also coordinated with other agencies during this time.</p> <p>Since April 2008, the MLMP was revised numerous times in response to various agencies' and public comments. The Coastal Commission approved the MLMP, with final language, in December 2008. While recent Coastal Commission comments indicate that</p>

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	<p>such decision, the approval will be subject to legal attack, and the project will be even further delayed. Because the project can not move forward without Coastal Commission approval of the mitigation plan anyway, it makes sense to continue the Board's consideration of the Revised Flow, Entrainment and Impingement Minimization Plan until appropriate resource agency input has been obtained.</p>	<p>the adequacy of the MLMP for impingement may be revisited, such potential action does not require the Board to postpone action. Order No. R9-2006-0065 specifically authorizes the Regional Board to require revisions to the Minimization Plan and the Board may require revisions, as necessary, to address any future Coastal Commission action.</p>
<p>43.</p>	<p>Recently, the State Water Resources Control Board articulated an interpretation of the statute's meaning, and did so in a way inconsistent with that put forward by Poseidon in its March 7, 2008 response to the Regional Board's February 19th letter. The State Water Board Scoping Document on its "Water Quality Control Policy on the Use of Coastal and Estuarine Waters For Power Plant Cooling" (dated March, 2008) states:</p> <p>Finally, the Water Boards must also consider the legislative directive in Water Code §13142.5 when regulating cooling water intake structures. Under the Clean Water Act, facilities must, at a minimum, comply with section 316(b) requirements and any more stringent applicable requirements necessary to comply with state law. Section 13142.5 has a more limited coverage than section 316(b) in that the former covers only new and expanded coastal facilities. However, section 13142.5 appears to be more stringent than section 316(b) in one respect. Section 13142.5 requires use of the best available technology feasible "to minimize the intake and mortality of all forms of marine life", without regard to whether these impacts are adverse, in contrast to section 316(b) which focuses on "minimizing adverse environmental impact."</p>	<p>As an initial matter, the State Water Board's Scoping Document is still a draft document so does not reflect final interpretation by the State Water Board. However, even if it does reflect final interpretation, the Regional Board's interpretation of Water Code section 13142.5(b) does not conflict with the commenter's view on this point. Section 13142.5(b) requires the use of the "best available site, design, technology, and mitigation measures feasible to minimize the intake and mortality of all forms of marine life." This statute applies without regard to whether the intake and mortality is characterized as "adverse."</p> <p>The Regional Board agrees that Water Code section 13142.5 is applicable to the CDP, as stated explicitly in Order No. R9-2006-0065. Section 13142.5(b) provides the framework for the review and approval of the March 27, 2009 Minimization Plan. Also, section 316(b) of the Clean Water Act does not apply to the CDP, as explicitly noted in Order No. R9-2006-0065, Fact Sheet, section VII.4.</p>

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	<p>While Poseidon consistently argues that federal Clean Water Act section 316(b) regulations and policies do not apply to its desalination project proposal, there can be no dispute that Porter Cologne section 13142.5 is applicable to the project's seawater intake. Pursuant to the State Board's interpretation noted above, regardless of whether applied to power plants or desalination plants, the entire legal and scientific framework under which Poseidon has crafted its mitigation proposal is just plain wrong.</p> <p>Unless the Regional Board believes it is entitled to interpret Porter Cologne in a manner inconsistent with the State Board, and we do not believe this to be so, there is no legal option but to deny Poseidon's proposed mitigation plan as inadequate, and direct that yet another revised Flow, Entrainment and Impingement Minimization Plan be submitted for agency and public review.</p>	
4/2/2008 letter from San Diego Coastkeeper and Surfrider Foundation		
44.	<p>Timing of Implementation Schedule is Arbitrary and Unnecessarily Aggressive. This approval would then set an arbitrary and extremely restrictive set of dates for multiple agency coordination and separate approvals. Further, the Implementation Schedule appears to require that the Revised Plan be thoroughly reviewed by multiple agencies, in some instances, after the Regional Board has approved the Revised Plan. The Revised Plan incorrectly states that Poseidon's second submission of this Plan (Original Plan) was posted on the Regional Board website "for public review and comment" shortly after it was submitted in February 2007. Though the Original Plan was posted on the Regional Board website, it was never subject to public comment and review. Further, Poseidon admits that the Original Plan took</p>	<p>Comment noted. This comment is not relevant as since the April 9, 2008 conditional approval of the March 6, 2008 Minimization Plan, the Discharger has submitted the March 9, 2009 Plan, as revised March 27. In the intervening time, there was public agency coordination and the Regional Board has complied with applicable public notice requirements for review of the March 9, 2009 Plan, as revised on March 27.</p>

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	<p>12 months of review by the Regional Board, yet its proposed schedule provides less than one month for review of the Revised Plan. Such a limited period is insufficient for the Regional Board and inappropriate for public review.</p>	
<p>45.</p>	<p>Porter-Cologne Act Governs Plan Elements and Has Been Disregarded by Applicant. California Water Code Section 13142.5 (b) establishes the legal standards for the withdrawal and industrial use of seawater.</p> <p>Minimizing the "intake and mortality" requires "before the fact" compliance with best available site, design, technology and mitigation measures.</p> <p>The Revised Plan inaccurately summarizes this explicit language as simply "...requir[ing] industrial facilities using seawater for processing to use the best available site, design, technology <i>and</i> mitigation feasible to minimize impacts to marine life." See: <i>Revised Plan, Executive Summary, p. E5-1</i> (emphasis in original). This summarization of the actual language omits the most critical objective of the law to "minimize the intake and mortality of all forms of marine life."</p> <p>It is critical to recognize the interaction between the terms "site," "design," "technology," and "mitigation measures." These terms should be considered in their totality, not as distinct and disconnected parts.</p> <p>It is equally critical to recognize that beside the mandate to employ the best available site, design and technology, "mitigation measures" must also "minimize the intake and mortality of all forms of marine life." In stark contrast to this plain mandate, the Revised Plan relies primarily on an, as yet</p>	<p>The Regional Board agrees that Water Code section 13142.5(b) establishes the legal standards for withdrawal and industrial use of seawater at the CDP and has reviewed the Minimization Plan under this standard.</p> <p>The Regional Board has reviewed the Minimization Plan and finds that under the circumstances of co-located operation, the Discharger will use the best available site, design and technology feasible, as well as the best available mitigation feasible to minimize the intake and mortality of marine life.</p> <p>While the Riverkeeper II case, (<i>Riverkeeper v. U.S. Environmental Protection Agency</i>, 475 F.3d 83 (2007)), applicable to power plants through CWA 316(b), precludes the use of compensatory mitigation or restoration in lieu of best technology available, it does not apply here to preclude use of mitigation because 316(b) does not apply to the CDP and because the Discharger is not substituting mitigation for technology.</p> <p>Water Code section 13142.5(b) does not distinguish temporally or otherwise between use of site, design, technology or mitigation, but requires the Regional Board to find that all elements are being used in</p>

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	<p>undefined, "after the fact" restoration project to mitigate the so-called "unavoidable impacts." "Restorative measures" have been found inconsistent with the "technology-forcing" policies and plain reading of Clean Water Act § 316(b) in Riverkeeper II.6 Instead, the court found that: "Restoration measures <i>correct</i> for the adverse environmental impacts of impingement and entrainment...but, they do not <i>minimize</i> those impacts in the first place."7 Porter-Cologne § 13142.5(b) must be read the same way. To do otherwise would be an illogical read of the mandate found in Porter Cologne to minimize impacts from the use of seawater for cooling - and by extension, any other industrial process listed in Section 13142.5(b).</p>	<p>combination to minimize intake and mortality of marine life.</p>
<p>46.</p>	<p>Applicant Misconstrues "Feasible Alternatives". Definition Poseidon has chosen a definition for "feasible" by interpreting that term from the California Environmental Quality Act (CEQA) - a law with a very different purpose than Porter Cologne. CEQA is a vehicle for informing the public about the environmental impacts of potential projects in order for the public and decision-makers "to make a fully informed decision. In that respect, the Environmental Impact Report is the heart of CEQA and its purpose is "information-forcing". In contrast, Porter-Cologne is a "technology-forcing" law for industrial uses of seawater for cooling, heating and other industrial processes. Importantly, Section 13142.5(b) expands on the protections found in the federal Clean Water Act § 316(b) by including other industrial processes beyond "cooling water intakes" to the list of regulated activities.</p> <p>In short, the Riverkeeper II decision specifically prohibited a "cost-benefit" analysis to justify an exemption from the technology-forcing policy of CWA § 316(b). The same would hold true for the policies embodied in California's Water Code § 13142.5(b). This type of .cost-benefit analysis is what is</p>	<p>As used in Water Code section 13142.5(b), the term "feasible" is not defined. Through review of the Minimization Plan as required by section 13142.5(b), the Regional Board has interpreted the term "feasible" in a reasonable manner. The definition of "feasible" in CEQA, that is, "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors (Public Resources Code section 12061.1) is a reasonable, comprehensive definition of "feasible" for purposes of informing the Board's application of Water Code section 13142.5(b).</p> <p>As indicated in response to Comment 45, the Riverkeeper II case does not apply to the CDP because it is not a power plant governed by section 316(b) of the CWA. Moreover, the Regional Board notes that since the comment was made, the U.S. Supreme Court has reversed the Riverkeeper II court on the point of "cost-benefit" analysis. (Entergy Corp. v. Riverkeeper, Inc., et al. (2009) 556 U.S. ____ [29</p>

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	used as a justification for the continued and exacerbated intake and mortality of marine life recommended in the Revised Plan.	S.Ct. 1498].)
47.	<p>Revised Plan Takes Flawed Approach Toward Site, Design, and Technology Issues</p> <p>Site Analysis The review of potential sites is too narrowly analyzed and excludes a combination of potential sites that could feasibly result in dramatically reducing the intake of marine life.</p> <p>In conclusion, like many of the segmented sections of the Revised Plan, this section on alternative "Site" locations is not comprehensively analyzed along with different designs, technologies, and other mitigation measures that would reduce the intake of seawater.</p>	<p>Site analysis has been completed for both the facility location and the intake location. During the CEQA process, other facility locations were evaluated, but co-location with the EPS was determined to be the preferred alternative. The Regional Board then evaluated this proposed co-location in adopting Order No. R9-2006-0065. The Regional Board has considered alternative intake locations as proposed by the Discharger in the Minimization Plan. The Regional Board finds that the alternative intake locations evaluated by the Discharger are sufficient to meet the requirements of Section 13142.5(b) and support the use of the existing EPS intake structure under conditions of co-location operation for the benefit of CDP. The Coastal Commission also determined that the alternative intake locations were infeasible and would cause more impacts than using the existing intake structure.</p> <p>Please see Responsiveness Summary for additional supporting information.</p>
48.	<p>Design Analysis Use of the EPS discharge for "desalination source water" does not meet the purpose of the Revised Plan to document the minimization of intake and mortality from a "stand alone" facility. The annual estimate of marine life mortality doesn't account for seasonal variations in the survival strategy and spawning periods of the numerous species entrained at the</p>	<p>The Regional Board concurs with this comment, however, the Regional Board is not evaluating a stand-alone facility at this time. Changes have been made to the tentative Order to clarify the trigger for when a new Report of Waste Discharge needs to be submitted by the Discharger.</p> <p>As reflected in Tentative Order No. R9-2009-0038,</p>

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	site.	<p>additional evaluation of CDP's operations for compliance with CWC section 13142.5(b) will be necessary if EPS ceases power generation operations and Poseidon proposes, through a new Report of Waste Discharge, to independently operate EPS's seawater intake and outfall for the benefit of the CDP ("stand-alone operation").</p> <p>An annual estimate by definition would not account for seasonal variation, and annual estimates in the Minimization Plan are not intended to do so. Tenera conducted impingement and entrainment sampling for a one-year period beginning in June 2004, which accounts for seasonal variations in the affected populations of marine organisms.</p>
49.	<p>Poseidon's discharge analysis is misleading. As was the case in Poseidon's original flow estimates for EPS, the numbers estimated in the Revised Plan are unjustifiable. EPS' intake flow has historically diminished and will continue to do so. Therefore, the 2007 figures do not provide an accurate assessment of future flow. Further, it is illogical to conclude that EPS providing 61 percent of the needed dilution water reduces Poseidon's impacts by 61 percent. Poseidon, at the lowest estimate, <i>increases</i> impingement and entrainment impacts by 39 percent by perpetuating the use of the intakes.</p>	<p>The Minimization Plan does identify historic flows for 2008 and states that the EPS flows would have met the CDP's intake requirements approximately 88 % of the time. However, the Regional Board is not considering historical flow data as part of its evaluation of compliance with section 13142.5.</p>
50.	<p>We agree that reducing intake velocity reduces impingement. However, the more intractable problem is entrainment - which is a function of volume, not velocity. Analysis of Poseidon's Original Plan reveals that the maximum velocity of all of the generating units is at least double .5 fps. In light of the future retirement of units 1, 2, and 3, Poseidon's intake water must come from units 4 and 5. Both units' maximum velocity at</p>	<p>The comment assumes the future retirement of units 1, 2, and 3. The permanent shutdown of Units 1, 2, and 3 has been proposed as part of the Carlsbad Energy Center (California Energy Commission Application for Certification No. 07-AFC-06). The Carlsbad Energy Center, however, has not been certified by the California Energy Commission and it is speculative at</p>

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	<p>high and low tide is significantly higher than .5 fps. In the Original Plan, Poseidon claimed that the "relative contribution to the total impingement potential of the intake pump system" would be "proportional to the pump flow." However, in the Revised Plan, Poseidon has failed to show how it will obtain 304 MGD and reduce intake velocity when only two of the five units are available for use.</p>	<p>this time to determine whether the project will be approved by the California Energy Commission and constructed by the applicant following such an approval.</p> <p>If the Carlsbad Energy Center project were to be built and Units 1, 2 and 3 were to be permanently shut down, EPS Units 4 and 5 would continue to operate and the circulating water system for those units would remain on line. The combined intake capacity of Units 4 and 5 (633 MGD) exceeds the feedstock requirements of the Project (304 MGD). Thus, the CDP could obtain 304 MGD from Units 4 and 5.</p> <p>Moreover, the Regional Board's present evaluation of the proposed project is limited to minimization efforts applicable to only co-location operation for CDP benefit, and Discharger's ability to effect design features of the intake is restricted. However, in Chapter 3 of the Minimization Plan, when or if EPS permanently ceases operations, among other design measures, the Discharger proposes to reduce the inlet screen velocity (to equal to or less than 0.5 fps) and reduce the fine screen velocity. Additional evaluation of CDP's design features would be necessary if EPS permanently ceases power generation operations, and the Discharger proposes, through a new Report of Waste Discharge, to operate EPS's seawater intake and outfall independently for the benefit of the CDP in a "stand-alone" capacity.</p> <p>As described in section 3.5 of the March 27, 2009 Plan, however, when the EPS is not operating, the CDP's seawater supply will be pumped through an optimum combination of the existing fine screens and</p>

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		<p>condensers serving the power plant to minimize intake velocity and water turbulence. Lowering intake velocity and water turbulence will lessen the physical damage to marine life, resulting in a reduction of impingement mortality.</p> <p>Under the conditions of temporary shutdown, and EPS's operations permitting, a modified pump configuration to reduce inlet velocity may be possible.</p> <p>Also, the Regional Board Regulations and Requirements concerning this project do not rely on velocity for estimating the impacts associated with impingement and entrainment. This is partly because the Regional Board is only permitting for co-location at this time.</p>
51.	Discrepancies between the Original Plan and the Revised Plan also require attention. For example, the Original Plan states that according to 2004-2005 analysis, the maximum pumping capacity of unit 4 is 288 MGD. However, the Revised Plan states that unit 4 maximum pumping capacity is 307 MGD.	Comment noted. The pumping capacity of Unit 4 is 307 MGD, which is reflected accurately in the March 27, 2009 Minimization Plan. See Table 2-1.
52.	The Revised Plan states that routing intake through the condensers and reducing velocity and turbulence will reduce entrainment mortality. However, the Revised Plan fails to document any studies conducted to verify these conclusions or quantify the reduction in mortality. Further, Poseidon cannot assert that utilizing only one of two pumps for each generating unit is a design feature that mitigates impingement of marine life. As noted above, perpetuating the use of open ocean intakes results in increased impingement and entrainment as compared to a scenario in which the intakes are no longer used or a sub-seafloor intake design is	<p>A prior version of the Minimization Plan did assert a reduction of entrainment mortality by these means. The Coastal Commission, however, was not persuaded by the Discharger's demonstration as to this point. Accordingly, the Minimization Plan was revised to assume 100 percent mortality of entrained organisms. Studies to support a reduction in mortality that is not claimed to occur are not necessary.</p> <p>This comment is incorrect. Using one pump from two independent generating units instead of two pumps</p>

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	used.	<p>from one generating unit allows for the same water flow through a two-times larger area, reducing the volume and velocity of the water transported through a particular intake channel, and therefore across the racks and screens for that channel, which reduces impingement. It is on this reasonable basis that the Minimization Plan describes this mode of operation as a design feature that minimizes impingement.</p> <p>When the EPS intake pumps are being used to deliver cooling water for power generation, then both cooling pumps for a particular generating unit must be in operation simultaneously to provide an adequate amount of cooling water for the normal operation of the unit; in such instance, the Discharger will not be able to shut down one of two pumps for that generating unit. However, when doing so will not interfere with the EPS's power generation operations and Cabrillo permits, the Discharger proposes that CDP will use one pump from each unit, which will minimize impingement.</p> <p>As discussed in the Minimization Plan, by operating as a co-located facility, the CDP does not perpetuate the use of open ocean intakes. Nor does the CDP increase impingement or entrainment beyond de minimis levels when the EPS provides sufficient feedstock water. As discussed in Chapter 4 of the Minimization Plan, the Discharger conducted a thorough review of the site-specific applicability of subsurface intake and a comprehensive hydrogeological study of the use of subsurface intakes in the vicinity of the proposed desalination plant site and concluded that subsurface intakes are not feasible.</p>

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		<p>The subsurface intake system would be infeasible due to site-specific geologic conditions at the City of Carlsbad. To collect the seawater from the filter bed and transfer it to the Project, the intake system would require 78 collector pipelines on the ocean floor connected to 78 pump stations that would be installed on Tamarack State Beach, which would limit public access to the beach for a period of 2 to 4 years, result in significant loss of recreational activities for the City of Carlsbad, and result in a permanent loss in public access and visual resources impacts where the collection wells are located. See Poseidon Resources Corporation, Additional Analysis of Submerged Seabed Intake Gallery, October 8, 2007. See Coastal Commission Findings adopted on August 6, 2008, page 50 of 106.</p>
53.	<p>Poseidon has also provided no documentation to support the contention that reduction of pumping bears a 1:1 ratio with reduction of velocity and impingement.</p> <p>Much like the <i>claims</i> that reducing velocity and turbulence will reduce entrainment and impingement mortality, reducing entrainment mortality by eliminating exposure to heat in the condensers is not backed up with any referenced studies that verify and quantify the reduced mortality rate.</p>	<p>Data provided in Attachment 5 does not strongly support a linear relationship between flow and impingement. Please refer to responses to Comments 31 and 104.</p> <p>In co-location mode for CDP benefit, the Discharger lacks control over the use of heat treatment. Elimination of heat treatment is a measure that will be taken if the CDP operates in stand-alone mode, an operating alternative that is not presently before the Regional Board. Eliminating exposure to heat reduces heat-related entrainment mortality, as discussed in Sections 3.6 and 3.7 and table 3-1 of the Minimization Plan. In addition, it is well established that heat treatment causes mortality because fish get trapped in the intake system during the heat treatment cycling. The expert statement submitted into the record by Steven LePage discusses this relationship.</p>

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		<p>Commenter does not provide any evidence to suggest that such a position is not well founded. The Regional Board agrees that eliminating heat treatment will result in a reduction of mortality, although at this time the reduction is not quantified.</p>
54.	<p>The Revised Plan asserts that replacing "heat treatment" with "scrubbing balls" will eliminate marine life mortality. Again, the Revised Plan does not document any studies to verify and quantify this assertion.</p> <p>Further, the introduction of this cleaning method comes at a significantly late stage in the review process. This method was not analyzed in the EIR, during NDPEs review, CDP review, or in the SLC permit review process. Thus, the proposed "scrubbing ball" method has not been studied for possible negative impacts, nor has it been proven a viable alternative to heat treatments. Additionally, the recapture of the balls after they are introduced into the system is not detailed. Introducing 1/2 inch plastic balls into the marine environment presents a variety of serious concerns.</p>	<p>The Regional Board is not considering the adequacy of the heat treatment replacement at this time since this is a feature that could be incorporated under stand-alone conditions. Once EPS permanently shuts down and the CDP is operated on a stand-alone basis, the Regional Board will undertake additional evaluation under CWC Section 13142.5.</p>
55.	<p>Technology Analysis</p> <p>The technology section of the Revised Plan begins with the assertion that the draft State Lands Commission lease precludes technologies that would interfere with the operation of the EPS. First, the future of the EPS is before the California Energy Commission for review of a "re-power" permit that would eliminate the use of the existing "once through cooling" system for much of the EPS capacity. The EPS intake is also the subject of ongoing litigation that may be settled if the Energy Commission approves the EPS re-power plan.</p> <p>Second, the State Lands Commission has not finalized the lease terms. Consequently, the meaning of this draft</p>	<p>Comment noted that the State Lands Commission lease precludes technologies that would interfere with power plant operations. The application pending before the California Energy Commission, however, calls for the continued operation of Units 4 and 5, which have an aggregate capacity of 633 MGD, well in excess of the CDP's feedstock needs.</p> <p>The Regional Board's present evaluation is focused on minimization efforts applicable only to CDP's operations when it is operating in conjunction with EPS, consistent with the description of the Discharger's proposed CDP operation in its Report of Waste Discharge for order No. R9-2006-0065. For the</p>

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	<p>language should be coordinated through a cooperative effort by the Regional Board, State Lands Commission, Coastal Commission and the interested public before the Regional Board approves the Revised Plan.</p>	<p>foreseeable future, the Discharger has no ability to interfere with EPS's operations, including changing the design, technology, and operations of the intake system. As reflected in Tentative Order No. R9-2009-0038, additional evaluation of CDP's operations for compliance with CWC Section 13142.5(b) would be necessary if EPS ceases power generation operations and the Discharger proposes, through a new Report of Waste Discharge, to independently operate EPS's seawater intake and outfall for the benefit of the CDP ("stand-alone operation").</p> <p>The Regional Board declines to speculate on the outcome of pending litigation.</p> <p>The State Lands Commission approved the lease terms at its August 22, 2008 meeting, and the lease was executed by the Discharger on November 24, 2008, rendering this comment moot.</p>
56.	<p>The Revised Plan also asserts that the foundation for analyzing best available technology relies on the definition of "feasibility" found in CEQA. We disagree. Further, the introduction to this chapter constrains the analysis of "best available technology" to the "site specific and size of this project." As explained below, these pre-determined constraints set up and utilize an illegal cost-benefit analysis of available technologies to reduce the intake and mortality of marine life. Ironically, if the design (e.g., size of the facility and its product output) was considered in combination with the truly best available technology, the alternative sub-seafloor intake technologies outlined in the Revised Plan in Chapter 4 would have been correctly identified as far superior to those chosen for the project in the Revised Plan.</p>	<p>See response to comment 46.</p>
57.	<p>The intake alternatives that are reviewed are not realistic,</p>	<p>The Discharger has provided multiple alternatives in</p>

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	<p>and misrepresent the associated technology. The Revised Plan offers illustrations and discussion of pump stations on the surface of the adjacent beach that would disrupt recreational uses and inter-tidal ecological processes. However, <i>the</i> successful pilot study of sub-seafloor intakes at Doheny Beach demonstrates that the drilling of wells can be done to cause only temporary disruption to both recreational opportunities and beach ecology.</p>	<p>Chapter 4. The Regional Board relied on these alternatives in determining compliance with CWC 13142.5.</p>
<p>58.</p>	<p>Finally, the testing location that yielded groundwater of a higher salt concentration than ocean water is undisclosed. The Revised Plan merely states vaguely that an "actual intake well test completed in the vicinity of the EPS" was conducted.(emphasis added) However, the tests completed by Poseidon are not consistent with the Doheny Beach pilot study. In fact, in the Doheny study, the water quality for the intake was far superior to ocean water and eliminated the need for much of the otherwise necessary pretreatment (and associated energy consumption and costs).</p>	<p>Pilot testing for the CDP was conducted at Agua Hedionda Lagoon. See Wiedlin, M.P. and Huntley, D., <i>Analysis of Alternative Subsurface Intake Structures, Proposed Desalination Plant, Carlsbad California</i>. Wiedlin & Associates, Inc. Jan. 27, 2007 (Previously submitted April 2, 2009, Latham & Watkins LLP Comments, Appendix B, Tab 33.)</p> <p>Commenter refers to Doheny Beach tests that are not on this record. Moreover, the relevance of such a comparison is not apparent. Commenter provides no basis why we would expect the test results from these two distant locations to be consistent. The fact that sub-seafloor water in the vicinity of the EPS may be of lesser quality than sub-seafloor water at Doheny Beach does not change the feasibility analysis for the CDP.</p>
<p>59.</p>	<p>The Revised Plan proposes micro-screening ahead of the pre-treatment equipment combined with the discharge of the entrained organisms to the ocean. However, it is not clear from the document that these micro-filters will actually improve the survival of the entrained organisms. Further, as mentioned above, the apparent design includes the micro-filtration of not only the "source water" for the desalination facility, but the additional water necessary for diluting the</p>	<p>See response to Comment 30.</p>

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	discharge. Arguably, a more creative design would separate these intakes and avoid the proposed plan to expose the marine organisms in the dilution water to any contact with screening technology that may impact their survival.	
60.	Mitigation Analysis "Mitigation measures" as it is used in Section 13142.5(b) must be interpreted to mean "before the fact" mitigation to avoid the intake and mortality of marine life. The Revised Plan offers an "after the fact" mitigation which has clearly been struck down by the federal court for cooling water intakes. There is no distinction in the language of Porter-Cologne § 13142.5(b) that would distinguish other industrial uses of seawater from this holding in Riverkeeper II.	See response to comment 45.
61.	Revised Plan Quantification of Unavoidable Impacts to Marine Resources is Unresponsive to Regional Board Concerns. The 2004-2005 impingement sampling data was conducted by EPS in accordance with 316(b) Phase II regulations. These weekly sampling events were not considered to be the focus of the assessment because the majority of impingement impacts were associated with heat treatments. Further, the method of determining the daily biomass entrained associated with a flow of 304 MGD is not given in any version of the Revised Plan or accompanying attachments.	Quantification of unavoidable impacts is not necessary because Poseidon proposes to mitigate for all estimated impacts, without consideration to any site, design, or technology measures that will be implemented to minimize these impacts.
62.	The Revised Plan entrainment impacts assessment suffers the same flaws as the impingement assessment-lack of specificity. Regional Board staff noted that the Original Plan "does not clearly identify the supporting data or an explanation of underlying assumptions and calculations that were used to estimate proportional mortality values."	The Regional Board, in large part, relied on the Coastal Commission (and their independent expert) review and approval of the entrainment data and necessary mitigation.

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63.	Of particular concern is Poseidon's contention that the future survey will adjust the restoration plan to the extent that the lagoon habitat acreage is "higher or lower." This implies that Poseidon could possibly reduce the APF calculation and therefore decrease any mitigation efforts in response to a future survey and restoration plan that is not subject to Regional Board approval.	The Discharger no longer proposes to adjust the Restoration Plan based on a future survey of Agua Hedionda Lagoon. Such is not a feature of the revised Minimization Plan, rendering the comment moot. Although the Regional Board may consider a reduction in the productivity requirement if more current impingement monitoring results support this conclusion, the Board would not be making modifications to the APF or any part of the MLMP, as approved by the Coastal Commission.
64.	Similarly, Poseidon does not address Regional Board staffs concern that the Revised Plan does not outline "how much more severe impacts may be when populations are small." Poseidon's reply is both obtuse and unresponsive. Poseidon merely states that "fish species occurring in low numbers in the Poseidon study entrainment samples are ocean species, and conversely larval fish entrained in the highest number were lagoon species." The support for such a contention is lacking. Fish species occurring in lower numbers in entrainment samples are not necessarily ocean species. These fish, or some subpopulation of these fish, may very well be lagoon species. In either case, fish with smaller populations are likely to be highly affected by any amount of entrainment.	Comment noted.
65.	An Independent Baseline Study of the Agua Hedionda Lagoon Marine Environment is Required. Although Poseidon has submitted three different versions of the same study, it has yet to submit an independent baseline study of the marine system in Agua Hedionda Lagoon and the surrounding area. As mentioned above, Poseidon's Revised Plan is simply an adaptation of the EPS Phase II PIC Study conducted in 2004-2005.	Attachment 4 & 6, Chapter 3, of the March 27, 2009 Minimization Plan are intended to serve this purpose.

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4/2/2008 letter from San Diego County Water Authority		
66.	The San Diego County Water Authority encourages the San Diego Regional Water Quality Control Board (Regional Board) to approve the Carlsbad Desalination Project's Flow, Entrainment, and Impingement Minimization Plan - #R9-2006-0065, NPDES No. CA 0109223. In 2006, the Regional Board unanimously approved a discharge permit for the desalination facility.	Comment noted.
4/2/2008 letter from Metropolitan Water District		
67.	<p>The Metropolitan Water District of Southern California joins the San Diego County Water Authority in supporting the development of seawater desalination in Carlsbad as part of a diversified water portfolio for San Diego County.</p> <p>Metropolitan and the San Diego County Water Authority are statewide leaders in water conservation, recycling, and brackish groundwater desalination. However, these accomplishments need to be complemented with other regional and local water management actions, including seawater desalination, in order to manage future challenges associated with population growth, climate change impacts, increased uncertainties in the Bay-Delta, and risk of disruptions to imported supplies due to earthquakes. The Carlsbad project is a crucial first step in developing seawater desalination as a resource for securing the region's water supply reliability.</p>	Comments noted.
4/2/2008 letter from City of Coronado		
68.	The City of Coronado hopes the Regional Board will continue its mission of protecting San Diego's watershed and water	Comment noted.

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	quality by approving the Carlsbad Desalination Project for San Diego County's future health and economic prosperity.	
4/2/2008 letter from Assemblymember Martin Garrick, Assembly, California Legislature, 74th District		
69.	I am writing to request your support for the Carlsbad Desalination Plant (Order No.R9-2006-0065, NPDES No. CA0109223). This critical local water supply project is scheduled to be reviewed by the San Diego Regional Water Quality Control Board on Wednesday, April 9, 2008.	Comment noted.
4/7/2008 letter from California State Lands Commission		
70.	Poseidon should offer modifications that can be incorporated into the design of the project to minimize entrainment and impingement before proposing marine life restoration. All such design modifications proposed have been rendered infeasible by Poseidon based on cost; however, a true cost/benefit analysis has not been conducted utilizing value recommendations of the State and Federal fish and wildlife agencies, as the value recommendations have yet to be requested.	Comment noted. Please see Comment # 60.
71.	CSLC staff believes that it is essential that Poseidon's Flow Plan reflect the recommendations of the State and Federal fish and wildlife agencies concerning the adequacy and appropriateness of Poseidon's aquatic life impact calculations and the quantity, type, location and duration of marine life restoration proposed within the Flow Plan. CSLC staff supports the recommendation contained in the Regional Board's February 19, 2008 letter, Item 7, that Poseidon might benefit from convening a joint meeting with the resource agencies to discuss Poseidon's Flow Plan. A meeting with the resources agencies has been scheduled for May 1st and	This comment is no longer applicable. Please see Comment # 42.

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	2nd, and CSLC will be participating in this meeting.	
72.	While Poseidon provides calculations of the magnitude of the impacts to organisms in the Flow Plan dated March 6, 2008, Poseidon also wishes to base the mitigation plan on a financial cap. The final mitigation plan should be based solely on the magnitude of impacts to the organisms; as substantiated by the Trustee Agencies (USFWS, NOAA and CDFG) and agreed to by the Responsible Agencies.	This comment is no longer applicable as Poseidon is not requesting a financial cap
73.	The impacted environment is a saltwater lagoon with tidal influence and circulation from the Pacific Ocean. The proposed mitigation is for an inland saltwater marsh <i>with</i> tidal influence. Currently, Poseidon favors off-site mitigation (located 12.5 miles south) based on their efforts to solicit interest from property owners within the Agua Hedionda Lagoon. This off-site mitigation will not result in in-kind mitigation and is proposed at a 1.1: 1.0 ratio. The CSLC would prefer on-site (within the Aqua Hedionda Lagoon), in-kind mitigation, at a ratio which will compensate for the losses in time (2:1 minimum). If the ultimate mitigation is off site and not in-kind, then the mitigation ratio should compensate for the impacts both through time and space (Le., at a ratio greater than 2:1). Therefore, it is important that the project proponent exhaust on-site, in-kind mitigation opportunities prior to moving to an off-site plan.	Comment noted. Although not necessarily on-site, the Minimization Plan now provides preference to the mitigation alternatives proposed within the same region as the impacts. Mitigation acreage (or ratios) as set forth in the MLMP, have been supplemented by performance standards intended to ensure their adequacy.
74.	There <i>is</i> some concern that the method used to calculate the "replacement" habitat understates the environment needed to produce the organisms impacted by the desalination plant. This underestimation occurs both on the intake side, which appears to ignore the contribution of the watershed and the Pacific Ocean, and on the discharge side, with the impacts caused by increased salinity. We understand that the local Water Board has engaged the services of an independent	To clarify, at the time that this comment was submitted, review of impacts for the Regional Board were conducted solely by Regional Board staff. The March 27, 2009 Minimization Plan reflects mitigation acreage as required by the CCC and corrections to impingement that resulted from staff inquiries to Poseidon. Therefore the Regional Board believes this

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	expert to re-calculate these impacts. Once again, the final mitigation plan should be based on the magnitude of the impacts to the organisms, which may be ten times greater than estimated by Poseidon.	comment is no longer applicable. Poseidon did agree to pay for an independent expert review by Dr. Pete Raimondi, to assist the Regional Board in determining the appropriate impingement assessment approach and the adequacy of mitigation, but that occurred subsequent to the submittal of this comment. Public comment was received and accepted through April 8, 2009.
75.	Poseidon stated that it can reduce the velocity of the water flowing into the intake to below 0.5 fps (feet per second). Poseidon should be required to provide substantiation of the ability to operate at this flow rate.	See response to comment 50.
76.	CSLC staff agrees with Regional Water Board staff in its February 19,2008 request for information, Item 6b, that a one-time mitigation plan (particularly with many unknown components) does not appear to be adequate for the long-term impacts to resources that will be impacted. Poseidon's response is that the agencies should rely on a process and that it is Poseidon's intent "...to create habitat comparable to that in Agua Hedionda Lagoon." Because Poseidon has provided to the CSLC a list of proposed restoration locations based upon the results of a request for proposed solicitation by bidders with a bid-cap price, we do not believe that Poseidon is being specifically responsive to this issue.	The Regional Board has concluded that the MLMP contains sufficient specificity to ensure proper selection of necessary mitigation site(s), in lieu of a single proposed alternative. The Regional Board also concludes that the imposition of a productivity requirement, and necessary monitoring to determine compliance, will ensure that the proposed mitigation adequately and appropriately offsets recurring impacts from CDP operation.
1/19/2009 letter from Hubbs-Sea World Research Institute		
77.	Hubbs-SeaWorld Research Institute (HSWRI) supports acceptance of the measures proposed by Carlsbad Desalination Project that will ensure the continued viability of the Lagoon and the surrounding environs, and has no concerns that would prevent the Regional Board's approval	Comment noted.

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	of the Marine Life Mitigation Plan.	
1/19/2009 letter from Industrial Environmental Association		
78.	The IEA respectfully requests that the Regional Board approve this mitigation plan as submitted and allow the project to proceed to construction.	Comments noted.
1/19/2009 letter from Carlsbad Chamber of Commerce		
79.	The Carlsbad Chamber of Commerce endorses this project and requests that the Regional Board approve Poseidon's Marine Life Mitigation Plan.	Comments noted.
1/19/2009 letter from the City of Carlsbad		
80.	It has been ten years since we first launched this projected and the time has come for the Regional Water Quality Control Board to complete its approval of the Carlsbad Desalination Project. Please do so at your February 11 hearing and allow our region to move forward in creating a drought-proof, reliable local water supply.	Comments noted.
1/19/2009 letter from the San Diego County Building & Construction Trades Council, AFL-CIO		
81.	The San Diego County Building and Construction Trades Council request the Regional Board's support for approving Poseidon' Carlsbad Desalination Project Marine Life Mitigation Plan. The San Diego County Building and Construction Trades Council is proud to be a part of the team that will be bringing a much needed, new water supply to San Diego. We ask you to consider the importance of this project to the region and help us to move forward to construction by approving the Marine Life Mitigation Plan.	Comments noted.

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1/21/2009 letter from Sweetwater Authority		
82.	Sweetwater has carefully reviewed Poseidon's project, including the Marine Life Mitigation Plan, to ensure that Poseidon has done its due diligence in mitigating for all potential impacts. The mitigation plan was conceived through the cooperation of multiple agencies, including the Regional Water Quality Control Board, and has received approval from all other participating agencies. We are satisfied that this plan meets the standards of both the Water Code and the Coastal Act and fulfills the conditions your agency enacted when you approved the Flow, Entrainment and Impingement Minimization Plan in April 2008. With over ten years of analysis, review and revisions, this project is ready to move on to the construction stage. The Sweetwater Authority Governing Board asks the Regional Board to make the right decision and approve the Marine Life Mitigation Plan for the Carlsbad Desalination Project.	Comments noted.
1/21/2009 letter from San Diego County Taxpayers Association		
83.	This project will generate jobs and critical revenues for local governments including \$2.4 million in property tax per year for the next 30 years, as well as \$10.4 million in sales tax during construction, and \$2.9 million per year thereafter. At a time when ratepayers are facing mandatory conservation and higher water rates, the SDCTA requests your immediate approval of the project's Marine Life Mitigation Plan.	Comments noted.
1/21/2009 letter from The Flower Fields in Carlsbad, CA		
84.	A reliable and affordable water supply is crucial to the survival of The Flower Fields and hundreds of small farming operations in San Diego. We strongly urge the Board to approve the Marine Life Mitigation Plan for the Carlsbad Desalination Project so that we can move forward to	Comments noted.

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	construction on this important new local water supply.	
1/21/2009 letter from the Santa Fe Irrigation District		
85.	The Carlsbad Desalination Project has undergone a decade of regulatory review and has long since proven its environmental credentials. We are confident that the MLMP currently under review fulfills all of the conditions of the discharge permit the Board issued in 2006. We believe that this agreement provides our region with the most dependable, cost-effective, and environmentally responsible water source to augment our imported supplies. On behalf of my Board of Directors and our thousands of customers, we urge the Board to approve the Marine Life Mitigation Plan.	Comments noted.
1/21/2009 letter from Olivenhain Municipal Water District		
86.	Olivenhain has thoroughly reviewed the Carlsbad Desalination Project's Marine Life Mitigation Plan and we are confident in giving it our endorsement. The plan ensures that Poseidon will mitigate extensively for any impingement and entrainment impacts in the lagoon. We believe that this plan, which has been broadly vetted among the appropriate State regulators, is well conceived and should be approved at your next meeting.	Comments noted.
1/21/2009 letter from Councilmember Benjamin Hueso, San Diego City Council President		
87.	Poseidon should be allowed to move forward with the process that was started by the Regional Board so that it can take the steps contained in the Plan, and so that our respective staff, in accordance with the continuing interagency process, can determine at which of the mitigation site locations provided by the Plan the actual mitigation should occur, in accordance with the Plan's strict performance-based goals and success criteria. Your final approval of the Plan on February 11,2009 will allow an	Comments noted.

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	environmentally sound project, that has been in the works for ten years, to commence construction. I hope you will act swiftly. Thank you for your consideration of my support for the Carlsbad Desalination Project and Poseidon's Marine Life Mitigation Plan.	
1/21/2009 letter from Martin Garrick, Assemblymember, District 74, Assembly California Legislature		
88.	Collectively, the City of Carlsbad, the State Lands Commission, the Coastal Commission, and the Regional Board have done their due diligence, analyzing the project extensively and concluding there are no significant, unavoidable impacts for both the construction and on-going operation of the plant. I feel strongly that this project will have no detrimental effects on the coastline or marine habitat surrounding the plant and I urge your approval of the Marine Life Mitigation Plan.	Comments noted.
1/21/2009 letter from Christine Kehoe, Senator, District 39, California State Senate		
89.	The Carlsbad Desalination Project offers a local solution to our long term water supply needs that will reduce the region's dependence on imported water especially during this period of extended drought. I urge your favorable consideration of this project.	Comments noted.
1/21/2009 letter from Don Christiansen		
90.	I am a resident of Carlsbad and I have been following the progress of the Carlsbad Desalination Project for many years. As it now stands, the project has gained every endorsement and approval it needs to be built with the exception of your Board's sign off of the Marine Life Mitigation Plan. It has been a long, slow road to get this point and I think the Carlsbad Desalination Project has done everything it needs to do to gain your approval. I appreciate your time and attention to my letter.	Comments noted.

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1/21/2009 letter from Vallecitos Water District		
91.	On behalf of the Vallecitos Water District (Vallecitos) and our Board of Directors, I am pleased to offer our endorsement of the Carlsbad Desalination Project and its Marine Life Mitigation Plan. With the recent cutbacks in San Diego's imported water supplies, Vallecitos is eager to see this project progress towards construction as soon as possible. We urge the Regional Water Quality Control Board to accept and approve Poseidon's Marine Life Mitigation Plan.	Comments noted.
1/21/2009 letter from Agua Hedionda Lagoon Foundation		
92.	The Agua Hedionda Lagoon Foundation requests that the Regional Water Quality Control Board approve the Marine Life Mitigation Plan (MLMP) for the Carlsbad Desalination Project. Poseidon's Marine Life Mitigation Plan extends the benefits of a clean watershed and healthy ecosystem to wetlands in other parts of Southern California and we urge you to approve the plan without delay.	Comments noted.
1/21/2009 letter from San Diego County Farm Bureau		
93.	It is imperative that this region develop new, drought-tolerant local sources that can supplement our diminishing imported water supplies. The Carlsbad Desalination Project is a viable and timely option for our county. Any other options would take years to develop, but our need to diversify San Diego County's water supply is urgent. On behalf of San Diego's 5,000 farmers, I urge the Regional Board to approve Poseidon's Marine Life Mitigation Plan and allow the Carlsbad Desalination Project to move forward.	Comments noted.

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1/21/2009 letter from San Diego North Economic Development Council		
94.	This desalination project will employ the most energy-efficient and environmentally-sound principles in its construction and operation. Poseidon's stewardship of the Agua Hedionda Lagoon, dedication of multiple acres for public use on the lagoon, and commitment to restore wetland habitat in other Southern California sites demonstrates the care and consideration this company has displayed towards our marine ecosystem. The mitigation plan submitted to you by Poseidon Resources has been reviewed and approved by the numerous State agencies and found to meet all the requirements of those entities. On behalf of the Council and our members, I offer our full support of the Carlsbad Desalination Project and ask you to approve its Marine Life Mitigation Plan.	Comments noted.
1/22/2009 letter from Mark Wyland, Senator, District 38, California State Senate		
95.	This project has been extensively analyzed by the City of Carlsbad, as well as a wide range of community, environmental, scientific, business and regulatory organizations. The evidence demonstrates that it will have no detrimental effects on the coastline or marine habitat surrounding the plant. In fact, Poseidon Resources has become a vital part of the lagoon's long-term health by agreeing to provide ongoing dredging and maintenance when the Encina Power Station is decommissioned. The project's Flow, Entrainment and Impingement Minimization Plan can assure the Board that the project will be operated using the best possible site, design and technology. The project's marine life mitigation plan, which includes 55 acres of wetlands restoration, will be more than adequate for its purposes. I believe that elected officials have an obligation to advance projects that are in the best interest of their	Comments noted.

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	constituents. On behalf of the residents of District 38, I urge you to support the Carlsbad Desalination Project's Marine Life Mitigation Plan.	
1/22/2009 letter from Robert Simmons, Counselor-at-Law		
96.	<p>It is clear to me that this Poseidon Mitigation Plan fully complies with the controlling section of the California Water code (#13,142.5(B)). The 55 acre mitigation reach meets and exceeds the level of specificity required by the Regional Board. In closing, I urge the Board to be mindful of the following two facts:</p> <ol style="list-style-type: none"> 1. Besides protecting the marine life in coastal waters, the Regional Boards are also tasked with promoting the "beneficial uses" of such waters. Surely, providing potable water to 110,000 human families more than offsets the speculative marine injury that may remain after the planned mitigation. 2. The two environmental groups that oppose the Plan's approval - Surfrider Foundation and CoastKeeper - have opposed the Poseidon project since its very inception. They oppose all coastal desalination and are out of step with the vast majority of environmentalists, who believe that the threat of severe drought injury, to the land environment, is far worse than the speculative threat posed by Poseidon to the marine environment. <p>I urge you to approve the Poseidon Plan as submitted, without delay.</p>	Comments noted.
1/23/2009 letter from San Diego Regional Chamber of Commerce		
97.	The Carlsbad desalination facility was designed to minimize impacts to marine life found in the Agua Hedionda Lagoon	Comments noted.

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	<p>and surrounding coastal areas. Poseidon Resources has also created a substantive, comprehensive plan to ensure it mitigates fully for the impacts that are unavoidable. This plan includes ongoing lagoon maintenance and restoration of up to 55.4 acres of wetland in Southern California.</p> <p>The Chamber commends Poseidon Resource's efforts to make this project environmentally benign, while reducing our region's dependence on imported water. The MLMP clearly meets the requirements of the discharge permit you have already issued and deserves the Board's approval.</p>	
1/23/2009 letter from Valley Center Water District		
98.	<p>The new Marine Life Mitigation Plan (MLMP) provides further evidence that Poseidon Resources takes its responsibilities to our marine environment seriously and has made numerous binding commitments to that effect.</p> <p>The interagency approval process of the MLMP, which involved eight state agencies including Regional Board staff, Coastal Commission and State Lands Commission staff and the Department of Fish and Game, culminated in approval by the Coastal Commission in Aug. 2008 of a performance-based MLMP with 11 pre-approved candidate mitigation sites. It's important to note that the Regional Board staff participated in the review of the mitigation plan but never expressed concerns or objected to the final plan that was approved by the Coastal Commission.</p> <p>Valley Center Municipal Water District understands that seawater desalination is a key part of the solution to the region's long-term water reliability needs. The entire San Diego region is depending on this new water supply to lessen the demand on imported water. We find no reason to delay action any longer and we strongly urge the Board to approve</p>	<p>Coordination among participating agencies for the amendment of the Plan as required by Section 13225 of the California Water Code was a condition imposed by the Regional Board on Poseidon with the Regional Board's approval of Resolution No. R9-2008-0039. While the Marine Life Mitigation Plan submitted to and approved by the Coastal Commission satisfied the Coastal Commission requirements, by doing so it did not necessarily satisfy the conditions required by the Regional Board because the Regional Board must independently evaluate the information submitted for compliance with all applicable sections of the California Water Code. Based on this independent review, the Regional Board has determined that the Minimization Plan, which incorporates the MLMP, satisfies all applicable requirements.</p>

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	this project.	
1/23/2009 letter from Julianne Nygaard, Council Member, City of Carlsbad		
99.	<p>This plan fully mitigates for the minimal marine impacts of the Desalination Project anticipated to occur after the Power Station is decommissioned.</p> <p>After ten years of planning and study, I firmly believe the Carlsbad desalination plant is an environmentally responsible solution to the regional water reliability needs. The Carlsbad Desalination Project is not only a water supply, but a significant water storage environmental enhancement, preservation, and restoration project. Without any hesitation, this project deserves your full support.</p>	<p>It should be noted that the NPDES permit adopted by the Regional Board does not cover the situation when Encina Power Station (EPS) is no longer operating and Poseidon is a stand-alone facility. The permit covers co-location operation for CDP benefit, which can occur under two conditions: (1) when EPS is temporarily shut down or (2) when EPS is operating but its discharge volume is not sufficient to meet CDP's intake requirements. A new report of waste discharge in application for an NPDES permit must be submitted by Poseidon to cover the situation where EPS is no longer operating and no longer needs to draw intake water from Agua Hedionda Lagoon for power plant operations. Additional requirements for minimizing the intake and mortality of all forms of marine life may be required of Poseidon under this situation pursuant to California Water Code Section 13142.5(b).</p>
1/26/2009 letter from San Diego County Water Authority		
100.	<p>The San Diego County Water Authority's recent drought response planning contemplates the Carlsbad Desalination Project delivering water at full capacity to the region in early 2012. The Carlsbad Desalination Project is essential to the Water Authority's ability to achieve its water diversification goals. The Water Authority urges all members of the Regional Water Quality Control Board to approve the Carlsbad Desalination Project's final conditions.</p>	<p>Comments noted.</p>

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4/2/2009 Letter from Poseidon Resources		
101.	<p>The Marine Life Mitigation Plan (MLMP) represents the culmination of a comprehensive, interagency planning process involving extensive scientific study and public involvement and ensures that potential entrainment and impingement impacts to marine resources from the Project will be fully mitigated in compliance with Resolution R9-2008-0039, Order No. R9-2006-0065, and Water Code Section 13142.5(b). Specifically, the MLMP will:</p> <ul style="list-style-type: none"> • 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. <p>(Comments from Latham & Watkins LLP January 26, 2009</p>	Comments noted.

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	Comment Letter, pgs. 3, 12-20 and Latham & Watkins LLP April 2, 2009 Comment Letter, pgs. 18-20)	
102.	Poseidon's submittal of the MLMP was not untimely. (Comments from Latham & Watkins LLP January 26, 2009 Comment Letter, pgs. 37-38)	This comment is no longer applicable as Order R9-2009-0038 supersedes Resolution R9-2008-0039.
103.	The Minimization Plan properly relies upon data collected during the 2004-2005 Impingement Mortality and Entrainment Characterization Study conducted by Tenera Consultants to assess the entrainment and impingement impacts associated with Encina's intake. (Comments from Latham & Watkins LLP January 26, 2009 Comment Letter, pgs. 20-23)	With the submittal of the March 27, 2009 Minimization Plan, the Regional Board concurs with this statement.
104.	On April 30, 2008, Poseidon submitted a calculation indicating that the Project's standalone impingement would be approximately 1.57 kg per day, a de minimis value. When operating in co-located mode, any impingement associated with the Project would naturally be even less. Based on requests from Regional Board staff, Poseidon submitted Attachment 5 to the Minimization Plan which presents several different ways to account for the direct relationship between impingement and flow in the impingement estimates. Depending on their treatment of the outlier sampling events and the extent to which they account for the relationship between flow and impingement, these approaches produce a range of possible impingement estimations of between 1.57 to 7.16 kg per day. Subsequent scientific analysis of the outlier events completed by experts for Poseidon conclude that the estimate values toward the lower end of the range more reasonably anticipate	The Regional Board considered multiple approaches to estimating impingement associated with the CDP's projected operations under co-located conditions. The estimates derived from the multiple approaches range from 1.56kg/day, using a regression analysis, to 7.16 kg/day of fish impinged, which assumes no reduction from EPS's impingement. The Discharger's experts maintain that 1.56 kg/day is an appropriate estimate and that the estimate of 4.7 kg/day, an estimate which the staff supports, overstates the projected impingement associated with CDP's stand-alone operations. The Discharger and the Regional Board staff disagree as to whether, and to what extent, it is appropriate to exclude two days of very high impingement when projecting impingement. The Discharger's experts refer to the data from the two very high impingement days as "outliers." Staff disagrees that the Discharger's experts have adequately justified its characterization of the data as "outliers" and

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	<p>the Project's operations. In any event, Poseidon considers all of the various, reasonable impingement estimation approaches to result in impingement estimations that are de minimis.</p> <p>(Comments from Latham & Watkins LLP January 26, 2009 Comment Letter, pgs. 23-24; Latham & Watkins LLP April 2, 2009 Comment Letter, pgs. 10-12; Minimization Plan, Attachments 5, 7 and 9)</p>	<p>disagrees with the Discharger's proposed exclusion of the data from the estimate of future impacts. The Regional Board finds that it is unnecessary to resolve these disputes. The Regional Board finds that 4.7 kg/day, which assumes 100% probability of the two very high impingement days, is a reasonable, conservative estimate of impingement associated with CDP's projected operations under co-located conditions and notes that the Discharger has agreed to meet a fish productivity standard of 1715.5 kg/year, derived from the estimate of 4.7 kg/day, in the mitigation wetlands.</p>
105.	<p>The CDP's projected impingement when operating in stand-alone mode ranges from 1.57 to 7.1 kilograms per day ("kg/day") based on applying a linear regression analysis to EPS's 2004-05 impingement sampling data. The 2004-2005 EPS sampling data includes 52 samples events. During two of the sample events, January 12 and February 23, the recorded impingement was observed to be relatively higher than on the other fifty days. Importantly, these two sample days immediately follow storm events. Subsequent analysis completed by Drs. Chang and Jenkins, experts for Poseidon, indicate that the storm events preceding the January 12 and February 23 samples have a low probability of recurrence, each likely to occur no more than once every quarter century. The likelihood that both such events will occur in any given year, as they did during the 2004-2005 sample year, is even more remote.</p> <p>Because the rains preceding the two outlier collection events can be expected to occur less than once every 20 years (i.e., less than 5%), the weight of the outliers should be discounted accordingly. When the weighted-average flow-proportioned approach (3-B) incorporates an outlier probability value of</p>	<p>To clarify not all values included in the range of 1.57 to 7.16 are based on applying a linear regression analysis.</p> <p>Regional Board staff disagree with the Discharger's claim that the two high impingement results were a result of storm events and suggested alternative causes.</p> <p>Regardless, the Regional Board finds that it is unnecessary to resolve these disputes. The Regional Board finds that 4.7 kg/day, which assumes 100% probability of the two very high impingement days, is a reasonable, conservative estimate of impingement associated with CDP's projected operations under co-located conditions and notes that the Discharger has agreed to meet a fish productivity standard of 1715.5 kg/year, derived from the estimate of 4.7 kg/day, in the mitigation wetlands.</p>

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	<p>less than 5%, the approach calculates an impingement estimate of less than 2.24 kg/day, with 2.24 providing a reasonable upper bound. This value provides a reasonable approximation of the CDP's potential impingement.</p> <p>(Comments from Latham & Watkins LLP January 26, 2009 Comment Letter, pg. 23, fn. 45; Latham & Watkins LLP April 2, 2009 Comment Letter, pgs. 10-11, Appendix B, Tab 3; Minimization Plan, Attachments 5 and 9)</p>	
106.	<p>EPS's daily water requirements are approximately twice those projected for the Project. To satisfy EPS'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 standalone mode, therefore, it will be able to operate the existing intake facilities at a reduced flow rate and use fewer pumps to collect the water. 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.'" Moreover, 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.</p> <p>(Comments from Latham & Watkins LLP January 26, 2009 Comment Letter, pgs. 24-26)</p>	<p>The EPS NPDES permit contains a permitted discharge flow rate of 863.5 MGD. The EPS intake flow rate needs may decrease over time due to other power generating sources within the San Diego Region and elsewhere. Thus, the reduced flow rate from 863.5 to 304 MGD would result in an overall reduction of the impacts caused by impingement and entrainment of organisms at the intake structure. When the intake structure is operated for the benefit of the CDP during prolonged temporary shutdown, the Regional Board may require Poseidon to implement additional feasible design and technology measures to reduce intake impacts. The Regional Board, however, has not relied specifically on a particular intake velocity in establishing its findings and requirements as contained in the Tentative Order. When CDP proposes to operate as a stand-alone facility, with EPS generating units permanently shut down, a new analysis will be required to ensure compliance with Water Code section 13142.5(b).</p> <p>See also response to comment 50.</p>

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107.	<p>Using the Empirical Transport Model (“ETM”) and the results of the June 2004 to June 2005 entrainment survey, Tenera Environmental concluded that the Project’s entrainment impacts would result in an Area of Production Foregone (“APF”) of 36.8 acres. The calculation of 36.8 APF was an extremely conservative estimation and was based on four equally conservative assumptions:</p> <ul style="list-style-type: none"> (1) Assumes 100% mortality of all marine organisms entering the intake; (2) Assumes 100% survival of all fish larvae in their natural environment; (3) Assumes species are evenly distributed throughout the entire depth and volume of the water body; and (4) Assumes the entire habitat from which the entrained fish larvae may have originated is destroyed. <p>The entrainment model also did not account for the significant environmental benefits that extend well beyond compensating for the entrainment impacts.</p> <p>Subsequent to the March 2008 submission of the 36.8 APF calculation and supporting documents to the Regional Board, Dr. Pete Raimondi reviewed the entrainment study at the request of the Coastal Commission. As a result of this review, two additional layers of resource protection were added to the Project’s mitigation obligation. First, 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. 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. 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</p>	Comment noted.

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	<p>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—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.</p> <p>When these adjustments are combined with all of the conservative assumptions that Tenera had already incorporated in arriving at the 36.8-acre APF figure, the entrainment model generates a final APF of 55.4 acres that ensures resource protection and promotes excess mitigation.</p> <p>(Comments from Latham & Watkins LLP January 26, 2009 Comment Letter, pgs. 27-31)</p>	
108.	<p>On February 19, 2008, Regional Board staff sent Poseidon a letter identifying concerns with the June 29, 2007 version of the Minimization Plan.</p> <p>(Comments from Latham & Watkins LLP January 26, 2009 Comment Letter, pgs. 31-34)</p>	Comment noted.
109.	<p>The Regional Board directed Poseidon to resolve the conditions of the April Resolution through an interagency review and approval process. As a result, 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. Such interagency actions included the May 1 and 2 interagency meeting regarding the MLMP, the Scientific Advisory Panel's review of the MLMP at the request of the Coastal</p>	Comment noted.

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	<p>Commission, the submission of various drafts of the MLMP to various interested agencies by Coastal Commission staff, Coastal Commission and State Lands Commission review and approval of the MLMP, and finalization of MLMP language by Coastal Commission staff</p> <p>(Comments from Latham & Watkins LLP January 26, 2009 Comment Letter, pgs. 31-34)</p>	
110.	<p>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.</p> <p>(Comments from Latham & Watkins LLP January 26, 2009 Comment Letter, pgs. 31-34)</p>	<p>The Regional Board concurs that the data are adequate for estimating impingement and entrainment during 2004-2005, for the purpose of estimating impacts from CDP co-located operation.</p>
111.	<p>Although Project-related impingement and entrainment are expected to be minimal and will already be reduced by the site, design and technology elements, Poseidon has committed to mitigation under the terms of the MLMP to fully offset potential entrainment and impingement.</p> <p>(Comments from Latham & Watkins LLP January 26, 2009 Comment Letter, pgs. 31-34)</p>	<p>Comment noted.</p>
112.	<p>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</p>	<p>Comment noted.</p>

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	<p>of the Regional Board, and the Executive Director of the Coastal Commission.</p> <p>(Comments from Latham & Watkins LLP January 26, 2009 Comment Letter, pgs. 33-34)</p>	
113.	<p>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.” 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.</p> <p>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</p>	<p>The Regional Board concludes that the criteria set forth in the MLMP will favor appropriate selection of the mitigation site(s).</p>

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	<p>performance criteria as a strength of an appropriate mitigation plan.</p> <p>(Comments from Latham & Watkins LLP January 26, 2009 Comment Letter, pgs. 33-34)</p>	
114.	<p>Resolution No. R9-2008-0039 required Poseidon to address items in staff's February 19, 2008 letter (many of the items had been mooted only by the March 6, 2008 version of the Plan), and the following additional concerns:</p> <p>a) identification of impacts from impingement and entrainment;</p> <p>b) adequate monitoring data to determine the impacts from impingement and entrainment;</p> <p>c) coordination among participating agencies for the amendment of the Plan as required by Section 13225 of the California Water Code;</p> <p>d) adequacy of mitigation; and</p> <p>e) commitment to fully implement the amendment to the Plan.</p> <p>(Comments from Latham & Watkins LLP January 26, 2009 Comment Letter, pgs. 34-35)</p>	Comment noted.
1/30/2009 letter from California Environmental Protection Agency		
115.	<p>This letter is to urge you to conclude that the Marine Life Mitigation Plan for the Poseidon Carlsbad Desalination Project satisfies the conditions of the Board's Resolution No. R92008- 0039. Our view is that a process-based approach with criteria for the evaluation of mitigation site options satisfies the objectives of the Resolution.</p> <p>The California Coastal Commission recently approved the Mitigation Plan by an overwhelming vote of eleven to one. The Commission approved the process-based approach with</p>	<p>While the Marine Life Mitigation Plan submitted to and approved by the Coastal Commission satisfied the Coastal Commission requirements, by doing so it did not necessarily satisfy the conditions required by the Regional Board because the Regional Board must independently evaluate the information submitted for compliance with all applicable sections of the California Water Code. Based on this independent review, the Regional Board has determined that the Minimization Plan, which incorporates the MLMP, satisfies all</p>

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	<p>criteria for the evaluation of mitigation site options. Key agencies that have expertise in marine life mitigation, including the Department of Fish and Game, were engaged in the development of the Plan. Other interested federal, state, and local agencies were also engaged in the development of the Plan, including the Department of Transportation and the State Lands Commission.</p>	<p>applicable requirements.</p>
2/2/2009 letter from California Department of Food & Agriculture		
<p>116.</p>	<p>I am writing to express my enthusiastic support for the Poseidon Desalination Project proposal. As you know, California is in the third year of an extreme drought and the clear evidence of snow pack and accumulated rainfall totals at this time shows that the situation is worsening. The historic low levels of water in the state's major reservoirs are already leading to dramatic cutbacks in water deliveries and alarming predictions of further water rationing.</p>	<p>Comments noted.</p>
2/2/2009 letter from Governor Arnold Schwarzenegger, State of California		
<p>117.</p>	<p>I am writing to urge you to approve the Marine Life Mitigation Plan for the Carlsbad Desalination Project at your February 11 meeting. Desalination must be part of a diverse approach to improving water supply, especially as California confronts what may be the worst drought in our state's modern history. Ignoring desalination as part of a region's water supply portfolio would ill serve both the region and the state.</p> <p>As the Board evaluates the Carlsbad Desalination. Project's Marine Life Mitigation Plan, I urge you to consider the critical role desalination plays in ensuring water supply reliability for San Diego and for the state.</p>	<p>Comments noted.</p>

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2/2/2009 letter from California Natural Resources Agency		
118.	<p>I write in support of the Poseidon Carlsbad Desalination Project and of the sufficiency of Poseidon's Marine Life Mitigation Plan (MLMP), a critical component to addressing the Board's prior conditional approval in Resolution No. R9-2008-0039.</p> <p>The Poseidon Carlsbad Desalination Project is an important infrastructure project and I urge you to determine that the MLMP satisfies sufficiently the conditions that the Regional Board established in Resolution No. R9-2008-0039.</p>	Comments noted.
2/2/2009 letter from California Department of Fish and Game		
119.	<p>The Department of Fish and Game (Department) offers the following information in support of the Poseidon Carlsbad Desalination Project (Project) and the associated Marine Life Mitigation Plan (MLMP). Department staff was actively involved in the review of the Project and MLMP. In addition,</p> <p>Department staff was involved with the analysis and determination of impingement and entrainment impacts due to operations of the desalination plant and collaborated with the California Coastal Commission (Coastal Commission), the State Lands Commission, and other state agencies on the development of the MLMP. Also, we have been in contact with Project representatives in the context of discussing potential wetland mitigation sites.</p> <p>The Department agrees that the mitigation measures the Coastal Commission determined to be appropriate are adequate to mitigate the impacts of the project. The Department supports the Coastal Commission's procedures for determining the mitigation for these impacts in addition to the sound scientific methodology that was used.</p>	Comments noted. While the Marine Life Mitigation Plan submitted to and approved by the Coastal Commission may have satisfied the Coastal Commission requirements, it does not necessarily satisfy the conditions required by the Regional Board. The Regional Board must independently evaluate the information submitted to the Regional Board for compliance with all applicable sections of the California Water Code.

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2/3/2009 letter from Assemblymember Mary Salas, Assembly, California Legislature, 79th District		
120.	<p>This letter is to inform you of my support for the Carlsbad Desalination Plant and to request your approval of Poseidon's Marine Life Mitigation Plan.</p> <p>This project has gone through rigorous testing and public scrutiny to ensure that it will be environmentally friendly and efficiently operated. The project developers have made every effort to comply with state and federal environmental regulations and have long since proved their project will not harm the Agua Hedionda Lagoon or ocean. In fact, their proposed mitigation measures will restore more than 55 acres of wetlands habitat and will provide for the annual maintenance of the lagoon.</p>	Comments noted.
2/5/2009 letter from Sierra Club		
121.	<p>In reviewing the MLMP we find that it fails to apply an ecosystems based approach in assessing and mitigating the impingement and entrainment the impacts of the project.</p> <p>The MLMP uses a limited data base that sampled the source water that would be extracted by the proposed desalination plant. It should be noted that the marine life in this source water has been subjected to impingement and entrainment stresses by the Encina Power Station since 1954 when the plant first came on line.</p>	<p>An ecosystem approach is not entirely applicable to this case because the affected ecosystem is not wholly removed (as is generally done when evaluating compensatory mitigation for impacts of fill in a CWA Section 401 certification). Rather, specific components of that ecosystem are being altered due to impingement and entrainment. Therefore, a good mitigation project would seek to offset the specific alterations from the proposed impacts. That having been said, Chapter 5 of the Minimization Plan does give consideration to the ecosystems affected (Table 5.7) and Chapter 6 does attempt to provide compensatory mitigation in terms of the ecosystems affected (i.e. mudflat/tidal channel, and open water).</p> <p>Existing conditions due to the operation of EPS are appropriate to consider as part of the environmental baseline, particularly while the CDP is in co-located</p>

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		operations.
2/6/2009 letter from Mayor Jerry Sanders		
122.	<p>The Carlsbad Desalination Plant's Marine Life Mitigation Plan has now been approved by the California Coastal Commission and the State Lands Commission. The plan, which you are now being asked to approve, is a byproduct of the permit you issued the project back in 2006, Per the Board's April 9, 2008 resolution, this plan was subject to a lengthy interagency review process to ensure that it met all the requirements of the discharge permit you originally issued in 2006. There is no doubt that the plan and its components are fully compliant with your April resolution.</p> <p>I urge your support for the Marine Life Mitigation Plan. You can approve the plan with confidence knowing that water quality standards and the coastal marine environment are fully protected.</p>	Comments noted.
2/9/2009 e-mail from Sierra Club		
S1	<p>The MLMP does not address the significance of connectivity. The MLMP proposes to seek out a site someplace in the SoCal Bight, approximately 450 km from the border to Pt Conception. The MLMP assumes that the local genetic populations of larvae including the benthic invertebrates are the same throughout this coastal region. But the article on</p>	<p>The Regional Board concludes that the criteria set forth in the MLMP will favor appropriate selection of the mitigation site(s).</p> <p>Although not necessarily on-site, the Minimization Plan</p>

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	page 446 states that this long held concept that the demographics of the larval pool is open over hundreds to thousands of kilometers is not longer valid. Many studies over the past decade have contradicted this notion. In fact there is a continuum of larval dispersal from closed locations to completely open. Therefore, without detailed larval dispersal information of a local reference area (not the coastal and lagoon zone impacted by the impingement and entrainment stresses from the Encina Power Station), how can the proposed MLMP mitigate the impacts?	now provides preference to the mitigation alternatives proposed within the same region as the impacts.
S2	The article reinforces the need to take an ecosystems-based approach to develop a mitigation plan. I have doubts that it is possible given the time and resources needed to carry this out.	See Oral Response No. 17
2/10/2009 letter from Coast Law Group		
123.	The record on the CDP contains a substantial number of documents previously submitted by the Environmental Groups detailing the failure of the Regional Board to appropriately consider and apply Porter-Cologne section 13142.5 to the COP. To no avail, we have repeatedly sought to have the Board and Poseidon consider the requirement to minimize the "intake" of marine life, yet Poseidon has instead succeeded in replacing this correct standard with a requirement to minimize marine life "impacts."	See response to Comment 45.
124.	Poseidon has expressed concern that the February 11, 2009 hearing should not be an adjudicative hearing, and if it is, only the Regional Board and Poseidon should be considered designated parties." (Supporting Document No. 28). The Environmental Groups have reviewed the Regional Board's	The procedures for consideration of the Minimization Plans were addressed in a letter from Regional Board counsel to Latham and Watkins on January 29, 2009.

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	<p>response to Poseidon's procedural objections (Supporting Document No. 42), and generally agree with the contents thereof.</p> <p>In response, the Environmental Groups propose either (a) we be afforded the same procedural safeguards as Poseidon with respect to submission of evidence and cross examination of witnesses, or (b) the matter be postponed and a pre-hearing conference set for resolution of designated party requests and establishment of procedures for a future hearing.</p>	
125.	<p>In its response to the Board Staff's notice of hearing and Executive Officer's Report, Poseidon expresses discomfort with the notion that the Regional Board would require identification of a specific site or sites where the proposed compensatory mitigation for the COP will actually take place.</p> <p>The Environmental Groups support the Board Staff's position that while it may have been appropriate to consider a multi-location MLMP at an earlier point in the permitting process, it is not inconsistent to require actual selection of a site, <i>or sites</i>, as a prerequisite to final Flow Plan approval. At no point in the record, including the volumes of material submitted and cited by Poseidon, does the Board or its staff appear to limit Poseidon from selecting multiple sites as alleged.</p> <p>The Environmental Groups agree with the proposition that it would be improper to approve Poseidon's Flow Plan without the selection of the site or sites where mitigation will take place. And while this does not mean we have abandoned our position that compensatory mitigation is illegal in the first instance, at the very least, the Board and the public should be able to critically assess the location(s) where the mitigation project will take place.</p>	The Regional Board concludes that the criteria set forth in the MLMP will favor appropriate selection of the mitigation site(s).

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126.	<p>In ongoing litigation, both the Coastal Commission and Poseidon are emphatic that the Regional Board is the sole agency with discretion to assess compliance with Porter Cologne 13142.5. (See e.g. Coastal Act section 30412, which Poseidon claims precluded the Commission from taking any action inconsistent with a future action by the Regional Board). Poseidon has taken this position in numerous letters and reports to the Coastal Commission, and as noted above, utilized this argument to secure conditional approvals of the MLMP from the Coastal Commission and State Lands Commission.</p> <p>Amazingly, now Poseidon argues against any substantive review of the Flow Plan, but rather, encourages the Regional Board to rely on the Coastal Commission's approval of the MLMP under the Coastal Act. (See Supporting Document 32, Latham and Watkins comment letter on MLMP, dated January 26, 2008).</p>	This comment is no longer applicable as Poseidon has submitted a revised Minimization Plan that the Board has independently determined complies with Section 13142.5.
127.	<p>At virtually every stage of COP review by staff of the Coastal Commission, State Lands Commission, and the Regional Board, significant legal and practical flaws have been identified.</p> <p>There is no credible reason to believe staff from all three agencies have ulterior motives, or are doing anything more than their prescribed jobs. The Regional Board should draw a hard line at this point, which with the exception of litigation, is one of the last opportunities to ensure the COP will even be plausibly legal. To require anything less than specificity in the selection of mitigation sites and performance criteria to ensure full compensation for production foregone due to entrainment impacts would be a travesty to the coast, and a blemish on the record of the Regional Board.</p>	Comment noted.

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2/25/2009 letter from Assembly California Legislature		
128.	<p>The SDCWA adopted an Urban Water Management Plan that identifies desalination as a critical component of its plan to diversify local supplies and reduce the burden on imported sources. The Carlsbad facility is integrally linked to state and regional efforts to supplement existing water supplies and is a critical component of San Diego County's future health and economic prosperity.</p> <p>The project has undergone close to ten years of planning and research to ensure that it is an environmentally responsible solution to the region's water needs. The City of Carlsbad certified the environmental document in 2006, concluding that there are no significant impacts for both the construction and on-going operation of the plant related to thirteen different areas studied, including marine impacts.</p>	Comments noted.
3/30/2009 letter from Robert McLean		
S3	The current permit would allow the intake and mortality of more marine life than is currently being destroyed by the Encina Power Station's once-through cooling (OTC) system;	As long as Encina Power Station is generating power and discharging more than 304 MGD, operation of the desalination facility is not expected to increase the intake and mortality of marine life beyond current levels at the Encina intake.
S4	The current design capacity of the Poseidon-Carlsbad desalination facility would facilitate the continued intake and mortality of marine life beyond the date when the Encina Power Station either upgrades its generators and abandons the OTC system, or ceases operation;	The proposed Minimization Plan avoids and/or compensates for intake and mortality of the CDP when operating in co-location mode. Commenter offers no evidence in support of the conclusion that the Discharger would not be able to continue to meet the CWC Section 13142.5(b) standard when and if it operates in stand-alone mode, independent of an EPS. In the event the EPS ceases operations and the CDP operates in stand-alone mode, the Regional Board will

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		conduct additional review pursuant to CWC Section 13142.5(b) to ensure the continued minimization of the intake and mortality of all forms of marine life.
S5	The current permit conditions rely on unproven and, as yet undefined, plans to restore marine life in contradiction of the clear language in California's Porter-Cologne Act to minimize marine life intake and mortality in the first place. Sub-seafloor intake systems are a proven alternative to minimize marine life intake and mortality currently attributable to open seawater intakes;	The Minimization Plan is a specific plan including a mitigation component that explicitly is authorized by CWC Section 13142.5(b). The mitigation component uses proven approaches, incorporating the approach for the successful San Dieguito wetlands restoration project, being undertaken by Southern California Edison ("SCE").
S6	The Poseidon-Carlsbad intake permit should set the highest standard for enforcement of California's laws to restore and protect marine life mortality. This is just the first of many potential desalination proposals coast-wide. The State Water Resources Control Board and San Diego Regional Board should send a clear message to future project proponents that ocean desalination facilities should be designed to accommodate technology that minimizes the intake and mortality of marine life. Designing massive ocean desalination facilities and then "shoehorning" in sub-standard intake systems is not sound public policy.	<p>By undertaking an extensive permitting and approval process, the Regional Board has ensured that the CDP complies with all applicable water quality laws and regulations within its jurisdiction to enforce. In particular, the Regional Board has required the Discharger to develop the Minimization Plan in order to ensure compliance with CWC Section 13142.5(b). Under the terms of the Minimization Plan, the Discharger will use the best available site, design, technology, and mitigation measures feasible to minimize the intake and mortality of marine life.</p> <p>The MLMP provides for full offset of entrainment and impingement for annual daily flows of up to 304 MGD drawn directly from Agua Hedionda Lagoon, even though the Discharger is expected to receive source water from EPS's cooling water discharge. The performance standards of the MLMP are stringent and rigorous, requiring that the restored wetlands support multiple and varied biological populations, including vascular plants and algae, fish, macrobenthic invertebrates, birds, and food chain support that are 95 percent similar to the same populations at up to four reference wetlands. The performance standards</p>

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		<p>require the habitat areas in the restored wetlands not to vary by more than 10% from the areas indicated in the Restoration Plan. This approach was approved by the Coastal Commission.</p> <p>The Regional Board and the Coastal Commission are authorized to determine project success or failure, based on the MLMP's rigorous performance standards, and to require any necessary measures to ensure continued compliance with CWC Section 13142.5(b). Moreover, the Regional Board has added an additional condition requiring that the mitigation site produce at least 1715.5 kg of available fish biomass per year as defined in Order No. R9-2009-0038.</p>
S7	<p>We are not opposed to ocean desalination. However, we oppose the current permit language as it does not meet the clear standards of California's law to protect our precious marine life.</p>	<p>Commenter does not identify any specific permit language with which he takes issue, any specific California law not satisfied, or how the permit language fails to meet any standard in such law. To the extent Commenter is referring to CWC Section 13142.5(b), Commenter is incorrect that the legal standard has not been met. The Regional Board has specifically evaluated the Minimization Plan to ensure the CDP's compliance with CWC Section 13142.5(b). The Minimization Plan provides for the use of the best available site, design, technology, and mitigation measures feasible to minimize the intake and mortality of marine life.</p>
S8	<p>We strongly urge you to either:</p> <p>1) Deny the current proposal and insist on a facility capacity design, location and intake technology that minimizes marine life mortality in the first place (e.g., sub-seafloor intakes); OR</p> <p>2) Limit the interim operation of the CDP to only the water</p>	<p>The Minimization Plan proposes site, design and intake approaches that minimize marine life mortality to the extent such approaches are available and feasible. Other than sub-seafloor intakes, which are not feasible (see above), the comment identifies no specific design, location and intake technology that is available and feasible that is not already in the Minimization Plan. It</p>

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	<p>being withdrawn by the Encina Power Station, AND</p> <p>-Insert a provision to automatically re-open the permit when the current cooling water intake is abandoned or consistently falls below the required 304 mgd -with specific language to guarantee the construction and use of sub-seafloor intakes.</p>	would not be appropriate to require the Discharger to guarantee the construction and use of infeasible, sub-seafloor intakes. Under conditions of co-location, there is no basis to limit operation of the CDP to only water being withdrawn by EPS for power plant use. The conditions and requirements contained in the revised Tentative Order are adequate to cover the current scenario.
3/31/2009 letter from Dianne Jacob, Chairwoman, Supervisor Second Circuit, San Diego County Board of Supervisors		
129.	<p>As Supervisor of San Diego County's Second Supervisorial District, I'm writing in support of the Carlsbad Desalination Project.</p> <p>The project has undergone close to ten years of planning and research to ensure that it is an environmentally responsible solution to the region's water needs. The City of Carlsbad certified the environmental document in 2006, concluding there are no significant impacts for both the construction and on-going operation of the plant related to thirteen different areas studied, including marine impacts.</p>	Comments noted.
4/1/2009 letter from Sierra Club, San Diego Chapter		
130.	Impingement Impacts. The impingement impacts in the past and latest March 9 report focuses on minimizing the approach velocity at the travelling fine screens. These	Poseidon proposes to mitigate for all estimated impacts, without consideration to any site, design, or technology measures that will be implemented to

¹ The average velocity is computed by dividing the flow rate by the cross sectional area of the channel.

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	<p>reports fail to address that there is no escape path for the larger marine life that can swim away from the screen except to swim back up the intake tunnel. We are not aware of any reports that monitor the number of mobile marine life that have escaped in this manner.</p> <p>With the Encina Power Station operating with all intake pumps operating the average velocities at left and right tunnels are 10.2 and 2.3 feet/second, respectively. The Poseidon reports cite the average velocities but neglects the fact that the actual velocity profile across the tunnel varies, increasing from the sides to the center². This fact is important as the maximum velocity will be higher than the average dependent several factors such as the configuration and roughness of the channel. Actual flow velocity profiles should be measured.</p>	<p>minimize these impacts. In light of this, it is still acceptable for the Board to find that the project, in sum, complies with section 13142.5.</p> <p>Also see response to Comment 50.</p>
131.	<p>It is our understanding that to meet the 304 MGD intake flow when the Encina Power Station is temporarily shut down or for the “stand alone” case, one pump each from Units 4 and 5 will be used to provide 316 MGD. We expect that this option would have a higher impingement impact compared to other options that use a combination of pumps from Units 1, 2, and 3 plus either one pump for Unit 4 or 5. Using pumps for Units 1, 2, and 3 reduce the travel distances, overall in tunnel velocities and the aquatic losses due to contact with the tunnel walls as compared to the option using only the Unit 4 and 5 pumps that has the highest tunnel velocity and travel distance.</p>	<p>See response to Comment 50.</p>
132.	<p>Estimating Flow Proportioned Impingement. A concern that has received a good deal of attention is to explain why there was an exceptional increase in impingement data for</p>	<p>Regional Board staff disagree with the Discharger’s experts’ assertions that the two high impingement results were a result of storm events and provided</p>

² Refer to a textbook on fluid mechanics on water flow in channels. I referred to my college fluid mechanics text book by R.C Binder

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	<p>two sample weeks; the 30th week, January 12-13, 2005 and February 23-24. Reference 5 treats these at “outliers” and does not provide a plausible reason. There is no discussion if the number of fishes in the source water beyond the small number of freshwater fish that were impinged due to immigration.</p> <p>The migration and spawning characteristics of the aquatic life in the Lagoon should be evaluated to determine the source numbers aquatic life over a sufficient time. Estimating the impingement just on the 52 week sample is not sufficient. We do not believe that the analysis presented in the footnote 5 is adequate.</p>	<p>testimony suggesting alternative causes.</p> <p>Regardless, the Regional Board finds that it is unnecessary to resolve these disputes. The Regional Board finds that 4.7 kg/day, which assumes 100% probability of the two very high impingement days, is a reasonable, conservative estimate of impingement associated with CDP’s projected operations under co-located conditions and notes that the Discharger has agreed to meet a fish productivity standard of 1715.5 kg/year, derived from the estimate of 4.7 kg/day, in the mitigation wetlands.</p> <p>Additionally, impingement monitoring has been required once every five years.</p>
133.	<p>Heat treatment replacement. This item remains to be addressed in a new WDR for the “stand alone” seawater desalination plant, the use of ½ inch diameter plastic balls to scrub the intake and discharge tunnels, open channels and pumps. The proponents claim that this new treatment would eliminate the heat treatment kills not cause harm to the aquatic life. If the energy in the plastic balls is adequate to remove the bio-fouling in water passageways, it does not seem logical that they would not be fatal to aquatic life as well.</p>	<p>The Regional Board is not considering the adequacy of the heat treatment replacement at this time since this is a feature that could be incorporated under stand-alone conditions. Once EPS permanently shuts down and the CDP is operated on a stand-alone basis, the Regional Board will undertake additional evaluation under CWC Section 13142.5.</p>
4/1/2009 email from Coast Law Group		
134.	<p>On or about March 9, 2009, you issued a notice of public hearing for the above referenced item. Therein was contemplated submission of comments on available documents by 5:00 pm today. As you surely are aware, a significant amount of new material has been added since posting of the notice.</p>	<p>Comments noted. As reflected in the public notice for the April 8, 2009 meeting, the Board had requested that written comments be submitted by April 1, 2009 at 5 p.m., but the public comment period was open through the Board hearing on April 8, 2009.</p>

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	<p>In addition, the staff report for the matter dated March 27, 2009 indicates significant additional information, namely critical evaluations of materials by Dr. Raimondi, were expected to be received by the Board yesterday. We have not yet seen this documentation, and it is not posted on the Board's website.</p> <p>Given the volume of documents, as well as the timing of availability to the public, we do not believe sufficient time has been afforded to review and provide meaningful comments within the originally prescribed timeframe. As such, please accept this correspondence as notice that we shall be submitting written comments up to, and possibly at, the Regional Board hearing on April 8th. Given that the matter is in litigation, and the project need not be approved at the April 8th hearing to remain on schedule, there is no credible legal rationale for requiring strict adherence to the artificial deadline of today at 5:00pm.</p>	
4/2/2009 letter from Latham & Watkins on behalf of Poseidon		
135.	<p>On April 30, 2008, Poseidon submitted a calculation indicating that the Project's standalone impingement would be approximately 1.57 kg per day, a de minimis value. When operating in co-located mode, any impingement associated with the Project would naturally be even less.</p> <p>Based on requests from Regional Board staff, Poseidon submitted Attachment 5 to the Minimization Plan which presents several different ways to account for the direct relationship between impingement and flow in the impingement estimates. Depending on their treatment of the outlier sampling events and the extent to which they account for the relationship between flow and impingement, these approaches produce a range of possible impingement</p>	<p>The Discharger submitted the noted calculation to staff via email on April 20, 2008 but did not revise the then-pending March 6, 2008 Minimization Plan at that time. Regional Board staff disagree with the Discharger's claim that 1.57 kg/day is an appropriate estimate of the CDP stand-alone impingement for several reasons (e.g., it excludes two days of high impingement without sound justification, and it does not have an associated number of fish).</p> <p>Regardless, as noted in the revised Tentative Order, it is unnecessary to resolve these disputes because the Regional Board finds that 4.7 kg/day is a reasonable, conservative estimate of impingement associated with</p>

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	<p>estimations of between 1.57 to 7.16 kg per day.</p> <p>Subsequent scientific analysis of the outlier events completed by experts for Poseidon conclude that the estimate values toward the lower end of the range more reasonably anticipate the Project's operations. In any event, Poseidon considers all of the various, reasonable impingement estimation approaches to result in impingement estimations that are de minimis.</p> <p>(Comments from Latham & Watkins LLP January 26, 2009 Comment Letter, pgs. 23-24; Latham & Watkins LLP April 2, 2009 Comment Letter, pgs. 10-12; Minimization Plan, Attachments 5, 7 and 9)</p>	<p>CDP's projected operations under co-located conditions and notes that the Discharger has agreed to meet a fish productivity standard of 1715.5 kg/year, derived from the estimate of 4.7 kg/day, in the mitigation wetlands.</p>
136.	<p>The CDP's projected impingement when operating in stand-alone mode ranges from 1.57 to 7.1 kilograms per day ("kg/day") based on applying a linear regression analysis to EPS's 2004-05 impingement sampling data. The 2004-2005 EPS sampling data includes 52 samples events. During two of the sample events, January 12 and February 23, the recorded impingement was observed to be relatively higher than on the other fifty days. Importantly, these two sample days immediately follow storm events. Subsequent analysis completed by Drs. Chang and Jenkins, experts for Poseidon, indicate that the storm events preceding the January 12 and February 23 samples have a low probability of recurrence, each likely to occur no more than once every quarter century. The likelihood that both such events will occur in any given year, as they did during the 2004-2005 sample year, is even more remote.</p> <p>Because the rains preceding the two outlier collection events</p>	<p>To clarify the first sentence of this comment: the lowest estimate of the CDP's projected impingement, 1.57 kg/day, is based on applying a linear regression analysis (exclusive of two days of high impingement). Other estimates in the range are based on applying other analyses/calculations.</p> <p>Staff concurs that two of the 52 weekly samples recorded relatively high impingement. Staff also concurs that the two high-impingement days are coincident with record storm events. However, staff does not agree with the Discharger's experts that the samples should be excluded from the CDP projection (or reduced based on the storm probability) because, as detailed in the staff reports, high-impingement on those days could have had other causes/contributors. In addition, the mechanism by which high rainfall would translate to high impingement is not compelling.</p>

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	<p>can be expected to occur less than once every 20 years (i.e., less than 5%), the weight of the outliers should be discounted accordingly. When the weighted-average flow-proportioned approach (3-B) incorporates an outlier probability value of less than 5%, the approach calculates an impingement estimate of less than 2.24 kg/day, with 2.24 providing a reasonable upper bound. This value provides a reasonable approximation of the CDP's potential impingement.</p> <p>(Comments from Latham & Watkins LLP January 26, 2009 Comment Letter, pg. 23, fn. 45; Latham & Watkins LLP April 2, 2009 Comment Letter, pgs. 10-11, Appendix B, Tab 3; Minimization Plan, Attachments 5 and 9)</p>	<p>Regardless, it is unnecessary to resolve these disputes because the Regional Board finds that 4.7 kg/day is a reasonable, conservative estimate of impingement associated with CDP's projected operations under co-located conditions and notes that the Discharger has agreed to meet a fish productivity standard of 1715.5 kg/year, derived from the estimate of 4.7 kg/day, in the mitigation wetlands.</p>
137.	<p>The mitigation approach outlined in the Minimization Plan and MLMP to construct or restore up to 55.4 acres of estuarine wetlands does not result in any double counting. These kinds of wetlands are known to provide a wide variety of ecological functions. They provide important spawning and nursery grounds that support large larval populations, thereby compensating for potential entrainment from the CDP's intake of seawater from AHL. They also provide food and refuge for fish, whether those fish are present because they matured from locally produced larvae, or migrated into the wetlands from other nearshore or wetlands populations. By supporting populations of fish in addition to the species for which entrainment mitigation is provided, the proposed wetlands have the potential to provide substantial mitigation for impingement, in addition to entrainment.</p> <p>Wetlands required to compensate for entrainment of one species are available to compensate for impingement of a wholly different species assuming, of course, that the wetlands will produce the impinged species. As applied to the</p>	<p>At the April 2009 hearing, Poseidon provided testimony and calculations to demonstrate how the Mitigation Wetlands could serve to compensate for both impingement and entrainment impacts.</p> <p>Regional Board staff provided testimony asserting that, unless all the species entrained (rather than just the most commonly entrained species, used for the estimation of APF) were proportionately excluded from Poseidon's productivity estimates, the calculations would not accurately demonstrate whether the mitigation wetlands could adequately compensate for impacts due to impingement and entrainment.</p> <p>The Board considered the testimony before it and concluded through the revised Tentative Order that the wetlands will be able to compensate for entrainment and impingement. The revised Tentative Order establishes a productivity standard that must be achieved as a biological performance measure. The</p>

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	<p>CDP, it turns out that entrainment mitigation was driven by three fish taxa—gobies, blennies, and garibaldi. In fact, 49 of the proposed 55.4 acres of the proposed wetlands will be designed to compensate for the potential entrainment at the CDP of these three fish taxa. Fortuitously, these three taxa rarely are impinged. Rather, other fish predominate potential impingement at the CDP. Because these other fish are expected to be present in substantial quantities in the planned wetlands, the 49 acres of wetlands can mitigate for their potential impingement losses at the CDP.</p> <p>The other 6.4 acres of the planned wetlands will be designed to compensate for the potential entrainment at the CDP of five ocean-going species—white croaker, northern anchovy, California halibut, queenfish, and spotfin croaker. These fish were detected in relatively small numbers in the 2004-2005 entrainment data upon which the analysis relies. The 6.4 acres of planned wetlands are expected to produce many fish other than these five ocean-going species. The expected production of these other fish in 6.4 acres is available to compensate for their potential impingement at the CDP.</p> <p>(Comments from Latham & Watkins LLP April 2, 2009 Comment Letter, pgs. 3, 18-19, Appendix B, Tab 2)</p>	<p>Tentative Order will also require necessary monitoring to determine whether the mitigation wetlands could adequately compensate for impacts due to impingement and entrainment.</p>
138.	<p>On February 11, 2009 the Regional Board considered the MLMP for the first time, continuing its review to the present hearing. Staff identified four additional issues it sought to resolve concerning the March 6, 2008 Minimization Plan before recommending that the Regional Board take final action on the Minimization Plan:</p> <p>(1) placing the Regional Board and its Executive Officer on equal footing, including funding, with Coastal Commission and its Executive Director, in the MLMP, while minimizing</p>	<p>Comments noted.</p>

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	<p>redundancies (e.g., only one Scientific Advisory Panel) details of dispute resolution process to be worked out); (2) reducing the number of [potential mitigation] sites to five, in consultation with the Coastal Commission, with the existing proviso that other sites within the Regional Board boundaries could be added; (3) Poseidon to provide the flow-proportioned calculations for its impacts due to impingement, to help support the Regional Board's determination that these impacts are de minimis; and (4) Poseidon to provide a consolidated set of all requirements imposed to date by the various agencies.</p> <p>(Comments from Latham & Watkins LLP April 2, 2009 Comment Letter, pgs. 8-12, Appendix A)</p>	
139.	<p>In response to staff's request that the Minimization Plan clearly place the Regional Board on equal footing with the Coastal Commission, in Chapter 6 of the Minimization Plan, Poseidon clearly identified provisions of the MLMP that are enforceable by the Coastal Commission, then indicated for each of them how they are also enforceable by the Regional Board if the Plan is approved. For instance, the Plan provides that the Regional Board will have the authority to approve the final mitigation site(s) and restoration plan for the site(s), and enforce compliance with the MLMP's strict performance criteria.</p> <p>(Comments from Latham & Watkins LLP April 2, 2009 Comment Letter, pgs. 8-9)</p>	Comments noted.
140.	<p>In response to staff's request to reduce the number of proposed mitigation site(s) from 11 to 5, Poseidon amended</p>	Comments noted.

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	<p>the Minimization Plan to provide as follows:</p> <p>“Sites located within the boundaries of the Regional Water Quality Control Board, San Diego Region, shall be considered priority sites. If Poseidon proposes one or more mitigation sites outside of these boundaries, it first shall demonstrate to the Board that the corresponding mitigation could not feasibly be implemented within the boundaries, such as when the criteria established in Section 3.0 of the MLMP [providing site criteria] are not satisfied.”</p> <p>Therefore, “among the eleven candidate sites identified in the MLMP, Poseidon will consider the five sites within the Regional Board’s boundaries as priority sites for selection.”</p> <p>(Comments from Latham & Watkins LLP April 2, 2009 Comment Letter, pgs. 9)</p>	
141.	<p>On February 26, 2009, staff counsel identified certain items that would satisfy staff’s request that, “Poseidon ☐ provide a consolidated set of all requirements imposed to date by the various agencies.” Poseidon responded by submitting six regulatory documents from the City of Carlsbad, the California Coastal Commission and the State Lands Commission:</p> <ol style="list-style-type: none"> 1. City of Carlsbad Development Agreement (DA 05-01) 2. City of Carlsbad Redevelopment Permit (RP 05-12) 3. City of Carlsbad EIR Exhibit B, Mitigation Monitoring and Reporting Program 4. City of Carlsbad Precise Development Plan (PDP 00-02) 5. State Lands Commission Lease Agreement (PRC 9727.1) 6. California Coastal Commission Condition Compliance for CDP No. E-06- 013 — Special Condition 8. 	Comments noted.

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	<p>All of these items were publicly available, and Poseidon already had submitted the key documents, including the Coastal Commission Condition Compliance and the State Lands Commission Lease Agreement, into the record by the time of the February 11, 2009 hearing.</p> <p>(Comments from Latham & Watkins LLP April 2, 2009 Comment Letter, pgs. 9-10)</p>	
142.	<p>Poseidon worked diligently with Regional Board staff to comply with this request. After conferring with staff on a number of occasions to clarify the request, Poseidon submitted Attachment 5 of the Minimization Plan which presents several different ways to account for 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. These approaches produce a range of possible impingement estimations of between 1.57 to 4.7 kg per day. Based on additional scientific analysis of the two outlier events, which is detailed in Attachment 9 to the Minimization Plan, the estimate values toward the lower end of the range more reasonably anticipate the Project's operations.</p> <p>(Comments from Latham & Watkins LLP April 2, 2009 Comment Letter, pgs. 10-12, Appendix A and Minimization Plan, Attachments 5 and 9)</p>	<p>To clarify: this comment refers to Board's request that Poseidon provide the flow-proportioned calculations for its impacts due to impingement, to help support the Regional Board's determination that these impacts are de minimis.</p> <p>Following the February 11, 2009 Board meeting, staff provided Poseidon (on February 13 via email) a list of items needed to resolve the request. The first (of four) items was: "1. Estimates of impingement losses (EPS 2004-05 results prorated to 304 MGD)." The email explained that the estimates should be for fish, for invertebrates, and in total (fish plus invertebrates), and should be in terms of individuals and biomass, and in terms of per day and per year.</p> <p>Poseidon provided prorated results on February 26, 2009.</p> <p>Poseidon submitted Attachment 5 as part of the March 9, 2009 Minimization Plan. It describes six approaches to estimating the CDP impingement projection (1 A, 1B, 2A, 2B, 3A, 3B). The six approaches result in a range of estimates from 1.57 to 7.16 kg/day.</p>

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		The Regional Board finds that 4.7 kg/day (Approach 3B), which assumes 100% probability of the two very high impingement days, is a reasonable, conservative estimate of impingement associated with CDP's projected operations under co-located conditions and notes that the Discharger has agreed to meet a fish productivity standard of 1715.5 kg/year, derived from the estimate of 4.7 kg/day, in the mitigation wetlands.
143.	Co-location of the Project at the existing EPS site represents the best site feasible to minimize the intake and mortality of marine life. (Comments from Latham & Watkins LLP April 2, 2009 Comment Letter, pgs. 13-14)	The Regional Board concurs with this statement.
144.	The Project implements the best design features feasible that ensure the minimization of the intake and mortality of all forms of marine life. (Comments from Latham & Watkins LLP April 2, 2009 Comment Letter, pgs. 14-15)	Available information shows that under the conditions of co-location operation, the Discharger has little control over the intake structure. Under the conditions of co-location operation, the existing intake meets the best available design criteria.
145.	The Project implements the best available technology measures feasible for the Project's site-specific conditions in order to minimize the impingement and entrainment of marine organisms in the intake seawater. (Comments from Latham & Watkins LLP April 2, 2009 Comment Letter, pgs. 15-18)	See response to Comment 144. The Regional Board concurs that the proposed technology for the CDP is the best available technology feasible under co-location operation.
146.	The proposed mitigation wetlands set forth in the MLMP will fully and simultaneously mitigate for any entrainment and	Comment Noted. The Tentative Order will require the Discharger to meet a productivity standard of 1,715.5

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	<p>impingement that may eventually be associated with the Project's operations, and thus represents the best mitigation feasible to minimize the impingement and entrainment of marine organisms.</p> <p>(Comments from Latham & Watkins LLP April 2, 2009 Comment Letter, pgs. 18-20)</p>	<p>kg/year and will require implementation of a productivity monitoring plan to determine whether this standard is achieved.</p>
<p>147.</p>	<p>The Marine Life Mitigation Plan (MLMP) represents the culmination of a comprehensive, interagency planning process involving extensive scientific study and public involvement and ensures that potential entrainment and impingement impacts to marine resources from the Project will be fully mitigated in compliance with Resolution R9-2008-0039, Order No. R9-2006-0065, and Water Code Section 13142.5(b). Specifically, the MLMP will:</p> <ul style="list-style-type: none"> • 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 	<p>Comments noted.</p>

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	<p>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,</p> <ul style="list-style-type: none"> • Authorize enforcing agencies to order remediation in the event the rigorous performance criteria are not met. <p>(Comments from Latham & Watkins LLP January 26, 2009 Comment Letter, pgs. 3, 12-20 and Latham & Watkins LLP April 2, 2009 Comment Letter, pgs. 18-20)</p>	
4/2/2009 letter from Christine Kehoe, 39th Senate District		
148.	<p>Poseidon's Minimization Plan assures that the project will comply with Porter-Cologne Water Quality Control Act, California Water Code Section 13142.5(b). Poseidon's obligation to create up to 55.4 acres of new, highly productive estuarine wetlands will offset the projects impacts. The Coastal Commission and State Lands Commission have reviewed and approved this project.</p> <p>I ask you to please approve this final condition of the project's NPDES permit and help the San Diego region welcome a new, drought proof and environmentally-responsible water supply.</p>	Comments noted.
4/2/2009 letter from Group of Californians dedicated to restoring and protecting our coast and ocean		
149.	<p>First, we want to be clear that we are not strictly opposed to ocean desalination. However, we have warned from the beginning of the planning of this facility, and others like it, not to rely on the continued existence of "once-through cooling" intakes as source water for ocean desalination. This antiquated technology has been all but prohibited by the federal courts and is currently being reviewed for a phase-out</p>	Comments noted. See also responses to Comment Nos. 43, 45 and 46.

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	<p>plan by California agencies led by the State Water Resources Control Board. Sound public policy and the mandates of the Porter-Cologne Act make it clear that co-locating with power stations to share the ocean intake for the dual purposes of cooling water and desalination source water is a design whose time has passed even before these massive ocean desalination facilities are permitted.</p> <p>The documentation provided by the project proponent fails to adequately identify a design capacity for the output of the facility that is compatible with alternatives for desalination source water intake technologies to eliminate the intake and mortality of marine life.</p> <p>Instead, Poseidon Resources argues that they can "mitigate" the marine life mortality through after-the-fact restorative measures. The federal courts have found this approach illegal and inconsistent with the clear mandates of the Clean Water Act to use the best technology available to minimize adverse impacts in the first place. Similarly, the Porter-Cologne Act mandates "mitigating" the intake and mortality of marine life in the first place - not attempting to restore the damage after the fact. Importantly, California's Porter-Cologne Act does not distinguish cooling water intakes for coastal power plants from seawater desalination or any other industrial use of seawater. Consequently, the Regional Board should apply the same standards to ocean desalination that were established by the federal courts for cooling water intakes.</p>	
4/3/2009 Email from Coast Law Group		
S9	The Staff Report mentions a data discrepancy with regard to flows reported from EPS during the sampling period. (Staff Report , 15 fn. 31). EPS monitoring reports also show flows	The Staff Report mentions a data discrepancy with regard to flows reported from EPS during the sampling period. (Staff Report , 15 fn. 31). EPS monitoring

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	<p>consistently lower for the data set compared to the Tenera flow data. (Personal communication with staff). Both data sets should be made publicly available, and re-evaluated. If impingement rates are calculated as mass/volume, the data set will be skewed in Poseidon's favor when flow rates are over-estimated.</p>	<p>reports also show flows consistently lower for the data set compared to the Tenera flow data. (Personal communication with staff). The comment incorrectly states that the March 27, 2009 mentions a "data discrepancy." At p. 15, staff noted that the "2004-05 flow data indicates that the January 12 survey may have been associated with a unique operational circumstance, i.e., the survey was preceded by four days for which intake pump records are not available, the only such week during the year." The sentence cites to a footnote, which reads: "The 2004-05 intake flow data (submitted March 5, 2009) indicate that, in the week prior to the January 12, 2005 survey, there are four days recorded as zero intake (1/7/05 through 1/10/05), and two days of low intake flow (1/6/05 and 1/11/05). EPS monitoring reports show discharges of between 580 MGD to 660 MGD on those days so presumably there was intake. On March 25, 2009, staff requested clarification and was informed that days assigned values of 0 MGD intake are days for which flow data from the plant were not available." Thus, the comment incorrectly equates an absence of data with a "data discrepancy." It should be noted that the two sets of data produced here – the 2004-05 intake flow data and the EPS discharge reports – were produced pursuant to different regulatory requirements, which may account for differences, if any. The comment provides no factual basis from which to presume that the discharges as reported in the EPS monitoring reports were actually less than the intake flows recorded in the 2004-05 flow data, or that any such differences were meaningful.</p> <p>The 2004-05 flow data was posted on the Regional Board website. The impingement calculations used for</p>

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		the CDP projection are based on the 52 sample days (and not any of the days between). Staff has not yet attempted to independently verify the flow data.
S10	Poseidon's assertion that .5 feet/second (fps) velocity at inlet screens will reduce impingement to insignificant levels is unsupported. We concur with Staff's determination that most impingement intake and mortality occurs at the bar rack rather than on the rotating screens. (Staff Report , 8).	To clarify, staff's assertion was that most impingement intake and mortality occurs at the rotating screens rather than at the bar rack. Poseidon's assertion that 0.5 feet/second (fps) velocity at inlet screens will reduce impingement to insignificant levels is consistent with EPA and SWRCB guidance, but was ultimately not relied upon by the Regional Board. (please see response #33).
S11	Further, installation of VFDs on CDP intake pumps to reduce total intake flow for the desalination facility will only reduce intake flow for up to 104 MGD, as 200 MGD (dilution seawater) never flows to the desalination plant. Any reduction of impingement through use of VFDs (which is unvalidated) is therefore only attributable to that portion of flows going directly to the CDP. (Staff Report , 10). As Poseidon does not currently "take credit" for VFDs, or propose to use any design or technology measures to reduce impingement, we offer this position to rebut any future attempts to "take credit" for such measures. Further, because Poseidon fails to quantify the reduction in impingement resulting from any such technological "improvements," characterization as such is unwarranted.	Comment noted.
S12	Poseidon's individual sampling impingement rates are calculated as follows: average impingement weight, divided by the associated flow volume for the sampling day, multiplied by 304 MGD. These resulting "weights" are then averaged. Two sampling events had higher associated impingement rates. Poseidon argues for their exclusion, while Dr. Raimondi and staff believe they should remain in the data set. We concur with Dr. Raimondi and staff: the two data points with high associated impingement rates should not be	Comment noted.

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	considered outliers.	
S13	<p>As staff correctly points out, Poseidon's proposed rainfall "flushing" theory is based on several flawed assumptions.</p> <ul style="list-style-type: none"> - High impingement rate is not always associated with heavy rainfall. (Staff Report , 14). - Nor does high impingement rate correlate with any rainfall. (Staff Report , 15). - The mechanism by which heavy rainfall might cause high impingement is unclear. (Staff Report , 15). - Poseidon's proposed theory is unsubstantiated. Moreover, the data itself belies the proposed "flushing" theory, as the percentage of freshwater fish impinged is small. (Staff Report , 15). 	Comment noted.
S14	Staff points out that several lines of evidence are missing and Poseidon has provided no actual data to shed light on the origin of high impingement rates.	Comment noted.
S15	Moreover, staff's proposed theory as to the origin of the higher impingement rates on the two contested days is more persuasive than Poseidon's theory, and favors keeping the two days within the data set. (Staff Report , 15). Without conclusive proof that the two high impingement days are truly "outliers," the data set must remain undisturbed.	Comment noted.
S16	Dr. Raimondi also argues that Poseidon's theory is flawed and based on logical error. (Raimondi, 7). The lack of historical impingement data weighs in favor of being inclusive, rather than considering certain data sets outliers. (Raimondi, 7).	Comment noted.

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S17	<p>Further, Poseidon's proposed theory, as supported by Jenkins and Chang, is flawed and unsupported by the existing data. Indeed, Dr. Chang's analysis is flawed in and of itself. As Dr. Chang admits, the sampling period (2004-2005) was an abnormally wet period, as total rainfall was 26 inches as opposed to a typical average of 13 inches. However, Dr. Chang's overly narrow focus on the two data points undermines the credibility of his entire analysis. Without providing the rainfall data or statistical analysis of the probability of occurrence for the entire data set, Poseidon cannot credibly argue that the two "suspect" data points are outliers. Moreover, as Dr. Raimondi correctly points out, even if the storm events themselves are outliers (which we cannot know without the entire data set), this does not mean the impingement associated with those rain events is atypical. (Raimondi, 7).</p>	Comment noted.
S18	<p>Dr. Jenkins' data is equally unpersuasive. He first concludes that the rainfall data does not alter the validity of the sampling data, because lagoon salinity was not depressed on a persistent basis. (Jenkins, 2). He then concludes the above-average rainfall during the sampling period was "fortuitous" because it spanned the full range of "natural hydrologic variability" and "captured a range of conditions, including some that are not likely to re-occur in most years." It does not follow then, that the two "statistically anomalous" extreme storm event days should be excluded from the data set. (Jenkins, 4). If the entire data set includes a range of "natural hydrologic variability" the entire data set must be used. The fortuitous event of capturing these two high storm events, using Jenkins' logic, favors being inclusive rather than exclusive. Similar to Dr. Chang's analysis, Dr. Jenkins' assertions as to the two contested data points is flawed as well due to his overly narrow focus on those two data points. In failing to compare those two days to the entire sampling period, he also fails to prove why they should be excluded.</p>	Comment noted.

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	Thus, Poseidon has not met its burden of conclusively proving the two days should be considered anomalies.	
S19	The impingement impact calculation also seems to reflect only "normal operations" and not heat treatments.	<p>The March 27, 2009 staff report suggested that, if operation of the CDP should lead to the need for more frequent heat treatment of the EPS intake facility, then it would be reasonable to include in the CDP incremental impact a corresponding portion of the impingement impacts due to heat treatments.</p> <p>In response, Poseidon submitted a statement (Le Page Statement, April 8, 2009) indicating that the frequency of heat treatment at Encina is "a matter of industry standard" and that "since heat treatment frequency is a standard maintenance issue at set intervals regardless of flow rates, there are no logical reasons to assume that the frequency of heat treatments will change as a result of any potential increase in water flow from the CDP over the power plant's projected water demand."</p>
S20	Poseidon's Flow Plan calculations (and Dr. Raimondi's calculations based on approach 3-B) result in a weighted average impingement rate of 4.7 kg/day. This results in an annual impingement of 1715kg (to a 50 percent confidence level).	<p>The issue of confidence interval was raised by Dr. Raimondi in his April 1, 2009 statement. Confidence intervals rely on inferential statistics, according to Dr. Raimondi. Dr. Jenkins raised significant questions about the confidence intervals proposed by Dr. Raimondi. (Scott A. Jenkins, A Note on Confident Limits in Raimondi's April 1, 2009 RWQCB Report (April 8, 2009).)</p> <p>At the April 8, 2009 hearing, the Discharger agreed to undertake field programs to provide an empirical basis to ascertain whether 4.7 kg/day is the appropriate value by which to drive the Discharger's impingement mitigation obligation. It also agreed to conduct a field program at the mitigation site to demonstrate that the</p>

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		<p>impingement mitigation obligation is being met.</p> <p>On balance, the Regional Board prefers the empirical approach discussed at the April 8 hearing. It is concerned that the approach using inferential statistics may be adding one level of conservatism on top of another, potentially resulting in a punitive mitigation condition. In contrast, the empirical approach relies on actual data from the field to true up the mitigation obligation, and adjust it, if necessary, on the basis of actual data, rather than statistical calculation.</p> <p>Taking an empirical approach also is warranted given the genesis of the 4.7 kg/day value that is driving the impingement obligation in the Tentative Order. This value is much higher than average impingement over 336 days in 1979-1980, and much higher than average impingement over fifty days in 2004-2005. While there was impingement much higher than 4.7 kg/day on two days in 2005, it is reasonable to believe that those values are not representative of long-term impingement over the life of the Project. The Discharger has presented credible and substantial evidence that impingement at the CDP is likely to be on the order of 1.6 kg/day.</p> <p>Finally, the impingement obligation is based on the assumption that the CDP is getting no flow in the form of cooling water discharge from the EPS. While this condition may occur from time to time, it adds another conservative layer to the analysis and to the obligation. In other words, potential impingement is estimated "at a rate of 304 MGD attributable to CDP impacts," as the comment recommends.</p>
S21	However, as pointed out in the Staff Report, heat treatments	See Response No. S19 above.

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	will continue during co-located operations.	
S22	<p>The organisms already in the intake channel are killed when the intake channel is closed off, and the heated discharge water is circulated for hours. (Staff Report, 12 fn. 23). These organisms end up impinged when the pumps return to normal operation. Poseidon and Raimondi's calculations do not take into account the proportion of organisms killed during heat treatments attributable to Poseidon's flows. If EPS intake pumps are operating for the benefit of CDP, a larger number of organisms will be present in the intake channel than would occur if CDP were not operating. Thus, a larger number of organisms will be impinged at the time of heat treatments. The proportion of impingement due to CDP operations as opposed to EPS operations can be calculated real-time by determining the percentage of flow attributable to CDP operations, and multiplied by the total impingement due to heat treatments.</p>	<p>See Response No. S19 above. Commenter proposes to ascribe a proportion of impingement during heat treatment to the CDP. Impingement during heat treatment cannot fairly be ascribed to the Discharger. Heat treatments have been a longstanding practice at the EPS, which occurs on a periodic basis. It is not expected that the operator of the EPS will change this frequency because of CDP operations. The build-up of biomass and other factors that heat treatment is used to address are not related to flow through the intake. Rather, it is the mere presence of water that principally creates the conditions conducive to growth on the side walls. Flow actually can reduce these conditions to the extent flow removes biofilm or other growth.</p>
S23	<p>Based on Dr. Raimondi's review of Chris Nordby's analysis, Poseidon's proposed mitigation for impingement is wholly inadequate. We agree with Dr. Raimondi's assessment that the approach used by Poseidon (and Nordby) is flawed for the following reasons:</p> <p>(a) Entrainment compensation cannot also be used for impingement compensation. (Raimondi, 1-2)</p> <p>(b) Nordby's approach relies on a 27-year old study by Larry Allen that is inapplicable here.</p> <p>(c) Nordby's estimation of fish production is based on mudflat wetlands, which only comprise 40 percent of Poseidon's proposed entrainment mitigation (as adopted by the CCC).</p>	<p>(a) The same mitigation wetlands can be used to compensate for both entrainment and impingement to the extent that the mitigation wetlands produce fish other than those specifically reserved for entrainment mitigation.</p> <p>(b) Dr. Raimondi did not find a flaw in the Discharger's approach due to its reliance on a "27-year old study by Larry Allen." Nor did Dr. Raimondi conclude that Mr. Allen's seminal study of Newport Bay productivity was "inapplicable here." The comment provides no argument or evidence of its own as to why it agrees with the comment's mischaracterization of Dr. Raimondi's statement. Without any explanation as to the rationale for the comment's agreement with its mischaracterization, the comment is without</p>

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	<p>(d) The estimation of fish production also assumes no current production - which is only true if wetlands are created, not restored.</p> <p>(e) Nordby's calculations are based on a 50 percent confidence level - inappropriate for mitigation calculations. A typical and more appropriate confidence level is 95 percent. (Raimondi, 3)</p> <p>(f) Nordby's calculations rely on fish production calculations (productivity of newly created wetlands) based on species that are entrained - resulting in double-counting.</p> <p>(g) The calculations incorrectly assume entrainment calculations equate to actual impact of entrainment.</p> <p>(h) Entrained species are also impinged - thus the impacts are additive, and cannot be mitigated through creation of wetlands that mitigate for entrainment</p>	<p>foundation.</p> <p>In his evaluation of Mr. Nordby's analysis, Dr. Raimondi did not reject the premise that Upper Newport Bay can serve as a basis for estimating the productivity of the mitigation wetlands (to the extent that the mitigation wetlands consist of intertidal habitat).</p> <p>(c) The MLMP does not prescribe a particular percentage mix of wetlands habitat types. The particular composition of the mitigation wetlands will be determined during the Restoration Plan development phase. See Response No. 316(b). The comment is mistaken that mudflat wetlands comprise 40 percent of the proposed wetlands.</p> <p>(d) Comment Noted.</p> <p>(e) The comment provides no factual basis for the assertion that a 95 percent confidence level is appropriate for impingement calculation. The Regional Board need not consider this issue, however, as confidence levels are a statistical tool rendered moot by the Board's requirement that the Discharger demonstrate empirically full offset of actual impingement.</p> <p>(f) Nordby appropriately excluded from the estimate of productivity available for impingement mitigation, the biomass required to be counted for entrainment mitigation. There was no double-counting in Mr. Nordby's species-specific analysis of productivity. For instance, while the productivity illustration includes substantial topsmelt biomass, the APF calculations</p>

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		<p>were not based on entrainment of this taxa.</p> <p>(g) Comment Noted.</p> <p>(h) Comment Noted</p>
S24	<p>(a) In light of recent studies reflecting the poor performance of compensatory wetlands creation, a very conservative approach should be taken in assigning productivity to wetland mitigation. (An Evaluation of Compensatory Mitigation Projects Permitted Under Clean Water Act Section 401 by the California State Water Resources Control Board, 1991-2002, (2007) Ambrose, et al). Two findings of the cited report are particularly relevant here:</p> <p>(b) - Given the low ecological condition of most mitigation wetlands, it seems likely that many mitigation projects did not replace the functions lost when wetlands were impacted.</p> <p>- A lack of explicit consideration of the full suite of functions, values, and services that will be lost through proposed impacts and might be gained through proposed mitigation sites and activities is at least partly due to regulatory agencies approving mitigation projects with conditions or criteria that are too heavily focused on the vegetation component of wetland function, with inadequate emphasis on hydrological and biogeochemical conditions and their associated functions and services.</p>	<p>(a) The productivity of the mitigation site(s) will be assured by the agency's enforced performance standards. The MLMP's performance standards reflect a "conservative approach" in assigning productivity to wetland mitigation by, for example, requiring that the restored wetlands support multiple and varied biological populations, including vascular plants and algae, fish, macrobenthic invertebrates, birds, and food chain support that are 95 percent similar to the same populations at up to four reference wetlands. Additionally, the performance standards require the habitat areas in the restored wetlands not to vary by more than 10% from the areas indicated in the Restoration Plan. This approach was approved by the Coastal Commission. The Regional Board and the Coastal Commission are authorized to determine project success or failure, based on the MLMP's rigorous performance standards, and to require any necessary measures to ensure continued compliance with CWC Section 13142.5(b). Moreover, the Regional Board has added an additional condition requiring that the mitigation site produce at least 1715.5 kg of fish productivity per year as defined in Order No. R9-2009-0038.</p> <p>(b) In this case, the complete ecological value of the Agua Hedionda Lagoon is not being eliminated. The proposed plant will not destroy an area of the environment, as suggested by commenter. When using EPS discharge water, the plant will have a</p>

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		<p>negligible effect on receiving waters. When drawing water directly from Agua Hedionda Lagoon without it first being used at the EPS, there is the potential for impingement and entrainment from the plant. These are very particularized effects that do not destroy the environment of the affected area. As a result, an appropriate mitigation project would seek to offset the specific alterations from the potential effects.</p> <p>It should be noted, however, that the MLMP accounts for the a suite of wetland functions, values, and services. For example, Sections 3.1 and 3.2 of the MLMP, incorporated in Chapter 6, provide minimum standards and objectives for the mitigation site(s), which among other things, provide that a site shall include habitat similar to the affected habitats in Agua Hedionda Lagoon and should provide maximum overall ecosystem benefits, e.g. maximum upland buffer and transition areas, enhancement of downstream fish values, provides regionally scarce habitat, potential for local ecosystem diversity, provides substantial fish habitat, provides rare or endangered species habitat, and provides for reproductively isolated populations of native California species. The MLMP also provides that the Restoration Plan for the mitigation site(s) must address hydrological and biogeochemical conditions. For example, the Restoration Plan must include, among other things, a detailed analysis of existing physical, biological and hydrological conditions, as well as an schematic restoration design that includes water control structures and control measures for stormwater. (MLMP Section 4.1)</p>
S25	The basic premise for compensatory mitigation is that the newly created or restored wetlands actually compensate for	Comment noted. Regional Board staff has reviewed the impact and mitigation calculations for their validity

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	the loss associated with the project. Thus, the mitigation required for CDP impingement must take into account the validity of the impact calculations and the validity of mitigation calculations. Put another way, we cannot be certain that the impingement calculations truly reflect actual impingement impacts. They serve as a proxy for actual impingement assessment. Thus, the highest level of statistical certainty must be applied to impingement impact calculations. This equates to a 95 percent confidence interval in Raimondi's study. (Raimondi, 4)	and have found those calculations to be valid.
S26	Second, the mitigation wetland productivity calculations should be conservative, as underscored by the lack of success in actual wetland mitigation. Thus, because wetland productivity assumptions are based on completely newly created wetlands, Poseidon must be required to actually create wetlands, as opposed to restoring them.	See Response No. S24. The monitoring program will adjust for existing productivity if wetlands are restored rather than created.
S27	Another assumption associated with wetland productivity relates to the type of wetland created. Poseidon's MLMP presents a mix of wetlands, comprised of 40 percent intertidal mudflats or subtidal. Dr. Raimondi's calculations associated with this mix should be used to provide a wetland mitigation acreage. (Raimondi, 6)	The particular composition of the mitigation wetlands will be determined during the Restoration Plan development phase. The Tentative Order amends the Minimization Plan to require the Discharger to sample the mitigation wetlands to demonstrate that 1,715.5 kg/yr of fish biomass (not reserved for entrainment compensation) is being produced. Discharger must satisfy this productivity requirement, notwithstanding the particular composition of the mitigation wetlands.
S28	The mitigation assessment study cited above also found "[t]he success of compensatory mitigation depends fundamentally on the mitigation requirements specified by the regulatory agencies." (Id. at v.) Thus, certain requirements regarding the success of compensatory mitigation must be imposed.	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 CDP will be mitigated.

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		<p>As proposed, the MLMP will: (1) Avoid or mitigate potential E&I from the Project's water intake; (2) Create or restore up to 55.4 acres of high-quality estuarine wetland habitat based on the best science available to mitigate Project-related E&I and likely result in a net biological benefit to the Southern California Bight; (3) Establish monitoring protocols and empower the Regional Board and the Coastal Commission with enforcement mechanisms to ensure potential E&I is accurately measured over time and that mitigation success targets consistently are achieved; (4) 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); (5) 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, (6) Authorize enforcing agencies to order remediation in the event the rigorous performance criteria are not met.</p> <p>Requirements regarding the success of the proposed mitigation include: (a) the Discharger's commitment to full mitigation of potential intake and mortality from the Project operations; (b) the MLMP's incorporation of strict, measurable performance standards; (c) specific timelines for submittal of proposed site(s) and a Preliminary Restoration Plan for Coastal Commission review and approval (MLMP Section 2.0); (d) identification of 11 pre-approved candidate mitigation</p>

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		<p>sites (MLMP Section 2.0); (e) minimum standards and objectives for the mitigation site selection (MLMP Sections 3.1 and 3.2); (f) detailed Restoration Plan requirements (MLMP Section 4.1); (g) 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 Section 5.0); and (h) a comprehensive administrative and procedural structure.</p> <p>Further, 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.</p> <p>Still further, the Minimization Plan requires that mitigation will be based on a fish biomass productivity requirement. If the wetlands produce less biomass than what is impinged by the desalination project, the Regional Board will have discretion at the next permit cycle to require greater mitigation that matches up to actual losses. However, if the wetlands produce more biomass than what is actually impinged, the Discharger would be given a credit that could be used against future mitigation requirements, for instance, if the desalination project were to be expanded, or if a change in circumstances led to greater future impingement.</p>
S29	Staff correctly points out that the success of MLMP entrainment mitigation is assessed through a 95 percent	Comment Noted.

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	<p>confidence interval of correlation in physical and biological criteria compared to (yet-unspecified) reference stations, for a period of three consecutive years. (Staff Report, 19). This iterative assessment may result in a period of time where the restored wetlands are not meeting these criteria.</p>	
<p>S30</p>	<p>For those years when the criteria are not met, the goal of compensatory mitigation-namely offsetting CDP impacts through productivity at the restored wetlands-is not being met. Thus, the whole basis for calculating the wetland mitigation is undermined. In order to account for this, a penalty for not meeting the performance criteria within a specified timeframe must be included in the permit. For example, if within 5 years of wetland restoration the 3-year benchmark is not attained, an additional 5 years of unmitigated impingement impacts must be taken into account. This would result in a total increased wetland restoration acreage. As the benchmark performance standards continue to be unmet, the penalty increases.</p>	<p>On the basis of speculation that the mitigation wetlands will not meet the criteria for some period of time, the comment asserts that the "whole basis for calculating the wetland mitigation is undermined." The comment is mistaken and makes an overbroad conclusion on the basis of an unsupported premise. The Minimization Plan authorizes the Regional Board to take remedial action regarding any noncompliance with the performance criteria for the proposed wetlands. Thus, if the circumstance described by the comment constituted non-compliance (which is not clear given the vague and ambiguous nature of the comment), the Regional Board has the authority necessary to address such a situation. It is elementary, however, that the planned wetlands will take a period of time after construction to establish to a point where comparison with the criteria is warranted. This phase-in and establishment period does not undermine the "whole basis," as asserted. The CDP is not yet constructed, is not causing impacts, and will cause no impacts unless and until EPS's discharge is insufficient to meet its source water needs. The Minimization Plan provides for mitigation sufficient to fully offset entrainment and impingement amounts associated with stand-alone operations, without claiming any credit for minimization from design and technology measures. This is the case even though the CDP is before the Regional Board to operate in co-location mode, when it will be using discharge water from the EPS when available to meet the CDP's</p>

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		<p>feedstock needs. The proposal is fully protective, even including the phase-in period.</p> <p>The MLMP's incorporates strict, measurable performance standards. If the wetland mitigation does not meet these performance criteria, the Regional Board's Executive Officer has the authority to impose remedial measures pursuant to the MLMP. Section 5.4 of the MLMP states:</p> <p>"Upon completion of construction of the wetland(s), monitoring shall be conducted to measure the success of the wetland(s) in achieving stated restoration goals (as specified in the Restoration Plan(s)) and in achieving performance standards, specified below. The permittee shall be fully responsible for any failure to meet these goals and standards during the facility's full operational years. Upon determining that the goals or standards are not achieved, the Executive Director shall prescribe remedial measures, after consultation with the permittee, which shall be immediately implemented by the permittee with Commission staff direction. If the permittee does not agree that remediation is necessary, the matter may be set for hearing and disposition by the Commission."</p> <p>The mitigation site(s) will be under construction during the early phases of construction of the CDP. This is appropriate timing for the construction of mitigation. At this time in the permitting process, the CDP has not yet been constructed, is not operating, and is not yet causing any intake or mortality of marine life such that mitigation would be warranted.</p>
S31	To summarize, at a minimum, the impingement compensatory mitigation should meet the following criteria[i]:	(1) The issue of confidence interval was raised by Dr. Raimondi in his April 1, 2009 statement. Confidence

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	<p>1) Impingement impacts should be calculated to a 95 percent confidence interval, as extrapolated by Dr. Raimondi from a 4.7kg/day (50 percent confidence interval) impact assessment.</p> <p>2) Impingement impacts should be calculated at a rate of 304 MGD attributable to CDP impacts, or calculated real-time.</p> <p>3) Impingement compensatory wetland productivity calculations must take into account the type of wetland created. If Poseidon's proposed mixture in the MLMP is applied to impingement mitigation, Dr. Raimondi's calculations should be used at a 95 percent confidence interval.</p> <p>4) Wetlands must be created, not restored.</p> <p>5) Penalties should be assessed when performance criteria are not met for a given period of time.</p>	<p>intervals rely on inferential statistics, according to Dr. Raimondi. Dr. Jenkins raised significant questions about the confidence intervals proposed by Dr. Raimondi. (Scott A. Jenkins, A Note on Confident Limits in Raimondi's April 1, 2009 RWQCB Report (April 8, 2009).)</p> <p>At the April 8, 2009 hearing, the Discharger agreed to undertake field programs to provide an empirical basis to ascertain whether 4.7 kg/day is the appropriate value by which to drive the Discharger's impingement mitigation obligation. It also agreed to conduct a field program at the mitigation site to demonstrate that the impingement mitigation obligation is being met.</p> <p>On balance, the Regional Board prefers the empirical approach discussed at the April 8 hearing. It is concerned that the approach using inferential statistics may be adding one level of conservatism on top of another, potentially resulting in a punitive mitigation condition. In contrast, the empirical approach relies on actual data from the field to true up the mitigation obligation, and adjust it, if necessary, on the basis of actual data, rather than statistical calculation.</p> <p>Taking an empirical approach also is warranted given the genesis of the 4.7 kg/day value that is driving the impingement obligation in the Tentative Order. This value is much higher than average impingement over 336 days in 1979-1980, and much higher than average impingement over fifty days in 2004-2005. While there was impingement much higher than 4.7 kg/day on two days in 2005, it is reasonable to believe that those values are not representative of long-term impingement over the life of the Project. The</p>

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		<p>Discharger has presented credible and substantial evidence that impingement at the CDP is likely to be on the order of 1.6 kg/day.</p> <p>Finally, the impingement obligation is based on the assumption that the CDP is getting no flow in the form of cooling water discharge from the EPS. While this condition may occur from time to time, it adds another conservative layer to the analysis and to the obligation. In other words, potential impingement is estimated “at a rate of 304 MGD attributable to CDP impacts,” as the comment recommends.</p> <p>(2) Comment noted. Impingement impacts are being calculated on the basis of a 304 MGD flow rate.</p> <p>(3) Comment noted.</p> <p>(4) The comment provides no legal support for its assertion that wetlands must not be restored. The MLMP provides for the creation or restoration of mitigation wetlands.</p> <p>(5) the comment provides no legal support for its assertion that penalty rules should be specified. The Regional Board retains authority to require the Discharger to take remedial measures in the event of non-compliance.</p>
S32	Using the above criteria, the required compensatory mitigation for impingement only, assuming 100 percent of CDP intake is attributable to CDP operations, a total of 54 additional acres of newly created wetlands (40 percent intertidal or subtidal) is required.	The comment simply summarizes Dr. Raimondi’s April 1 statement, which is addressed in above Responses.

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4/5/2009 email from Nancy and Richard Weaver		
150.	<p>We are for water desalination, but utmost respect for the Coastal areas and Marine life that will be affected, needs to be embodied in its planning and process from beginning-to-end.</p> <p>"Massive" action of desalination does not have to cause Massive death to innumerable species of Life.</p> <p>"Fixing in other locations" the massive damage that Poseidon will do locally, under its current proposal, does Nothing to alleviate or even avoid the planned, massive damage done to local life forms.</p> <p>The Sub-Sea-floor Intakes will allow far greater beneficial results for generations to come, not only for people but for all the variety of species affected.</p> <p>It is far easier and less costly to adjust planning and process before starting this precedent-setting desalination plant in Carlsbad. Being conscious now will produce fewer or less-difficult problems for both ourselves and our descendents.</p> <p>Setting precedent for wise, sustainable ocean desalination is the mandate of this time.</p>	Comments noted.
4/6/2009 letter from Coastal Commission		
151.	<p>IMPINGEMENT EFFECTS AND MITIGATION: Section 5.2 of the proposed Plan includes Poseidon's recent impingement analysis showing the Project would cause greater adverse impingement impacts than had been previously disclosed or evaluated. The Project is now expected to impinge, on</p>	<p>Comments noted.</p> <p>The Regional Board did not take into consideration the Coastal Commission's evaluation of impacts. Rather it conducted an independent evaluation based on</p>

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	average, several hundred fish per day, weighing a total of from about 4.7 to 7.2 kilograms per day. Please note that the Commission in November 2007 had found that the Project's expected impingement impacts would be de minimis however, that finding was based in part on previous information from Poseidon showing that expected impingement would be several times lower, at 0.96 kilograms per day. The Commission did not have these recently submitted higher figures available to it and the Commission's findings did not consider the resulting higher level of adverse impacts.	information received in the Mitigation Plan and determined that 4.7 kg/day is a reasonable, conservative estimate of impingement associated with CDP's projected operations under co-located conditions and notes that the Discharger has agreed to meet a fish productivity standard of 1715.5 kg/year, derived from the estimate of 4.7 kg/day, in the mitigation wetlands.
152.	Given the problems Dr. Raimondi identified in Poseidon's recent impingement analyses and the substantial doubts he raises about the adequacy of Poseidon's impingement impact assessment and proposed mitigation, we recommend the Board not adopt Poseidon's analyses as the basis of a Board decision about the amount of mitigation needed to address the Project's impingement effects. As noted above, Poseidon's recent identification of higher impingement levels may not be consistent with the Commission's de minimis findings and are not included in the Commission's determination of adequate mitigation. We instead recommend the two measures described below to ensure impingement impacts are reduced and to allow consistency with the Commission's findings. we therefore recommend the Board adopt conditions that require Poseidon to operate at or below the above referenced flow rate and to monitor its impingement and adult fish productivity.	Comment noted. The Regional Board did impose impingement monitoring. See response to Comment 50.
153.	RATE OF MARINE LIFE MORTALITY CAUSED BY THE PROJECT: we recommend the Board find that the Project is likely to result in 100% entrainment mortality	The Board's analyses were based on the assumption of 100% mortality of all organisms impinged and entrained.
154.	STEWARDSHIP OF AGUA HEDIONDA LAGOON: We have not yet been provided with information about Poseidon's	Comment noted. This will be considered if/when Poseidon proposes this to the Board.

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	ability to act as steward (e.g., its ownership of the Lagoon or approvals from landowners in and around the Lagoon to take on stewardship activities); however, should Poseidon take on this role, we recommend the Plan be modified to properly recognize the Lagoon's many other resources and beneficial uses	
155.	TIMING OF PROJECT-RELATED IMPACTS AND MITIGATION: Poseidon's proposed Plan suggests that its facility will result in only de minimis impacts until the power plant shuts down permanently. We recommend the Board replace the Plan's references to permanent cessation of power plant operations with references to power plant operations of less than 304MGD.	To clarify, the Regional Board has already determined that when EPS flows are 304 MGD or greater, Poseidon's impacts are indeed de minimis. Order No. R9-2009-0038 serves to determine compliance with 13142.5 when the EPS intake is being operated for the benefit for the benefit of CDP. Measure that will be implemented to comply with Porter-Cologne as a stand-alone facility will be evaluated at the time that Poseidon submits a Report of Waste Discharge to operate as a stand-alone facility.
156.	SITE SELECTION: The Commission's mitigation approval allows Poseidon to conduct its wetland restoration at up to two of the eleven identified potential sites between Ventura and the Mexican border (although with additional review and approval, Poseidon may conduct restoration at more than two sites or at different sites). We recommend Poseidon and the Board consider opportunities to work with these entities and with Coastal Commission and State Lands Commission staff to create larger restoration areas.	Comments noted.
157.	NEED FOR ONGOING ASSESSMENT AND COORDINATION TO FURTHER REDUCE PROJECT IMPACTS: We concur with the Board's proposed approach to allow ongoing review of potential alternatives that may reduce the Project's adverse marine life impacts.	Comment noted.

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4/6/2009 letter from Coast Law Group		
158.	<p>Procedural Objections</p> <p>The fact that significant new information continues to unfold – including evidence of applicant misrepresentation and scientifically unsound data and statistical analyses – at such a late date indicates that prior agency approvals were likely premature, and importantly, that a sound foundation of data for impacts assessment was never actually generated. Because we are nearing the end of the regulatory process, these procedural problems and their implications must be understood and appreciated by the Board. The public, unquestionably more limited in resources than the applicant, has been told to respond to mitigation plans within specific comment periods, only to have the plans change and significant new “expert” reports and materials arrive at the last minute. To expect that the public, including the Environmental Groups, have the resources to provide multiple in-depth meaningful reviews of the reams of documents submitted by Poseidon at every twist and turn of the regulatory process is unrealistic and contrary to the Water Code’s consideration of the public’s important role in water resource issues. (See e.g. Ca. Water Code §13292)</p>	<p>Comment noted.</p> <p>See response to Comment 44.</p>
S33	<p>In this regard, the City of Carlsbad’s EIR, well beyond the time for challenge, reflects an entirely different approach to impacts assessment than now before the Board.</p>	<p>The Carlsbad EIR evaluated the Project’s marine life impacts under CEQA and determined that the Project would not have significant impacts to marine life from entrainment or impingement, whether operating as a co-located or stand-alone facility. Adoption of the NPDES Permit was exempt from further CEQA review pursuant to CWC Section 13389, and the NPDES Permit incorporated the EIR’s conclusion that the Project would not have significant marine life impacts. The commenter is correct that the EIR is no longer subject to challenge, and it is now conclusively</p>

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		<p>established that the EIR complies with CEQA.</p> <p>The Regional Board's review of the Minimization Plan is pursuant to CWC Section 13142.5(b), not CEQA. CWC Section 13142.5(b) provides a different standard of review than CEQA, requiring the best feasible and available measures to minimize intake and marine life mortality regardless of whether there are significant impacts under CEQA.</p>
S34	<p>That entrainment impacts are to be significant is no longer reasonably in debate, yet Poseidon continues to assert based on the EIR that any mitigation it provides is more charitable than scientifically required to offset impacts.</p>	<p>The Regional Board does not understand the Discharger to be claiming that its mitigation is in the nature of charity. Estimations of the CDP's potential entrainment are premised on conservative assumptions that ensure that the Discharger will offset fully any entrainment from its stand-alone operations.</p>
S35	<p>Based upon third-party independent review, the EIR conclusions regarding <i>di minimus</i> impingement impacts are also no longer valid. The EIR should hardly be referenced, let alone relied upon for PC compliance.</p>	<p>The Regional Board has conducted its own independent review of the Minimization Plan for compliance with CWC Section 13142.5(b) and has not relied upon the EIR as a substitute for such review, though many of the facts and analyses contained within the EIR are necessarily informative to the Regional Board's review. The Regional Board does not opine as to whether the impingement associated with the project is <i>de minimis</i>, as impingement is required to be fully offset in the mitigation wetlands.</p> <p>The Regional Board notes, however, that its proceedings do not reopen the City of Carlsbad's EIR, and the statute of limitations to challenge that EIR and its conclusions has long since lapsed. Pub. Res. Code Section 21167(c). Therefore, the EIR is "conclusively presumed to comply" with the provisions of CEQA. Pub. Res. Code Section 21167.2. "This presumption</p>

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		<p>acts to preclude reopening the CEQA process even if the initial EIR is discovered to have been fundamentally inaccurate or misleading in the description of a significant effect or the severity of its consequences. After certification, the interests of finality are favored over the policy of encouraging public comment." <i>Laurel Heights Improvement Ass'n v. Regents of Univ. of Cal.</i>, 6 Cal. 4th 1112, 1130 (1993). The EIR is no longer subject to challenge, and it is now conclusively established that the Project will not have significant marine life impacts pursuant to CEQA, operating with or without the EPS. See also Response No. 130. To the extent that the comment refers to Dr. Raimondi's April 1, 2009 statement, that statement has no legal effect on the EIR, and was not prepared as part of a CEQA proceeding.</p> <p>The Regional Board also notes that its present review is limited to approval of co-location operations for CDP benefit, but the Carlsbad EIR analyzed stand-alone operations in reaching the <i>de minimis</i> conclusion. In addition, the CEQA standard applied in the EIR is different than the standard being applied in this proceeding.</p>
S36	Should the Environmental Groups succeed in requiring preparation of a Supplemental EIR by the State Lands Commission, reliance upon the faulty EIR here by the Board could render its approvals null and void.	The SLC approved the lease for the CDP on August 22, 2008. The Regional Board is not aware that the SLC is planning to conduct a Supplemental EIR. The comment's claim is speculative, without foundation, and not directly relevant. While the comment describes the EIR as "faulty," the EIR is conclusively presumed valid under CEQA and is no longer subject to challenge. Regardless, the Regional Board is conducting an independent evaluation of the Minimization Plan pursuant to CWC Section 13142.5(b).

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S37	<p>At the Coastal Commission, Poseidon repeatedly took the position that it was the Regional Board that had primary jurisdiction over entrainment and impingement mitigation (and PC 13142.5 compliance in general). Poseidon’s implication, if not directly expressed, was that the Commission need not worry if it missed a piece of the mitigation or environmental review puzzle because the Regional Board would certainly ensure all potential impacts were mitigated as legally required by the Water Code. And yet, the Board will certainly hear Poseidon repeat its mantra that because every agency that has looked at the project thus far has approved it, the Board should not add mitigation obligations or other project conditions beyond those already required. This is particularly true with respect to impingement impacts, discussed further below. Poseidon’s attempts to “have its cake and eat it too” should be rebuffed by the Board, with focus on strict PC compliance maintained.</p>	<p>Under the terms of the Minimization Plan, the CDP will comply with CWC Section 13142.5(b) in that it will use the best available site, design, technology, and mitigation measures feasible to minimize the intake and mortality of marine life. As an additional condition, the Regional Board will impose impingement monitoring at the intake and fish biomass productivity monitoring at the mitigation site(s) to assure that impingement is offset fully by the mitigation site(s).</p>
S38	<p>Because we are nearing the end of the regulatory process, these procedural problems and their implications must be understood and appreciated by the Board. The public, unquestionably more limited in resources than the applicant, has been told to respond to mitigation plans within specific comment periods, only to have the plans change and significant new “expert” reports and materials arrive at the last minute. To expect that the public, including the Environmental Groups, have the resources to provide multiple in-depth meaningful reviews of the reams of documents submitted by Poseidon at every twist and turn of the regulatory process is unrealistic and contrary to the Water Code’s consideration of the public’s important role in water resource issues. (See e.g. Ca. Water Code §13292) That these submissions take place within days and even hours of final decisions should be seen as a reflection of the project’s inherent flaws, and yet further evidence of Poseidon’s attempts to “game the system.”</p>	<p>Under CWC Section 13292, the State Board is required to provide guidance to the regional boards in matters of procedure, policy and regulation. To ensure that the Regional Boards are providing fair, timely, and equal access to all participants in Regional Board proceedings, the State Board must undertake a review of the Regional Boards’ public participation procedures, and report to the legislature regarding its findings and recommendations. In addition, the State Board is required to provide annual training to Regional Board members to improve public participation and adjudication procedures.</p> <p>The Regional Board has complied with all federal and state laws and regulations relating to public participation. The Regional Board has provided ample opportunity for public participation. Specifically, the Regional Board has provided public comment periods</p>

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		<p>lasting at least one month preceding public hearings in June of 2006, August of 2006, April of 2008, February of 2009 and April of 2009. The Regional Board has received numerous public comments, has considered all public comments carefully during its deliberations and has responded to all significant public comments.</p> <p>The Regional Board has conducted an extensive, years-long review of the CDP's potential for impingement and entrainment, and is requiring full offset through mitigation. The process has been fair.</p>
S39	<p>Poseidon faced significant and well reasoned staff opposition at the Coastal Commission, yet politics prevailed and much expert analysis (including independent third-party review) was ignored or given short shrift. Poseidon faced staff opposition at the State Lands Commission, and again prevailed on political lobbying coupled with drought policy arguments over science.</p>	<p>Dr. Raimondi's results were incorporated by the Coastal Commission. Expert agency input in that process was incorporated and is reflected in the MLMP, as approved by the Coastal Commission.</p> <p>The comment provides no specific facts to support its premise.</p>
S40	<p>In light of comments by Regional Board members at the February 11, 2009 hearing, we have every reason to believe a majority of the Board has already made up its mind to approve the CDP regardless of the impacts and mitigation obligations warranted by evidence in the record. We nonetheless implore Board members to approach this (potentially) final hearing with an open mind, confidence in staff, and particular deference to third-party independent review of complex scientific material beyond individual Board members' expertise. While the Board may still be inclined to approve the project, it should do so only with appropriate conditions and mitigation measures required.</p>	<p>The Regional Board has conducted an extensive, years-long review of the CDP's potential for impingement and entrainment, and is requiring full offset through mitigation. Further, the Minimization Plan provides for the use of the best available site, design, and technology measures feasible to minimize the intake and mortality of marine life.</p> <p>The comment provides no specific facts to support its premise.</p>
159.	<p>Co-Located Approval v. Stand-Alone Analysis The March 9, 2009 staff report indicates the CDP is being considered for approval solely as a co-located facility, but that assessment</p>	<p>New language has been added as a trigger to specify under what condition the discharger must submit a new report of waste discharge to operate as a stand-</p>

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	<p>and mitigation of impacts at intake volumes reflecting stand-alone operations is necessary. The rationale for this approach is founded on expectation that there will likely be intermittent periods of CDP operation where the full 304mgd of CDP intake requirement will be pumped solely for the benefit of CDP. As a preliminary policy-based matter, we believe the CDP should be conditioned to allow production of potable water only at quantities supported by EPS flow requirements. The Environmental Groups therefore recommend that if for any given quarter (3 month period), the EPS intake flows are less than 50% of the CDP's needs (152mgd), then the CDP permit should be reopened and PC 13142.5 reassessment required.</p>	<p>alone facility.</p> <p>New language has also been added as a trigger to specify when the discharger must submit a technical report that identifies additional feasible measures the discharger can implement to reduce intake impingement and entrainment impacts if all power generating units at EPS are shut down for prolonged periods, but are not permanently shut down.</p> <p>In addition, any argument to allow production only at EPS flows should have been raised during the issuance of the NPDES permit.</p>
S41	<p>The Tentative Order recommends additional PC 13142.5 review only when the "EPS permanently ceases operations and the Discharger proposes to independently operate the existing EPS seawater intake and outfall for the benefit of the CDP..." This all-or-nothing standard has many problems.</p> <p>Foremost, it incentivizes continued operation of the EPS and the environmentally undesirable OTC infrastructure. The owners of the EPS are seeking to construct a new, more efficient power plant adjacent to the EPS. In fact, the EPS would be entirely retired in relatively short order but for the fact that the California Independent System Operator has determined a portion of the EPS is necessary for electricity grid reliability (pending construction of additional energy generating or transmitting facilities). As such, the EPS is expected to run at very low operational capacities, with attendant reductions in intake flows</p>	<p>The comment reflects a misunderstanding of the rationale for the permanent cessation trigger. It is based on the Discharger's lack of access to the intake system while the intakes continue to be used, at any level, as part of power plant operations. Even assuming that the EPS were to run at low operational capacities, these access constraints would remain. In light of the possibility that EPS flows would be less than 304 MGD for part of the time and may even be zero from time to time, the Regional Board required the Discharger to offset potential entrainment and impingement as if the EPS were not operating at all. This very conservative approach renders the permanent cessation approach fully protective.</p> <p>It is hard to understand how the permanent cessation standard incentivizes OTC infrastructure. The new power plant to which the comment refers is not an OTC proposal. If approved, the proposed project, called the Carlsbad Energy Center, would be a 558 MW gross combined-cycle generating facility</p>

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		<p>configured using two units with one natural-gas-fired combustion turbine and one steam turbine. The Carlsbad Energy Center would be air-cooled and would not employ once-through ocean water cooling. If the comment were right, then one would expect the proposal for the Carlsbad Energy Center to call for continued OTC operations.</p> <p>In addition, it is not the Regional Board's role to incentivize OTC, or not. Rather, the Regional Board's role is to regulate OTC used by power plants under both state and federal law. Regional Board review of EPS's OTC infrastructure and operation is scheduled to begin on April 14, 2011, when a Report of Waste Discharge for the power plant is due.</p> <p>It is speculation whether the EPS would be retired in short order absent certain Cal-ISO determinations, referred to in the comment.</p>
S42	If CDP approval requires PC 13142.5 compliance reconsideration only once the EPS goes away entirely, it is certain Poseidon will apply every bit of political leverage possible to ensure the EPS remains in place regardless of environmental benefits associated with its demise. Hence, a different "trigger" is warranted.	Comment Noted.
S43	Second, the all-or-nothing standard for reopening the CDP permit would prolong such consideration in circumstances where only a relatively small portion of the CDP intake is required for EPS maintenance.	Comment Noted.
S44	The Environmental Groups therefore recommend that if for any given quarter (3 month period), the EPS intake flows are less than 50% of the CDP's needs (152mgd), then the CDP permit should be reopened and PC 13142.5 reassessment	The recommendation to reopen the CDP permit when the EPS intake flows are less than 50%, represented at 152 million gallons per day, is neither necessary nor warranted.

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	required. Such a condition would accurately reflect the CDP's position in driving total intake flows, and appropriately justify reconsideration of the project at this location. At the same time, the benefits of co-location would be recognized only where legally and rationally justifiable	
S45	Specifically, Poseidon should be put on notice that the site analysis conducted thus far is predicated upon the benefits of co-location with the EPS, and that evidence in the record regarding site-specific infeasibility of alternative intakes may serve to preclude continued operation of the facility at currently proposed levels once the stand-alone review is triggered. Poseidon is clearly betting that capital investment in the construction of the co-located facility coupled with numerous water districts' reliance ⁴ on desalinated water to meet demand, there will be overwhelming pressure to maintain such service regardless of EPS OTC infrastructure availability. There should be no question that site analysis will be part of the stand-alone reassessment under PC 13142.5. Should the Board refuse to make this point clear, then the existing site analysis is clearly insufficient and the Project cannot be approved based upon the current record.	<p>The Regional Board's present evaluation of the CDP and the Minimization Plan is limited to minimization efforts related to operation of the CDP as co-located with the EPS for CDP benefit. This is consistent with the description of the Discharger's proposed CDP operation in its Report of Waste Discharge and in Order No. R9-2006-0065.</p> <p>Additional evaluation of the CDP's operations pursuant to CWC Section 13142.5(b) would be necessary if EPS permanently ceases power generation operations and the Discharger submits a new Report of Waste Discharge to operate EPS's seawater intake and outfall independently for the benefit of the CDP in a "stand-alone" capacity. In the event the CDP seeks to become a stand-alone facility, the Regional Board will consider all relevant factors under CWC Section 13142.5(b). Accordingly, the existing site analysis of a co-located CDP is not insufficient.</p>
S46	But, given (a) the overwhelming evidence indicating relatively near term cessation of OTC throughout the country due to legal constraints and ongoing advances in power generation technology, and (b) the site-specific circumstance of EPS replacement and OTC phase-out, allowing the CDP to be built in a location without alternative intake capabilities is much like allowing construction of a house directly within the path of a planned future highway. Poseidon must be made aware that investment in such a scheme carries significant inherent risk that the facility may have to be	This comment appears to argue that co-location adjacent to the EPS does not satisfy CWC Section 13142.5(b). The Regional Board disagrees that the speculative phase-out of OTC, and the potential for the Carlsbad Energy Center to replace the EPS, makes the site analysis infirm. The Regional Board is unaware of any near-term cessation of OTC, and the comment provides no specific information on how or why OTC cessation will be mandated legally or result from power generation technology. For

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	<p>abandoned or drastically modified once the EPS is gone.</p>	<p>example, the Regional Board is aware of no plans to cease OTC at the San Onofre Nuclear Generating Station. The Regional Board also notes that in its recent decision, <i>Entergy Corp. v. Riverkeeper</i>, 129 S. Ct. 1498, 1504 (2009) (<i>Riverkeeper III</i>) the United States Supreme Court pointed out that the EPA considered but declined to mandate the elimination of OTC because, while closed-cycle cooling could reduce impingement and entrainment mortality, the cost of rendering existing facilities would be nine times the cost of compliance with OTC performance standards, which produce ranges of impingement and entrainment that are similar to closed-cycle systems with fewer implementation problems.</p> <p>Even if OTC were phased out across the country, it does not run that co-location with the EPS is problematic. Under the Carlsbad Energy Center proposal, Units 4 and 5 of the EPS intake would continue to operate, which have the capacity to meet fully the CDP's feedstock needs, even though this would not be after OTC.</p>
<p>160.</p>	<p>PC Section 13142.5 Analysis – Site PC 13142.5 mandates that the project use the best available site feasible to minimize marine life mortality. The first step to appropriate site analysis for PC 13142.5 compliance is establishment of a legally viable and factually accurate project scope, also described as the project purpose or project objective.</p> <p>Poseidon's framework for restricting site alternative analysis does not take into account the means by which water is currently conveyed to and within the San Diego region.</p>	<p>See response to Comment 45.</p> <p>To determine whether the alternative sites evaluated by the Discharger are feasible under conditions of co-location operation for CDP benefit, the Board has examined the fundamental project objectives of the CDP, based on the evidence before it, including the objectives as described by the Discharger and the City of Carlsbad in its comments, the objectives as described in the EIR certified by the City of Carlsbad, and the project objectives as described in the August 6, 2008 findings of the Coastal Commission. The</p>

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		<p>Discharger defines the CDP's fundamental project objectives as: (1) allowing Carlsbad to purchase 100 percent of its potable water supply needs from the desalination plant, thus providing a secure, local water supply that is not subject to the variations of drought or political or legal constraints; (2) reducing local dependence on water imported from outside the San Diego County area and from outside of Carlsbad and surrounding areas; (3) providing water at or below the cost of imported water supplies; and (4) meeting the CDP's planned contribution of desalinated water as a component of regional water supply planning goals. The objectives are summarized in the Environmental Impact Report certified by the City of Carlsbad for the CDP and related findings adopted by the City, and on page 14 of 106 of the findings adopted on August 6, 2008 by the California Coastal Commission for the Coastal Development Permit adopted for the project. The Board has considered these fundamental objectives, and the availability of the existing intake at EPS in evaluating alternative sites and determining that the Minimization Plan uses the best available feasible site under conditions of co-located operation.</p>
161.	<p>PC Section 13142.5 Analysis - Design and Technology The structure and wording of PC 13142.5 clearly demonstrate the legislature's intent that coastal dependent industrial facilities be planned with a holistic consideration for minimization of marine life mortality. Hence, where technologies are available to minimize marine life mortality, industrial facilities should be designed around such opportunities.</p> <p>The CDP has not been designed with technologies to minimize marine life mortality as a standalone facility. This</p>	<p>See response to Comment 160.</p> <p>Also, the Regional Board has made clear in Order No. R9-2006-0065 and in this Order that evaluation of compliance with Water Code section 13142.5(b) will be required if the CDP notifies the Board of its intent to operate as a stand-alone facility.</p>

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	<p>much is clear. Virtually every technological option described, from alternative intakes to impingement reduction screens are discarded because they are not feasible in conjunction with a co-located CDP and EPS. The difficult question for the Board is when, and to what extent, design and technological alternatives can be required for the stand-alone condition. The Environmental Groups believe that PC 13142.5 requires assessment of these factors for the stand-alone condition now, as relinquishment of OTC infrastructure by the EPS is reasonably foreseeable.</p>	
S47	<p>First, it is a legal fallacy and mere regulatory construct that the CDP design options must be limited to those that will produce 50 mgd of potable water. No one disagrees the needs of the San Diego region are well beyond the 50 mgd benchmark. Nor is there disagreement that a reliable source of water controlled by local entities would be beneficial. But, the history of the CDP, including the involvement of the County Water Authority as a potential owner/permittee, sheds light on how the 56,000 acre foot (approx. 50 mgd) was manufactured as a target production floor. Such information is already in the record, and will not be repeated here. The number could just as easily been 25 mgd, or 100 mgd. No rational basis exists in the record to support the 50 mgd volume as the only reasonable size for the CDP, yet other sized design options have been summarily discarded.</p>	<p>The Regional Board does not agree with Commenter's suggestion that there is no rational basis to support the finding that a facility with a capacity of 50 MGD desalinated water is appropriate.</p>
S48	<p>Indeed, PC 13142.5 contemplates that the size of the plant (i.e. the design) will be driven by minimization of marine life mortality, not a strict adherence to an artificially identified volume goal</p>	<p>Commenter does not provide any support for this interpretation of CWC Section 13142.5(b), and the Regional Board does not agree with this interpretation. The Regional Board disagrees that CWC Section 13142.5(b) places limitations on the size of the CDP.</p>
S49	<p>The CDP has not been designed with technologies to minimize marine life mortality as a standalone facility. This much is clear. Virtually every technological option described,</p>	<p>The Regional Board's present evaluation of the proposed project is limited to minimization applicable to co-location operation for CDP benefit – not a stand-</p>

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	<p>from alternative intakes to impingement reduction screens are discarded because they are not feasible in conjunction with a co-located CDP and EPS.</p>	<p>alone facility. Evaluation of additional or different technologies at the intake would be necessary if the EPS permanently ceases power generation operations, and the Discharger proposes, through a new Report of Waste Discharge, to operate the EPS's seawater intake and outfall independently for the benefit of the CDP in a "stand-alone" capacity.</p> <p>Under CWC Section 13142.5(b), the Discharger is obligated to use the best available technology feasible. In addition to considering limitations attributable to the EPS's operations, Discharger's feasibility analysis considered several factors, including project timing, economic concerns, environmental costs, and technological limitations. The comment is mistaken to the extent it suggests that a single factor was used in the technology evaluation.</p> <p>For example, the Discharger conducted a thorough review of design and technology features, including alternative intakes, alternative screening technologies, and desalination technologies, to minimize marine life mortality under co-located operating conditions. With regard to alternative intakes, the CDP's hydrogeologic studies confirm that none of the alternative intakes evaluated are capable of delivering the 304 MGD of seawater needed for environmentally safe operation of the CDP. Furthermore, the quality of the water available from the subsurface intake would be untreatable due to an extremely high salinity level, excessive iron, and high suspended solids. The Coastal Commission found, and the Regional Board agrees, that alternative intakes that might avoid or minimize environmental impacts are infeasible or would cause greater environmental impacts. See</p>

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		Coastal Commission Recommended Revised Findings, Coastal Development Permit for the Discharger Carlsbad Desalination Project, page 80 of 133 (Previously submitted January 26, 2009, Latham & Watkins LLP Comments, Appendix A.).
162.	<p>Impingement Poseidon's assertion that .5 feet/second (fps) velocity at inlet screens will reduce impingement to insignificant levels is unsupported. We concur with Staff's determination that most impingement intake and mortality occurs at the rotating screens rather than on the bar racks.</p>	<p>The Regional Board has not relied specifically on a particular intake velocity in establishing its findings and requirements as contained in the Tentative Order. When CDP proposes to operate as a stand-alone facility, with EPS generating units permanently shut down, a new analysis will be required to ensure compliance with Water Code section 13142.5(b).</p> <p>See response to Comment 50.</p>
S50	Further, installation of VFDs on CDP intake pumps to reduce total intake flow for the desalination facility will only reduce intake flow for up to 104 MGD, as 200 MGD (dilution seawater) never flows to the desalination plant. Any reduction of impingement through use of VFDs (which is unvalidated and unquantified) is therefore only attributable to that portion of flows going directly to the CDP. (April 1, 2009 Staff Report at 10). As Poseidon does not currently "take credit" for VFDs, or propose to use any design or technology measures to reduce impingement, we offer this position to rebut any future attempts to "take credit" for such measures.	Comment Noted.
163.	<p>Calculation Impingement Attributable to CDP Operations Poseidon's individual sampling impingement rates are calculated as follows: average impingement weight, divided by the associated flow volume for the sampling day, multiplied by 304 MGD. These resulting "weights" are then averaged. Two sampling events had higher associated impingement rates. Poseidon argues for their exclusion, while Dr. Raimondi and staff believe they should remain in the data</p>	<p>Comments noted.</p> <p>See response to Comments 135 and 136.</p>

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	set. We concur with Dr. Raimondi and staff: the two data points with high associated impingement rates should not be considered outliers.	
164.	<p>Heat Treatments The impingement impact calculation also seems to reflect only "normal operations" and not heat treatments. Poseidon and Raimondi's calculations do not take into account the proportion of organisms killed during heat treatments attributable to Poseidon's flows. If EPS intake pumps are operating for the benefit of CDP, a larger number of organisms will be present in the intake channel than would occur if CDP were not operating.</p>	<p>The March 27, 2009 staff report suggested that, if operation of the CDP should lead to the need for more frequent heat treatment of the EPS intake facility, then it would be reasonable to include in the CDP incremental impact a corresponding portion of the impingement impacts due to heat treatments.</p> <p>In response, Poseidon submitted a statement (Le Page Statement, April 8, 2009) indicating that the frequency of heat treatment at Encina is "a matter of industry standard" and that "since heat treatment frequency is a standard maintenance issue at set intervals regardless of flow rates, there are no logical reasons to assume that the frequency of heat treatments will change as a result of any potential increase in water flow from the CDP over the power plant's projected water demand."</p> <p>As it does not appear that the operation of the CDP under co-located conditions will lead to the need for more frequent heat treatment of the EPS intake facility, it cannot be concluded that the CDP will cause additional heat-treatment related impingement. Thus, the Regional Board finds that it would not be reasonable to include heat treatment-related impingement when projecting the CDP's impingement.</p>
165.	<p>Poseidon's Proposed Impingement Mitigation Measures Based on Dr. Raimondi's review of Chris Nordby's analysis, Poseidon's proposed mitigation for impingement is wholly inadequate. We agree with Dr. Raimondi's assessment that</p>	<p>The Board considered Dr. Raimondi's statement, and Poseidon's rebuttal to Dr. Raimondi's statement, and decided to implement a productivity standard, and corresponding productivity monitoring, to determine</p>

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	<p>the approach used by Poseidon (and Nordby) is flawed for the following reasons:</p> <ul style="list-style-type: none"> • Entrainment compensation cannot also be used for impingement compensation. (Raimondi, 1-2) • Nordby's approach relies on a 27-year old study by Larry Allen that is inapplicable here. • Nordby's estimation of fish production is based on mudflat wetlands, which only comprise 40 percent of Poseidon's proposed entrainment mitigation (as adopted by the CCC). • The estimation of fish production also assumes no current production - which is only true if wetlands are created, not restored. The MLMP contemplates significant restoration, but because the site or sites have not been identified, quantification of restoration and creation acreages is not possible. • Nordby's calculations are based on a 50 percent confidence level. The accepted scientific standard is 95%, and the Coastal Commission precedent is 80% for the MLMP mitigation calculations. (Raimondi, 3). • Nordby's calculations rely on fish production calculations (productivity of newly created wetlands) based on species that are entrained, which results in "double-counting". • The calculations incorrectly assume entrainment calculations equate to actual impact of entrainment. • Entrained species are also impinged - thus the impacts are additive, and cannot be mitigated through creation or restoration of wetlands that mitigate for entrainment 	<p>whether the proposed mitigation will be sufficient.</p>

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S51	<p>Two findings of the Mitigation Success Study are particularly relevant here:</p> <ul style="list-style-type: none"> • Given the low ecological condition of most mitigation wetlands, it seems likely that many mitigation projects did not replace the functions lost when wetlands were impacted. • A lack of explicit consideration of the full suite of functions, values, and services that will be lost through proposed impacts and might be gained through proposed mitigation sites and activities is at least partly due to regulatory agencies approving mitigation projects with conditions or criteria that are too heavily focused on the vegetation component of wetland function, with inadequate emphasis on hydrological and biogeochemical conditions and their associated functions and services. 	See Response No. S24(b).
S52	<p>The basic premise for compensatory mitigation is that the newly created or restored wetlands actually compensate for the loss associated with the project. Thus, the mitigation required for CDP impingement must take into account the validity of the impact calculations and the validity of mitigation calculations. Put another way, we cannot be certain that the impingement calculations truly reflect actual impingement impacts. They serve as a proxy for actual impingement assessment. Thus, the highest level of statistical certainty must be applied to impingement impact calculations. This equates to a 95 percent confidence interval in Raimondi's study. (Raimondi, 4)</p>	Comment noted. Regional Board staff has reviewed the impact and mitigation calculations for their validity and have found those calculations to be valid.
S53	<p>Second, the mitigation wetland productivity calculations should be conservative, as underscored by the lack of success in actual wetland mitigation. Thus, because wetland productivity assumptions are based on completely newly created wetlands, Poseidon must be required to actually</p>	See Response No. S24(a).

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	create wetlands, as opposed to restoring them.	
S54	Another assumption associated with wetland productivity relates to the type of wetland created. Poseidon's MLMP presents a mix of wetlands, comprised of 40 percent intertidal mudflats or subtidal. Dr. Raimondi's calculations associated with this mix should be used to provide a wetland mitigation acreage. (Raimondi, 6)	<p>The MLMP does not prescribe a particular percentage mix of wetlands for the mitigation site(s). The particular composition of the mitigation wetlands will be determined during the Restoration Plan development phase.</p> <p>The Tentative Order amends the Minimization Plan to require the Discharger to sample the mitigation wetlands to demonstrate that 1,715.5 kg/yr of fish biomass (not reserved for entrainment compensation) is being produced. Discharger must satisfy this productivity requirement, notwithstanding the particular composition of the mitigation wetlands.</p>
S55	Staff correctly points out that the success of MLMP entrainment mitigation is assessed through a 95 percent confidence interval of correlation in physical and biological criteria compared to (yet-unspecified) reference stations, for a period of three consecutive years. (Staff Report, 19).	Comment Noted.
S56	This iterative assessment may result in a period of time where the restored wetlands are not meeting these criteria. For those years when the criteria are not met, the goal of compensatory mitigation-namely offsetting CDP impacts through productivity at the restored wetlands-is not being met. Thus, the whole basis for calculating the wetland mitigation is undermined. In order to account for this, a penalty for not meeting the performance criteria within a specified timeframe must be included in the permit. For example, if within 5 years of wetland restoration the 3-year benchmark is not attained, an additional 5 years of unmitigated impingement impacts must be taken into account. This would result in a total increased wetland restoration acreage. As the benchmark performance standards continue to be unmet, the penalty increases.	On the basis of speculation that the mitigation wetlands will not meet the criteria for some period of time, the comment asserts that the "whole basis for calculating the wetland mitigation is undermined." The comment is mistaken and makes an overbroad conclusion on the basis of an unsupported premise. The Minimization Plan authorizes the Regional Board to take remedial action regarding any noncompliance with the performance criteria for the proposed wetlands. Thus, if the circumstance described by the comment constituted non-compliance (which is not clear given the vague and ambiguous nature of the comment), the Regional Board has the authority necessary to address such a situation. It is elementary, however, that the planned wetlands will

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		<p>take a period of time after construction to establish to a point where comparison with the criteria is warranted. This phase-in and establishment period does not undermine the "whole basis," as asserted. The CDP is not yet constructed, is not causing impacts, and will cause no impacts unless and until EPS's discharge is insufficient to meet its source water needs. The Minimization Plan provides for mitigation sufficient to fully offset entrainment and impingement amounts associated with stand-alone operations, without claiming any credit for minimization from design and technology measures. This is the case even though the CDP is before the Regional Board to operate in co-location mode, when it will be using discharge water from the EPS when available to meet the CDP's feedstock needs. The proposal is fully protective, even including the phase-in period.</p>
166.	<p>To summarize, at a minimum, the impingement compensatory mitigation should meet the following criteria:</p> <ol style="list-style-type: none"> 1) Impingement impacts should be calculated to a 95 percent confidence interval, as extrapolated by Dr. Raimondi from a 4.7kg/day (50 percent confidence interval) impact assessment. 2) Impingement impacts should be calculated at a rate of 304 MGD attributable to CDP impacts, or calculated real-time. 3) Impingement compensatory wetland productivity calculations must take into account the type of wetland created. If Poseidon's proposed mixture in the MLMP is applied to impingement mitigation, Dr. Raimondi's calculations should be used at a 95 percent confidence interval. 4) Wetlands must be created, not restored. 5) Penalties should be assessed when performance criteria are not met for a given period of time. 	<ol style="list-style-type: none"> 1) The Board considered Dr. Raimondi's statement and determined that a 95% confidence interval was not appropriate. The Board, instead, decided to implement a productivity standard, and corresponding productivity monitoring to determine whether the proposed mitigation would be sufficient. 2) The CDP impingement projection of 4.7 kg/day is calculated from the EPS 2004-05 weekly impingement samples. Of the 52 samples, 50 are prorated to 304 MGD and 2 are not prorated. The 50 are prorated to 304 MGD because Poseidon considers the impingement that occurred on those days to be typical of flow-related impingement and, as such, reasonable to prorate. 3) It is anticipated that the proposed type and mixture of wetlands will be evaluated by the Scientific Advisory

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	Using the above criteria, the required compensatory mitigation for impingement only, assuming 100 percent of CDP intake is attributable to CDP operations, a minimum of 54 additional acres of newly created wetlands (40 percent intertidal or subtidal) should be required.	Panel when they review the Productivity Monitoring Plan, concurrently with the Wetland Restoration Plan. 4) If wetlands are to be restored, it is anticipated that the baseline productivity of these wetlands will not be counted towards mitigation for intake mortality. 5) If compliance timelines are not met as specified in the order, the discharger is subject to penalties under Porter Cologne.
S57	Approval of the MLMP as currently proposed violates the PC 13142.5 requirement that best available mitigation be implemented, as the Board cannot make such assessment without baseline information about the site or sites where wetlands will be created or restored.	CWC Section 13142.5(b) does not require that any plan adopted pursuant to CWC Section 13142.5(b) identify a particular mitigation site. The Minimization Plan and MLMP have, however, identified 11 pre-approved sites, with the five located within the boundaries of the Regional Board's jurisdiction identified as priority sites. Both the Regional Board and the Coastal Commission must approve the Discharger's selected mitigation site(s) and corresponding Restoration Plan. The MLMP provides strict performance criteria, which are enforceable by the Regional Board and the Coastal Commission.
S58	Given the disagreements among experts regarding the so-called outlier impingement events, additional data collection and analysis is warranted. The fact that the Regional Board staff must rely upon a 1979 document does not necessarily speak to the unreliability of that document, but rather, the appropriateness of confirming its findings with additional data now.	See Response No. S31.
S59	That Board staff, an independent third-party reviewer, and the Coastal Commission staff all agree (with Environmental Groups) that impingement impacts will be greater than previously disclosed by Poseidon, that they will be significant,	The Regional Board does not understand the Discharger to be asserting any such waiver. The Regional Board has undertaken a full and independent review of the impingement issue, and is not deferring

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	and that they require mitigation in addition to that provided for entrainment impacts, provides more than enough reason to discount Poseidon's veiled attempts to argue such concerns were somehow waived by past actions.	to any past action on this issue. It is within the purview of the Regional Board to ascertain whether the potential impingement is significant, or not. Regional Board staff informed the Regional Board at the April 8, 2009 hearing that science does not provide a line in the sand over which impingement necessarily must be considered "significant." The Porter-Cologne Act requires the Regional Board to balance a variety of factors to reach a reasonable outcome, and ensure that intake and mortality are minimized. The Regional Board finds that it does not need to determine whether impingement is <i>de minimis</i> , as the Discharger is being required to monitor actual impingement and offset it with fish productivity at the mitigation wetlands, as detailed in Tentative Order R9-2000-0038, regardless of whether it is <i>de minimis</i> .
S60	Poseidon's concerns regarding expert disagreement can most appropriately be rectified by postponing approval of the CDP and holding a public workshop so that the matters can be aired entirely.	Comment Noted.
S61	Poseidon, in its rebuttal of Dr. Raimondi's impingement impacts assessment repeatedly sets up straw man arguments that are incorrect reflections of Dr. Raimondi's position. The Board should further consider this evidence of Poseidon's misrepresentation of facts throughout the regulatory process. (See, for instance, Poseidon's Comments, April 2, 2009, at p.3, claiming that Dr. Raimondi "has opined that juvenile and adult fish that will be present in the proposed wetlands cannot be used to compensate for fish lost at the CDP," and claiming that such assertion is "nonsensical." What is nonsensical is Poseidon's attorneys reading Dr. Raimondi's report in this way. Dr. Raimondi's position, consistent with that of Board staff, CCC staff, and	The comment's interpretation of Dr. Raimondi's report is unnecessary, as Dr. Raimondi's report is included in the record. In his April 1, 2009 statement, Dr. Raimondi concluded that the wetland acreage determined necessary to compensate for entrainment cannot also be used to compensate for impingement. (Statement of Dr. Peter Raimondi, April 1, 2009.) The entrainment modeling (ETM), however, is a species-specific model based on the understanding that entrainment is a particularized effect on an ecosystem and does not wholly eliminate its value. The Regional Board concurs with the Coastal Commission and the Scientific Advisory Panel's (SAP) conclusion that the "APF is used to determine impacts to only those

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	<p>Environmental Groups, is that without data regarding the quality of wetlands to be restored or created, it would be impossible to prescribe some quantity of the marine life enhancements as accounting for anything but the entrainment impacts upon which the MLMP is based.)</p>	<p>species affected by an entrainment, and the mitigation resulting from the APF is meant to account only for those effects.” (Conditional Compliance Findings for Special Condition 8, Marine Life Mitigation Plan, Nov. 21, 2008 (approved Dec. 10, 2008), p. 12 of 18). Thus, the mitigation acreage is also available to offset impingement impacts.</p> <p>The comment also states that “without data regarding the quality of wetlands to be restored or created, it would be impossible to prescribe some quantity of the marine life enhancements as accounting for anything but the entrainment impacts upon which the MLMP is based.” The Tentative Order requires such data, requiring impingement and productivity monitoring to show that the fish in the wetlands are present in sufficient quantity to account for impingement, as well as entrainment.</p>
<p>S62</p>	<p>Arguments that the Agua Hedionda Lagoon will revert to mudflats if the desalination plant is not approved are laughable at this point. There is no evidence to suggest decommission of the EPS will result in abandonment of management measures to support marine life viability in the lagoon.</p>	<p>The comment fails to address by what mechanism periodic dredging would be maintained in the absence of the EPS operations or the MLMP. EPS performs maintenance dredging of Agua Hedionda Lagoon for plant operations. Due to continual sedimentation, the Lagoon was completely re-dredged in 1998/1999 to an average depth of 8 to 11 feet, illustrating the need for on-going maintenance dredging. Under the terms of the MLMP, Discharger may become responsible for conducting maintenance dredging of the Lagoon. The Agua Hedionda Lagoon Foundation has noted that the lagoon environment would suffer without the dredging.</p> <p>Before the presence of an industrial installation at Agua Hedionda Lagoon, the Lagoon was characterized by mudflats. As noted in the City of Carlsbad's Agua Hedionda Land Use Plan, "originally, the lagoon was</p>

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		an increasingly restricted salt water marsh, the result of accumulated sedimentation, and the absence of tidal flushing. Between 1952 and 1954, the San Diego Gas & Electric Company removed approximately 310,000 cubic yards of sediment from the lagoon, restoring the lagoon to an average 10 foot depth, and opening the lagoon mouth to permanent tidal flushing."
S63	Poseidon and its experts persist in their attempts to characterize impingement and entrainment impacts solely in terms of biomass lost. This may have succeeded for the limited CEQA review by the City of Carlsbad, but the regulatory agencies have made absolutely clear that the proposed compensatory mitigation scheme seeks to account for lost ecosystem function associated with the individuals lost to impingement and entrainment. Because the loss of individuals will have a different impact on the ecosystem depending on their unique characteristics, mitigation obligations must be based upon extremely conservative impacts assumptions.	The Minimization Plan and MLMP characterize entrainment in terms of numbers of entrained larvae, proportional mortality to larval populations, and foregone areas of production (per the Empirical Transport Model); they do not measure entrainment in terms of lost biomass. Impingement is measured in terms of both numbers and biomass of impinged organisms.
S64	Poseidon seeks to minimize the impacts from impingement based upon conservative assumptions built into the data collection and characterization. Such arguments are accounted for in assessment methodology, and there is no overarching argument regarding conservatism that is relevant to final impingement mitigation requirements.	Comment Noted.
S65	Poseidon's claims of best design based upon assertions to the Coastal Commission that have now been removed from consideration should be disregarded. See CCC letter, and compare to Poseidon's assertions on page 4 of its April 2, 2009 Comment.	The comment refers to an April 6, 2009 letter to the Regional Board from Coastal Commission staffer Tom Luster, which notes that the Discharger removed the following language from page 5-3 of the Minimization Plan: For the purpose of this analysis, the impingement effect is assumed proportional to the intake flow at velocities above 0.5 fps. If the intake through-screen velocity is below or

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		<p>equal to 0.5 fps, the impingement effect of the intake screens is considered to be negligible. Mr. Luster asserts that “the Coastal Commission relied on the 0.5 foot-per-second maximum velocity as a key Project component for reducing impingement impacts.” In its findings on the Project, the Coastal Commission noted that the City of Carlsbad EIR determined that in stand-alone mode, the project would have an intake flow velocity that would not exceed 0.5 feet per second. See Coastal Commission Findings adopted on August 6, 2008, page 39 of 106.</p> <p>The City of Carlsbad and the Coastal Commission examined the Project as a stand-alone operation, and the design velocities discussed by them are relevant to that mode of operation, rather than the co-located operation for CDP benefit mode that is presently before the Regional Board. In the event the EPS permanently ceases operations and the CDP operates in stand-alone mode, additional evaluation of the CDP by the Regional Board will be necessary.</p> <p>With regard to the operational mode presently before the Board, co-location for CDP benefit, the Regional Board has evaluated the Minimization Plan and determined that it provides for the use of the best available design feasible pursuant to CWC Section 13142.5(b). As detailed in Order No. R9-2009-0039, this determination was based on several findings, including primarily the co-location design feature, which allows the CDP to avoid drawing from Agua Hedionda Lagoon any source water it is able to acquire from the EPS’s discharge of cooling water. The findings indicate that additional design features may be feasible in the event EPS permanently ceases to</p>

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		operate, at which time additional review of the CDP pursuant to CWC Section 13142.5(b) will be necessary, including reduction in inlet screen velocity, fine screen velocity, ambient temperature processing, and elimination of heat treatment.
S66	The 80% confidence limit applied by the Coastal Commission is not protective enough. The Board should require mitigation acreages calculated at the 95% confidence level.	Comment Noted.
S67	The recently decided US Supreme Court <i>Riverkeeper</i> decision regarding the application of cost-benefit analysis under Clean Water Act 316(b) does not invalidate the lower court's ruling regarding lack of availability of compensatory mitigation in lieu of implementation of best available technology.	The comment notes that the recent United States Supreme Court decision in <i>Entergy</i> found that cost-benefit analysis was permissible under CWA Section 316(b). In addition, the comment equates "restoration" at issue with respect to CWA Section 316(b) in <i>Riverkeeper II</i> with "mitigation," which is authorized expressly under CWC Section 13142.5(b), without explaining this alleged equivalency.
4/6/2009 letter from Benjamin Hueso, San Diego City Council President		
167.	<p>As one of San Diego County's representatives on the California Coastal Commission, I made the motion to support the Project's Marine Life Mitigation Plan (MLMP), which provides for 55.4 acres of highly productive estuarine wetlands to mitigate for the Project's marine life impacts. I also made a motion in support of the MLMP's findings, approved by the Commission on December 10, 2008.</p> <p>As the maker of the motion the intent behind my support of the mitigation plan was based on my understanding that the 55.4 acres was capable of providing comprehensive mitigation for the effects of the intake structures on the ecosystem of the Agua Hedionda Lagoon, and the coastal environment. Obviously, we understood that the potential effects of the intakes included the potential for fish to be impinged onto the intake screens, as well as the potential for</p>	Comments noted.

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	<p>entrainment of marine life. We did not consider the 55.4 acres as dedicated exclusively to entrainment mitigation, or that mitigation for any other effect would have to be furnished by means other than the 55.4 acres.</p> <p>In this regard, I don't believe that the approach proposed in Poseidon's Minimization Plan results in a "double counting" of mitigation credit. The entrainment mitigation found in the Project's Coastal Development Permit was designed to mitigate for the impacts to the three most affected fish - gobies, blennies, and garibaldi. Expert scientific opinion supports the conclusion that the 55.4 acres will create a new, healthy ecosystem that serves multiple purposes including compensating for these three entrained species, as well as other impinged fish.</p> <p>This determination is supported the MLMP's findings adopted by the Commission on December 10, 2008, which specifically state: " ... these entrainment studies do not assume the complete loss of ecosystem function within an area of APF [Area of Productivity Forgone]; instead they identify only the area that would be needed to replace the numbers and types of species identified in the study as subject to entrainment. The APF is used to determine impacts to only those species most affected by entrainment, and the mitigation resulting from the APF is meant to account only for these effects."</p>	
4/7/2009 Email from Guy McClellan		
168.	All signs indicate that desalination will play an important role in California's future water portfolio. In this debate, we must address the cost, high energy use, and environmental impacts through discharge of brine, chemicals, and carbon dioxide. Desalination is still the most expensive source of	Comments noted.

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	<p>water due to its high energy costs.</p> <p>The plan to mitigate damage done to the marine ecosystem by a desalination plant in Carlsbad is to plant trees inland to offset carbon dioxide emissions from increased power use. There is no chosen location for a marine mitigation project, and that is a glaring deficiency to the current plan.</p> <p>With regards to impingement and entrainment, the studies from the Encinas Power Station indicate that there will be a consistent level of destruction of small fish and fish eggs. The ocean is already overfished and we should not overlook the slaughter of small fish and fish eggs.</p>	
5/6/2009 Letter from Coastal Commission		
S68	Change in Project Description - Increased Intake Velocities: Poseidon's recent submittals to the Board describe a change in the project - i.e., an increase in intake velocities that will require additional action by the Coastal Commission.	The Regional Board did not rely on the Discharger's projection of lower velocities in developing its impingement mitigation.
S69	During the Commission's review, both Poseidon and the project's Environmental Impact Report (EIR) stated that Poseidon's use of 304 million gallons per day of seawater would cause intake velocities of 0.5 feet per second or less, which is the velocity range considered "best available technology" by the U.S. EPA. The Commission relied on characterizations by Poseidon and in the EIR in approving the project and in determining what mitigation requirements were needed for the project to conform to Coastal Act policies.	Comment Noted.
S70	As it turns out, the characterizations made both by Poseidon and in the project EIR regarding intake velocity are incorrect. As shown in a Poseidon January 2009 submittal to the Board, it is physically impossible for Poseidon (and/or the power plant operator) to pump 304 million gallons per day	Comment Noted.

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	through the intake at velocities of 0.5 feet per second or less. The actual velocities at the intake bar racks range from about 40% to more than 250% higher than the originally stated 0.5 feet per second (i.e., from a minimum of no less than 0.7 feet per second to an as-of-yet undetermined maximum that would be several times higher).	
S71	This change in the project appears to relate to the recently identified rate of impingement that is substantially higher than previously disclosed and is higher than reviewed by the Commission. The higher impact rates are based on updated impingement calculations Poseidon and Board staff have developed during the past two months. During the Commission's review, the expected impingement rate was about 0.96 kilograms per day offish, but the expected impingement rates are now higher by about 60% to 750% (depending on which calculations are used). These impingement rates exceed the range determined by the Commission to be <i>de minimis</i> and represent an impact of up to almost three tons of fish per year, which Poseidon and others have calculated will require more than 11 acres of mitigation area to offset. As part of its upcoming review, we expect the Commission will evaluate the updated velocity calculations and impingement rates and then independently determine the appropriate basis for any additional mitigation (see below). This review will ensure the project remains in conformity with Coastal Act policies and will likely result in a change to the Commission's previously-approved MLMP.	Comment Noted.
S72	Need For Additional Mitigation: Poseidon submitted documentation for your April and May hearings stating that it expects to mitigate for its recently identified higher impingement rate by using "excess" production at the mitigation site(s) required through the Commission's MLMP. Its April 30, 2009 submittal for your May hearing proposes "crediting" various proportions of fish produced in its eventual	Comment Noted.

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	mitigation site(s) towards Poseidon's higher impingement impacts.	
S73	However, the MLMP approved by the Commission does not include "excess" production and does not provide for "crediting" mitigation towards an impact that the Commission was not informed about and that was not included in its deliberations.	Comment Noted.
S74	The Commission's review focused on determining how large an area would be needed to provide sufficient habitat for producing the larvae lost to entrainment. The Commission's MLMP approval was based primarily on mitigating the project's entrainment impacts, along with a relatively small amount of impingement impacts (i.e., the above-referenced 0.96 kilograms of fish per day). ⁶ The approved MLMP is expected to provide 80% certainty that it will fully mitigate for all entrainment impacts. At best, the Commission-approved MLMP could provide mitigation credit for up to 0.96 kilograms per day of impingement. Poseidon's proposed "crediting" approach for impingement impacts is not consistent with the Commission's approval and will require additional Commission review and action.	Comment Noted.
S75	We expect the Commission's review will rely in part on recommendations from members of a Science Advisory Panel the Commission convened to provide independent assessment of another similar wetland mitigation project in the San Diego region and that the Commission relied on last year during its review of Poseidon's mitigation proposal. In approving the MLMP, the Commission relied on Panel member recommendations regarding the type of mitigation needed to address Poseidon's entrainment impacts and adopted Panel member Dr. Pete Raimondi's recommended 80% certainty level (instead of Poseidon's suggested 50% level) and his recommended 55.4 acres of mitigation acreage (instead of Poseidon's suggested 37 acres). To be consistent	Comment Noted.

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	with the Commission's previous findings and MLMP approval, we expect to have the Panel conduct a similar review of Poseidon's updated impingement levels and proposed mitigation approach as part of the upcoming review of Poseidon's permit amendment.	
S76	We are also concerned about Poseidon's latest submittals to the Board with suggested measures for sampling and monitoring impingement rates and impingement mitigation. Poseidon proposes monitoring focused largely on determining fish biomass, but as Poseidon and others have noted, mitigation needed for impingement effects should take the form of fish productivity, which requires a substantially more involved and complex approach than monitoring for biomass. Poseidon's proposed monitoring conditions are not likely to provide the data needed to determine whether its eventual mitigation site(s) is capable of, and actually produces, the necessary amount of fish.	Comment Noted. The monitoring has been revised to account for productivity.
S77	We note, too, that Poseidon's proposals would have its own consultants determine necessary monitoring and sampling measures; however, this would not provide the level of independent peer review and confirmation that the Commission relied on in approving the MLMP. The Commission's Science Advisory Panel has already developed rigorous monitoring methodologies that are completely consistent with the scientific literature, and we expect the Commission will likely rely on the Panel to review Poseidon's proposed monitoring approach for adequacy and to ensure consistency with the existing MLMP monitoring requirements that the Panel developed.	Comment Noted.
S78	Please note, too, that changes the Board might make to the MLMP will require Commission concurrence - for example, if the Board requires Poseidon to conduct additional monitoring, the Commission will evaluate whether Poseidon will need to provide additional funds to support that	Comment Noted.

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	monitoring.	
5/6/2009 Letter from Latham & Watkins responding to 5/6/2009 Coastal Commission Letter		
S79	First, we do not consider it necessary or relevant for the Board to review or resolve any of the issues raised by Mr. Douglas in his letter, or the responses provided in this letter from Poseidon, prior to the Board's action on Proposed Order No. R9-2009-0038 for Poseidon's desalination facility. This response letter is provided for your consideration, if, and only if, you desire to examine these issues prior to your vote on the Proposed Order.	Comment Noted.
S80	Second, we believe that the Regional Board's record has closed, and we do not believe it appropriate for the Board to accept any additional evidence or written testimony, even when it has been submitted by Mr. Douglas. The Board's website states: "On April 8, 2009, the Regional Board closed the public hearing on this matter and will not receive new evidence or testimony."	Comment Noted.
S81	The Coastal Commission staff has had a full and complete opportunity to submit evidence to the Regional Board in the several years this matter has been pending before the Regional Board, including prior to the April 8, 2009 hearing. Poseidon's complete position on impingement, including the appropriate monitoring and measurement of impingement and productivity of mitigation wetlands, was submitted well in advance of the February 11th and April 8th hearings, and posted on the Regional Board's internet website, for review and consideration by the Coastal Commission. Coastal Commission staff took full advantage of this opportunity to provide comment, and had the ability to submit comments to the Regional Board up to and including the date of the April 8, 2009 hearing before this Board. Poseidon previously responded to these comments in an April 8, 2009 letter addressed to you from my partner David Goldberg of Latham	Comment Noted.

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	<p>& Watkins. This response letter is provided for your consideration, if and only if, you decide to consider the letter from Mr. Douglas, despite the fact that it has been submitted after the close of the record for this proceeding and it does not include new or substantive information not previously provided to the Regional Board by Commission staff and fully addressed by Poseidon.</p>	
<p>S82</p>	<p>Poseidon Has Not Changed Its Project Description And Has Not Changed Its Intake Velocities. As set forth in the April 8, 2008 letter to this Board from Mr. Goldberg of Latham & Watkins, Poseidon has consistently stated that it expects that when the desalination project operates in standalone mode without operations from the power plant, that the mean velocity of seawater at the bar rack intake from Agua Hedionda Lagoon will be 0.5 feet per second. Poseidon has not changed its project description. The bar racks contain vertical bars at the mouth of the seawater intake system as described on page 3-3 of the Minimization Plan. Downstream from the seawater intake system, the seawater then flows through bar racks and an approximately 600 to 1000 foot series of underground pipes and channels, through fine screens and two cooling water pumps described on page 3-6 of the Minimization Plan.</p>	<p>Comment Noted.</p>
<p>S83</p>	<p>Poseidon Has Not Claimed That The MLMP Approved By The Coastal Commission Was Designed To Mitigate For Impingement Impacts. The record is clear that the Coastal Commission did not provide for mitigation of impingement impacts as part of its adopted Marine Life Mitigation Plan, and Poseidon has never claimed that it did. Instead, Poseidon has presented evidence that the same wetlands that are required under the MLMP will also have excess biological productivity that more than compensates for any impingement impacts from the desalination project's standalone operations. Poseidon has agreed to an additional</p>	<p>Comment Noted.</p>

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	<p>requirement from the Regional Board to confirm this commitment to the 1715.5 kilograms per year of additional biological productivity, and its experts have explained why this is not "doublecounting." Poseidon is not seeking any change or modification to the MLMP. Instead, Poseidon has agreed to this separate and additional requirement, which can be satisfied by the same acreage as established under the MLMP.</p>	
S84	<p>Poseidon Does Not Believe That There Are Any "Recently Identified Higher Adverse Impingement Impacts", Nor Will The Regional Board In Its Proposed Order Find Any Such "Higher Adverse Impacts." Poseidon's position, since April 30, 2008 (over one year ago), is that the forecasted impingement from Poseidon's desalination plant during standalone operations will be 1.56 kg per day (3.43 pounds per day), or less. This is the figure cited in Dr. David Mayer's report in April of 2008, which was resubmitted to this Board on February 2, 2009. This value is slightly more than the 2.12 pounds per day estimate of impingement that the Coastal Commission cites in its August 8, 2008 findings adopted for its permit, but still less than the daily diet of one adult brown Pelican. There has been no recently identified increase in forecasted impingement. We understand that the Regional Board staff may disagree with the Poseidon forecast, in part because of a staff concern including so called "outliers" recorded during unusually heavy rainstorms, and an unwillingness to discount these outliers for expected reduced flow. We believe the staffs proposed order with errata (like Poseidon's proposed Alternative Order) will provide that the Board does not need to resolve this disagreement as to the impingement forecast, between Poseidon and the Regional Board staff, because Poseidon has voluntarily agreed to meet a higher productivity standard. We believe this is the most expeditious way for the Board to take action on May 13th and move on with this project.</p>	Comment Noted.

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S85	However, should the Board have any concerns about this issue raised by Mr. Douglas, we urge the Board to change the proposed Order before it and expressly and explicitly determine that the forecasted level of impingement will be in accordance with Poseidon's position, 1.56 kg per day (3.43 pounds per day), and find that Poseidon has voluntarily agreed to meet a productivity standard which is based on a higher estimate of 1715.5 kg/year (which is based on a 4.7 kg/day (10.37 pounds per day) standard}. This language is in Attachment A to this letter.	Comment Noted.
S86	By making this explicit change to accept Poseidon's 1.56 kg per day number respond to Mr. Douglas's letter, the Board will put to rest any concerns that have been raised by Mr. Douglas's misunderstanding of the Board's order.	Comment Noted.
S87	We would also note that Poseidon's forecast of 1.56 kg per day (3.43 per day) was provided to the Regional Board staff on April 30, 2008, who in turn provided it to the State Lands Commission staff. We do not know to what extent the Regional Board staff provided this information to the Coastal Commission staff as part of the extended interagency coordination process that the Board directed occur in April 2008 with the conditional approval of the Minimization Plan, but we do know that such information was available for the May 1, 2008 interagency coordination meeting at Agua Hedionda Lagoon. Should the Coastal Commission staff have desired to obtain any information on impingement, we are sure the Regional Board staff would have provided this April 30, 2008 information and Dr. David Mayer's report.	Comment Noted.
S88	The Productivity Monitoring Plan For The Board's 1715 kg per year Standard Will Be Reviewed By The Scientific Advisory Panel. Mr. Douglas's letter incorrectly states that the productivity monitoring plan ("PMP") to demonstrate compliance with the 1715.5 kg/year standard provided for under the Board's Order to meet the Board's productivity	Comment Noted.

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	standard will not be reviewed by the Scientific Advisory Panel. In fact, both the staff proposed Board order and the Poseidon Alternative Order expressly provide for such review by the SAP.	
S89	We note that the letter you received is from the Coastal Commission staff, not the Coastal Commission itself and that the Commission has repeatedly rejected the Commission staffs position on an number of occasions concerning the Poseidon project. While Poseidon does not believe there is any need for an amendment to its permit, should the Coastal Commission staff believe that the Coastal Commission should require an amendment to Poseidon's permit to address the staff s concerns, the staff certainly has the ability to request the Commission to take such action, and no action by this Board is required for the Commission to consider this request of its own staff.	Comment Noted.
5/6/2009 Letter from Latham & Watkins		
S90	We have reviewed the latest staff revisions to the staff s Proposed Order which are revisions to Tentative Order R9-2009-0038 posted March 9, 2009, which were intended to reflect the Board's direction in April. They were posted on the Board's website earlier today as: Regional Board revised Tentative Order No. R9-2009-0038 with errata (changes from the revised Tentative Order are shown in red underline/strikeout)"	Comment Noted.
S91	Poseidon is pleased to inform the Board that Poseidon fully supports the staff s Proposed Order as posted on the Board's website today, May 6, 2009. We no longer request that the Board adopt our previously submitted alternative order.	Comment Noted.
S92	We understand that the Board must have read and reviewed, and adopt, a Response to Comments/Responsiveness Summary in order to adopt the proposed Order on May	Comment Noted.

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	<p>13,2009. Poseidon has submitted a Poseidon proposed Response to Comments/Responsiveness Summary to make sure that the Board has such a document before it on May 13th so that it can take final action. However, we expect that the Regional Board staff will be submitting their own response to comments/responsiveness summary in the near future to the Board, and while we have not reviewed it, we hope and expect that we can also support adoption of the staff's document.</p>	
5/7/2009 Letter from Coast Law Group		
S93	<p>At the April 8, 2009 hearing, the Regional Board directed staff to prepare responses to comments received and make revisions to the proposed Tentative Order consistent with Board direction. However, the Regional Board did not reach consensus on a variety of issues discussed, and in some instances was silent on key points presented. The Revised Tentative Order, as proposed, is not consistent with the Board's intent as expressed at the hearing. Moreover, the Revised Tentative Order does not meet the requirements set forth in the NDPES Permit or Porter-Cologne section 13142.5(b).</p>	Comment Noted.
S94	<p>The Regional Board counsel specifically instructed the Board not to act at its April 8th hearing due to procedural irregularities. Due to the systemic informational gaps and last-minute changes throughout the administrative approval process for the CDP, the public once again suffers for Poseidon's gamesmanship. Impingement impacts came to light shortly before the April hearing, leaving Regional Board staff and the public little time to respond to <i>Poseidon's</i> calculation error. See Email correspondence between Chiara Clemente and Peter MacLaggan from March 17 to March 30, 2009. As the Flow, Entrainment and Impingement Minimization Plan (Minimization Plan) was due in January</p>	Comment Noted.

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	2007, and has yet to be approved as of the most recent hearing on May 9th, Poseidon cannot credibly argue that expediency is an issue. Although Poseidon takes every opportunity to stress the urgency of CDP water production, it is and has been incumbent upon <i>Poseidon</i> to provide the necessary information in a timely manner. Unarguably, Poseidon has failed in this regard.	
S95	Further, staff's Response to Comments previously received has not yet been released, but is expected after the close of the public hearing and the public comment period for the May 13th hearing. Contrary to public policy, the closure of the comment period before the Response to Comments are produced results in a disservice to the public, staff and to the Regional Board. Rather than a thoughtful response to legitimate concerns, the Regional Board will now have a post-hoc rationalization of its directive, immune from public scrutiny. In so far as the public notice for the May 13 th hearing limits public comment to "proposed revisions made to the Tentative Order following the April 8, 2009 meeting" and receipt by May 6 th , this deprives the public of meaningful participation. Environmental Groups request an opportunity to respond to the forthcoming Response to Comments at the May 13th hearing, and will be providing written comments for the record as well.	Comment Noted.
S96	Poseidon's submission of proposed Findings and Order before the public release of the Regional Board's Revised Tentative Order or any supportive findings is prejudicial to both the Board and to the public. The Regional Board closed the comment period and is accepting only comments pertaining to the revisions to the Revised Tentative Order, yet Poseidon has preemptively provided detailed and extensive comments in the form of its proposed order and supporting findings.	Comment Noted.
S97	Although this type of procedure is standard practice for	Comment Noted.

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	Poseidon at every administrative level, it is highly prejudicial and should not be condoned. Staff and the public must now focus their efforts on rebutting Poseidon's proposals instead of focusing on staff's independent assessment. Poseidon is the applicant in this process, but it is the Regional Board, with the aid of staff, that should be driving the approval process. Poseidon's standard practice puts staff and the public on the defensive.	
S98	Although this procedure results in a "stream-lined" approval with an artfully crafted order and findings supporting Poseidon's position, it shows a lack of trust in the Regional Board and staff to do their jobs correctly. Poseidon has volunteered to do the Board and staff's job, and the Regional Board members and the public should be highly suspect of any applicant doing the Board's work.	Comment Noted.
S99	As a preliminary matter, the Regional Board itself did not provide a transcript of proceedings, and any reliance on the transcript prepared by Poseidon is a matter of practicality (Preliminary Transcript of Relevant Excerpts of Regional Board's Deliberation at April 8, 2009 Regional Board Hearing, Prepared by Latham & Watkins LLP From Audio Files, hereinafter "Poseidon Transcript"). However, it appears that much of the Regional Board discussion, Regional Board staff and counsel comments, and public comments relevant to the Regional Board's deliberation and direction to staff have been selectively omitted from the transcript. Although the record is colored by these selective omissions, Environmental Groups provide the following comments based on an assumption of accuracy in that portion of the transcript Poseidon has chosen to provide.	Comment Noted.
S100	The Board members who spoke at the April 8th hearing (and whose testimony was transcribed by Poseidon) provided little to no testimony on several topics. Contrary to Poseidon's position, the Board did not give anything remotely resembling	Comment Noted.

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	<p>“thorough consideration” to these subjects, and gave virtually no direction to staff. Poseidon Key Points of Poseidon’s Proposed Order and Supplemental Findings, April 30, 2009, p.3. Poseidon’s characterization of the Board’s position is merely an attempt to insulate the project from litigation, and a blatant mischaracterization of the administrative review process. Poseidon should be reprimanded for its continued manipulation of agency approval processes and admonished to more accurately represent Board action in all future submissions.</p>	
<p>S101</p>	<p>1) The Regional Board did not discount heat treatment impingement data collection.</p> <p>To the contrary, the Regional Board specifically asked for impingement real-time assessment, which would include heat treatment data. During his public comment, Mr. Garret specifically and repeatedly called for impingement monitoring similar to that conducted in 2004-05 for Encina Power Station (EPS) by Tenera. Poseidon Transcript, p. 15-16. This monitoring, which was the basis of all entrainment and impingement assessments presented by Poseidon, included heat treatment monitoring.</p>	<p>Comment Noted.</p>
<p>S102</p>	<p>2) The Regional Board did not state that 55.4 acres of wetland mitigation for entrainment would be enough to offset impingement losses.</p> <p>The Board did not decide that Poseidon’s MLMP requirement to provide 55.4 acres of mitigation in two phases was a “proper amount of wetlands mitigation acreage” and “the proper amount of wetlands mitigation acreage needed to fully offset projected Project entrainment and impingement losses.” Poseidon Key Points of Poseidon’s Proposed Order and Supplemental Findings, April 30, 2009, p.1. The Regional Board did not find 55.4 acres sufficient, nor did it</p>	<p>Comment Noted.</p>

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	find such acreage would fully offset impacts. As a practical matter, further impingement monitoring on a real-time basis was required in order to accurately reflect impacts and require mitigation based on such assessment. Had the Regional Board been convinced by Poseidon's expert testimony, it would not have found the need to require real-time assessment.	
S103	Poseidon's own transcript shows the Board members were not convinced that enough data existed to conclusively prove the extent of impingement impacts, and therefore required 55.4 acres as floor.	Comment Noted.
S104	Thus, what can be gleaned from the transcript is that there was Board member uncertainty as to what the actual impingement rate would be, and the Board members thus were inclined to require real-time impingement monitoring. The 55.4 acres of mitigation required for entrainment would be a floor, dependent upon the real-time impingement monitoring results. As detailed further below, in light of the Coastal Commission Executive Director's reiteration that the entire 55.4 acres are allocated to entrainment mitigation, using the same acreage to mitigate for impingement impacts is no longer an option. Coastal Commission Comments to the Regional Board, May 6, 2009, p. 2-4.	Comment Noted.
S105	3) Temporal losses need to be taken into account. Because the Revised Tentative Order contemplates impingement monitoring after construction of the CDP, during its first year of operation, temporal losses must be considered. First, after the impingement monitoring data is analyzed and presented to the Board, any discrepancy between the impingement losses attributable to CDP operations and the fish productivity of restored wetlands (to the extent there is any allowable overlap for entrainment and impingement mitigation) will need to be addressed. Further, before the wetlands potentially reach the required	Comment Noted.

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	<p>productivity to offset impingement mitigation, losses due to impingement and entrainment need to be mitigated through further wetland restoration acreage. The temporal loss accounting requirement is not required in the current order, and should be included therein. The Regional Board testimony provided by Poseidon reflects, at a minimum, the Board considered this something to be vetted by staff or the Science Advisory Panel at the time of MLMP implementation.</p> <p>Therefore, the Revised Tentative Order should include some provision that either defines a method to account for temporal losses, or assigns this function to the Science Advisory Panel.</p>	
S106	<p>4) Biological productivity assessment was to be determined by the Science Advisory Panel. The Regional Board agreed that assessment of the biological productivity of the wetlands, created as required for entrainment impacts and as a floor for impingement impacts, would be determined by the Science Advisory Panel. Contrary to Poseidon's contentions, the Regional Board did not agree that 55.4 acres "will more than fully offset potential stand-alone impingement." Poseidon Key Points of Poseidon's Proposed Order and Supplemental Findings, April 30, 2009, p.2. Nor did the Regional Board direct staff to write a Revised Tentative Order requiring calculations of wetland productivity that specifically contemplated Poseidon's proposed calculation method. The testimony reflects the Regional Board's understanding that this would be determined by the Science Advisory Panel.</p>	Comment Noted.
S107	<p>As mentioned above, the limited transcript provides no evidence that the Regional Board intended any impingement monitoring to exclude heat treatments. In light of the seemingly perpetual co-located operation due to the strictly worded stand-alone trigger, EPS is likely to continue</p>	Comment Noted.

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	operations at minimum flow rates, while CDP becomes the almost exclusive driver of operations. It would be illogical and contrary to the mandates of Porter-Cologne to minimize mortality to attribute none of these heat treatment impacts to CDP operations. Revised Tentative Order, p. 11.	
S108	Though Poseidon argues that it would be more appropriate to obtain heat treatment data from EPS, this argument is wholly without merit. The impingement data relied upon by the Regional Board <i>and by Poseidon</i> was conducted based on EPS operations. The intake and discharge are operated by EPS. The pumps are owned and operated by EPS. Using Poseidon's logic, no entrainment or impingement should ever be attributed to Poseidon as long as EPS owns the intake and discharge channels and the intake pumps. However, the Regional Board, along with the Coastal Commission and State Lands Commission, has rejected such a notion. When CDP flows are the driving force, the impacts are attributable to CDP, not EPS. Thus, heat treatments conducted by EPS <i>for the benefit of CDP</i> would also be attributable to CDP. As mentioned previously by Environmental Groups and staff, CDP operations will necessarily contribute to increased frequency and impacts of heat treatments. See Carlsbad Desalination Project, Environmental Groups' Supplemental Comments, April 6, 2009, p. 10- 11.	Comment Noted.
S109	Further, in light of the proposed stand-alone and new design or technology triggers proposed, the heat treatment impingement impacts will continue regardless of EPS flow rate so long as EPS is subject to Reliably Must Run (RMR) status by Cal-ISO. Thus, even operating at 304 MGD with 99.99% of impacts attributable to CDP, Poseidon will never have to mitigate for heat treatments until EPS shuts down completely.	Comment Noted.
S110	The Regional Board cannot refuse to make a decision as to the significance of the CDP marine life impacts, especially	Comment Noted.

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	<p>under the Porter-Cologne mandate to <i>minimize</i> intake and mortality. Without actually requiring the best design, site, or technology to minimize intake and mortality, the Regional Board has chosen to rely wholly upon mitigation measures. This in and of itself is problematic and does not comport with Porter-Cologne. A refusal to acknowledge reality and require accurate mitigation for CDP impacts is completely inadequate.</p>	
<p>S111</p>	<p>The Regional Board, finding it “unnecessary to resolve” disputes of whether impingement rates of 1.56kg/day to 7.16kg/day are more accurate because 4.7kg/day is “a reasonable, conservative estimate of impingement” is nonsensical. Revised Tentative Order, p. 10. First, the Regional Board inherently makes a decision as to the reasonableness of the impingement rates by using a middle-of-the- road number of 4.7kg/day. The Regional Board could find 4.7 kg/day supportable in light of the range of numbers provided, or 4.7 kg/day as a good compromise position because both the low and high end of the range are equally likely. However, merely stating that the Regional Board has found 4.7 kg/day reasonable without stating why, in light of an unresolved dispute between staff, Environmental Groups, and Poseidon, provides no insight into the Regional Board’s decision-making process.</p>	<p>Comment Noted.</p>
<p>S112</p>	<p>Second, the Regional Board, by basing the wetland productivity requirement on the 4.7 kg/day presumed impingement impacts proves that determining impingement impacts is of the utmost importance. As written, the Regional Board’s basis for impingement mitigation calculations in the order is the assumption that a productivity of 1,715.5 kg/year will offset impingement impacts. This 1,715.5 kg/year productivity is “derived from the estimate of 4.7 kg/day” of impacts. Revised Tentative Order, p. 10. Thus, if the Regional Board truly found it unnecessary to</p>	<p>Comment Noted.</p>

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	resolve the dispute over what the CDP impingement rate is, there would be <i>no numerical value whatsoever</i> assigned to such impact.	
S113	Further, the Regional Board directed staff to require, and has required through the Revised Tentative Order, impingement monitoring once CDP operations begin. Revised Tentative Order, p. 11. Contrary to the language currently contained in the order, this monitoring of impingement impacts is not merely of passing interest as something “valuable to consider.” <i>Id.</i> The order also allows the Regional Board to require an adjustment of the annual fish productivity requirement of 1,715 kg/year dependent on these impingement monitoring results. Thus, 1,715 kg/year is established as the benchmark from which productivity, and by implication mitigation, is increased or decreased.	Comment Noted.
S114	If the impingement monitoring results show an increased productivity, Poseidon will likely ask for mitigation credit. Phase I of the MLMP requires only 37 acres of mitigation, with an additional 18.4 acres conditionally required in Phase II. Revised Tentative Order, p. 9. Thus, if Poseidon meets productivity benchmarks imposed in the Revised Tentative Order (i.e. 1,715 kg/year) and the real-time impingement monitoring shows impacts less than 4.7 kg/day, Poseidon may potentially receive credit towards the required entrainment mitigation, resulting in less than 55.4 acres of total mitigation.	Comment Noted.
S115	Thus, the 4.7 kg/day impingement calculation is truly important, as it impacts the amount of mitigation required above and beyond 55.4 acres, and it also provides a mitigation banking mechanism where none existed before , and more importantly, was never intended as described in more detail below. As the Coastal Commission has reiterated, the CDP’s impingement impacts have only recently come to light, and the mitigation imposed by the	Comment Noted.

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	Coastal Commission in the MLMP was for entrainment impacts. Coastal Commission Comments to the Regional Board, May 6, 2009, p. 2-4. At most , Poseidon could receive credit for impingement of .96kg/day. <i>Id.</i> at 4	
S116	In light of the Regional Board's requirement of real-time impingement monitoring, it is unsupportable to include in the Revised Tentative Order an arbitrary benchmark, that only serves to benefit Poseidon. A year-long data set of impingement impacts resulting from CDP operations, including heat treatments, would be the best evidence of the CDP's intake and the resulting mortality. Any impingement mitigation requirement based on this calculation would be the most defensible and scientifically supportable.	Comment Noted.
S117	The biological performance standard productivity requirement of 1,715 kg/year for impingement compensation, and the available fish biomass calculations are unsupported by the record, lack scientific basis, and should be decided by the Science Advisory Panel. Revised Tentative Order, p. 14. As pointed out by the Coastal Commission, the monitoring of wetland mitigation is required to take the form of "fish productivity, which requires a substantially more involved and complex approach than monitoring for biomass." <i>Id.</i> at 4. Moreover, the "Science Advisory Panel has already developed rigorous monitoring methodologies that are completely consistent with scientific literature..." <i>Id.</i> Poseidon's attempt to circumvent this process during Regional Board review is contrary to the Regional Board directive and to the Coastal Commission's requirements in the MLMP.	Comment Noted.
S118	Further, though biomass calculations are wholly inappropriate for determining fish productivity and should not be applied in the manner suggested by Poseidon, the calculation methods themselves are completely unfounded. Revised Tentative Order, p. 14. First, the premise for the calculations	Comment Noted.

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	themselves is the ability to create wetland mitigation for entrainment and impingement impacts within the same acreage.	
S119	This matter was not resolved by the Regional Board at its April hearing, nor was the Regional Board clear as to how any such assessment would be made. <i>See</i> , Statement from Peter Raimondi, Ph.D, April 1, 2009 ; Carlsbad Desalination Project, Environmental Groups' Supplemental Comments, April 6, 2009, p. 11-13; Coastal Commission Comments to the Regional Board, May 6, 2009, p. 2-4. Importantly, the Coastal Commission has since <i>expressly rejected</i> Poseidon's assertion that the entrainment mitigation can also be used as impingement mitigation.	Comment Noted.
S120	Coastal Commission Comments to the Regional Board, May 6, 2009, p. 3. The Coastal Commission, at most, accounted for .96 kg/day of impingement in mitigation calculations. <i>Id.</i>	Comment Noted.
S121	Second, the assumption that entrainment mitigation is only for the three most commonly entrained species was not accepted by the Regional Board. The position that these three species are merely a proxy for all entrainment impacts is supported by Dr. Raimondi (who was also the expert involved in the Coastal Commission review process), by Regional Board staff, by contemporary scientific literature and research, and by Environmental Groups. <i>See</i> Carlsbad Desalination Project, Environmental Groups' Supplemental Comments, April 6, 2009 and Appendix.	Comment Noted.
S122	Thus, a calculation based on the assumption that all species other than the most commonly entrained goby, blenny and garibaldi are "excess production" would be inaccurate. Moreover, even if the calculation allowed for inclusion of species biomass only excepting the three most commonly entrained fish, it would not support Poseidon's proposed calculation. Not only is a biomass calculation of "all other	Comment Noted.

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	species" overly inclusive, no basis exists to support the proposition that all other biomass can be attributable to <i>impingement</i> mitigation. Even using Poseidon's logic only impinged organisms could be counted toward these impingement productivity calculations.	
S123	<p>However, as mentioned repeatedly, the house of cards upon which Poseidon has built its mitigation structure topples when any of the foundational elements are removed:</p> <p>1) Entrainment mitigation required in the MLMP by Coastal Commission was for entrainment impacts. At most, the Coastal Commission considered .96 kg/day impingement.</p> <p>2) Impingement impacts at the Coastal Commission were based on a premise of .5fps velocity, now proven to be inaccurate.</p> <p>3) Poseidon's impingement calculations were inaccurate, as revealed by staff shortly before the April 2009 hearing. Real-time impingement impacts are the best basis for assessing CDP impingement impacts. Any mitigation required to offset these impacts must be additional, over and above the 55.4 acres required for entrainment impacts.</p> <p>4) Heat treatments conducted during co-located operations are for the benefit of CDP when the driving factor for intake is CDP, and must therefore be considered in impingement monitoring and mitigation requirements.</p> <p>5) Biological productivity of wetland mitigation is not equal to biomass, and is meant to be determined by a Science Advisory Panel, as reiterated by the Coastal Commission.</p>	Comment Noted.
S124	The Coastal Commission has repeatedly spoken to the inconsistencies between the proposed mitigation measures in	Comment Noted.

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	<p>the Revised Tentative Order and those adopted by the Coastal Commission in the MLMP. Comments by the California Coastal Commission, April 6, 2009; Coastal Commission Comments to the Regional Board, May 6, 2009. At its April 9, 2008 hearing, the Regional Board specifically directed staff to work with other agencies in coordination, in order to comply with Section 13225 of the California Water Code. Resolution No. R9-2008-0039, p.3. Not only would adoption of the Revised Tentative Order be contrary to this directive, it would frustrate the Coastal Commission's requirements. Poseidon would potentially be unable to meet its MLMP performance standards as mandated by the Coastal Commission. Coastal Commission Comments to the Regional Board, May 6, 2009, p.4-5.</p>	
S125	<p>Though the Regional Board specifically asked for a trigger that would mandate stand-alone analysis, the Board members did not give direction as to how stand-alone operations would be identified. The proposed trigger for a new Report of Waste Discharge is EPS permanent shutdown of all generating units. Revised Tentative Order, p. 2. This trigger does not take into account the reality of EPS current and future operations. Though EPS is shutting down three of its five generating units, it already operates at a reduced capacity compared to historical operations, and specifically those in 2006 at the time of permit issuance. Once three of the five units are shut-down, EPS flows will be further reduced. Under the current scenario, even if EPS flows are limited to the service pumps, or even to 1 MGD, the CDP will not be considered a stand-alone facility. This creates a long-term scenario in which CDP is a stand-alone facility in all but name, which not only incentivizes perpetual EPS operation, but allows CDP to evade stand-alone Porter-Cologne section 13412.5 review.</p>	Comment Noted.
S126	The trigger for design or technology feature implementation	Comment Noted.

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	to reduce intake and mortality is similarly flawed. Only after EPS gives notice that it will not be operational for 180 days and will not be called upon by Cal-ISO for power production will Poseidon have to evaluate possible design or technology measures. Revised Tentative Order, p. 2. The Revised Tentative Order requires submission of a technical report “evaluating the feasibility of any additional design or technology features within 45 days” of notification of EPS shutdown. <i>Id.</i>	
S127	Revised Tentative Order, p. 17. Technology and design features that would reduce intake and mortality during temporary periods of EPS shutdown become no more likely at the point of 180 days of shutdown than at one day of reduced operation. <i>Id.</i> The proper time for technology and design feature planning was at the time of the NPDES permit issuance, or within the 180 day timeline articulated in section VI.C.2.(e).	Comment Noted.
S128	The first alarming element of this provision is the requirement of notice that EPS will be shut down for 180 days before a technical report is even required. EPS must first have the foresight to know when it will be shutdown for 180 days, and must simultaneously notify CDP (which is not required anywhere in either the CDP or EPS permits). Then Poseidon has 45 days to develop a plan for technology or design measures to minimize intake and mortality. This plan is subject to Executive Officer review, and is not subject to Regional Board approval or public review. This entire provision amounts to a circumvention of Porter-Cologne and the NPDES Permit section VI.C.2.(e). Not only are these the very measures required by Porter-Cologne at the time of project approval, but they were required under VI.C.2(e). Absolutely no basis exists for allowing Poseidon to formulate design or technology measures subsequent to construction of CDP, and without public review or Regional Board approval.	Comment Noted.

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	Moreover, the imposition of only design or technology measures does not meet the section 13142.5(b) mandate that “best available site, design, technology, and mitigation measures feasible shall be used to minimize the intake and mortality of all forms of marine life.” Porter-Cologne § 13142.5(b).	
S129	Another fatal flaw of the proposed requirement is the assertion that any feasible design or technology measures are identified in the Minimization Plan. The Revised Tentative Order asserts that CDP has little control over co-location operation and therefore the existing intake meets the best available design criteria. Revised Tentative Order, p. 7. Thus, no design measures are required. The only measures mentioned in the order are modified EPS pump configuration to reduce inlet and fine screen velocity and ambient temperature processing. <i>Id.</i> However, with little to no explanation, these measures are predetermined likely to be successful.	Comment Noted.
S130	<i>Id.</i> With no information or quantification, it is unreasonable to assume any reductions in mortality will result. Moreover, the Coastal Commission has provided evidence that Poseidon has misrepresented intake velocities and that under all operating scenarios (with or without EPS operation) the intake velocities will always exceed the .5 fps required as best technology by EPA. Coastal Commission Comments to the Regional Board, May 6, 2009, p.2 and Attachment 1.	Comment Noted.
S131	Similarly, the Revised Tentative Order states that the proposed technology for the CDP is the best available technology feasible under co-location operation. Revised Tentative Order, p. 8. The alternative intakes and screening technologies were all discounted as infeasible. Specifically, the alternative screening technologies would interfere with EPS operations. <i>Id.</i> Why EPS operations are relevant in light of the requirement that EPS be shut down for 180 days	Comment Noted.

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	before any co-located technology requirement can even be analyzed (much less imposed) is puzzling. Further, if Poseidon is able to discount certain technologies because of their interference with EPS operations, it would make sense to specifically require those technologies when EPS shuts down for 180 days.	
S132	Regardless of the unexplained reason for imposition of this trigger, it does not meet section VI.2.C.(e) requirements to require minimization of intake when EPS flows are insufficient to meet CDP needs, as explained below.	Comment Noted.
S133	The Regional Board cannot adopt the Revised Tentative Order as proposed to meet the section VI.C.2.(e) requirement of Poseidon's NPDES Permit, Order No. R9-2006-0065. The NPDES Permit was reopened only to assess compliance with this provision.	Comment Noted.
S134	The basic premise of the condition in section VI.C.2.(e) is a Porter-Cologne analysis for CDP operations when CDP is the driving factor for EPS intake. Because Poseidon's Minimization Plan was originally due in January 2007, Poseidon has had more than enough time to evaluate the necessary elements of section 13142.5(b). However, in an effort to hurriedly approve the Minimization Plan, the Revised Tentative Order now contains a provision requiring design <i>or</i> technology requirements after CDP is built, upon notice of 180 days of EPS shutdown, subject only to Executive Officer review. Revised Tentative Order, p. 2.	Comment Noted.
S135	As discussed above, the trigger for design or technology measures is inadequate. However, it also fails to meet the Permit section VI.C.2.(e) requirement for requiring assessment of measures to minimize mortality "when the CDP intake requirements exceed the volume of water being discharged by the EPS." Order No. R9-2006-0065, NPDES No. CA0109223, p. 22. The order requires, as does Porter	Comment Noted.

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	Cologne, measures to reduce intake and mortality when EPS flows fall below 304 MGD (or would do so but for CDP). Thus, requiring a <i>6-month shutdown of EPS</i> before design or technology measures are put in place (or even studied) does not meet the section VI.C.2.(e) or section 13142.5(b) requirements.	
S136	Throughout the approval process, the Regional Board has also made clear and expressed in no uncertain terms that the approval of the Minimization Plan is for co-located operations only.	Comment Noted.
S137	Approval of the Minimization Plan, and Porter-Cologne compliance is valid only until EPS shuts down. At that point, a new and thorough section 13142.5(b) analysis will be required. Although the Revised Tentative Order provides a mechanism for additional technology or design review upon EPS shutdown, this is not consistent with the Regional Board and <i>Poseidon's</i> previous position.	Comment Noted.
S138	Because the Regional Board repeatedly asserted that CDP stand-alone operations would be subject to new Porter-Cologne analysis, changing this mandate at the last minute, after the close of the comment period, with no explanation, is unsupportable.	Comment Noted.
S139	Further, as discussed at length in our previous comment letter, in light of the impending EPS shutdown and regulatory shift in phasing out once-through cooling power plants, compliance with section 13142.5 requires a broader site alternatives analysis than for a co-located CDP. Carlsbad Desalination Project, Environmental Groups' Supplemental Comments, April 6, 2009, p. 5-7, 13-16. This is especially true for a stand-alone CDP, where <i>all</i> intake and mortality will be attributable to CDP and Poseidon will have to meet all the elements of section 13142.5(b) independently.	Comment Noted.
S140	The Revised Tentative Order thus should require not only a	Comment Noted.

**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

COMMENT NUMBER	COMMENTS and/or CONCERNS	REGIONAL BOARD RESPONSE
	design and technology review under section 13142.5 upon EPS shutdown, but must also clarify that Porter-Cologne section 13142.5(b) requires consideration of all its elements: the best site, design, technology, <i>and</i> mitigation measures.	
S141	The Revised Tentative Order does not accurately reflect the Regional Board's directive given at the April 8th hearing, nor does it satisfy the NPDES Permit condition or Porter-Cologne section 13142.5(b). Without the requested revisions and clarifications, the Regional Board cannot move forward with approval of the Minimization Plan or adoption of the Revised Tentative Order.	Comment Noted.

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION
TENTATIVE ORDER NO. R9-2009-0038**

**AMENDING ORDER NO. R9-2009-0065 (NPDES NO. CA0109223) WASTE DISCHARGE REQUIREMENTS
FOR THE POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT,
DISCHARGE TO THE PACIFIC OCEAN VIA THE ENCINA POWER STATION DISCHARGE CHANNEL**

RESPONSES TO ORAL COMMENTS RECEIVED ON APRIL 9, 2008, FEBRUARY 11, 2009, AND April 8, 2009

Order No. R9-2006-0065 (NPDES NO. CA109223) will be amended as stated in Order No. R9-2009-0038 for the reasons stated herein and as explained more fully in the following responses.

COMMENT NO.	COMMENTS AND/OR CONCERNS	REGIONAL BOARD RESPONSE
PUBLIC TESTIMONY RECEIVED APRIL 9, 2008		
1. Testimony of Gabriel Solmer on behalf of San Diego Surfrider Foundation and San Diego Coastkeeper		
1.	Making decision two weeks before agency coordination meeting is inappropriate in light of mandate in Porter-Cologne Section 13225. You need to coordinate not just because of the mandate of Porter-Cologne but to get the, take advantage of the agency resources and expertise on this issue.	<p>This comment has been superseded by intervening activity and is moot. The Discharger's mitigation proposal was not approved at the April 9, 2008 hearing. Instead, consistent with the Regional Board's directive, the Discharger engaged in a months-long interagency process to develop the mitigation proposal, the MLMP now incorporated in the Minimization Plan as Part A of Chapter 6. The MLMP was approved by the Coastal Commission on August 6, 2008.</p> <p>The CDP has benefited from significant additional resource agency input. The Minimization Plan has gone through several revisions, for which there is extensive supporting documentation in the record.</p>
2.	You don't have a valid plan that has been adequately or legally noticed before you to vote on.	This comment has been superseded by intervening activity and is moot.
3.	The flow impingement and entrainment minimization plan has not been available to you for a year. It's been available to you for just about a month in its revised form. And the	This comment has been superseded by intervening activity and is moot.

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POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT
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	technical report that is on the agenda today that is before you, it was only written on Friday, five days ago, and wasn't available to the public until after the public comment period had closed. You should not consider an issue where not only do we not have responses from the staff to our comments; we weren't even able to comment on what's before you today.	
4.	The revised plan is still incomplete. Even in Poseidon's own words it's not right for final approval. They want you to approve this intermediary process. Which proponents have called a plan, but it's not the same as this plan called for in your permit.	This comment is moot. Subsequent to this comment, the Discharger submitted revisions to the Minimization Plan, the most recent draft having been submitted on March 27, 2009, which can be found on the Regional Board website.
5.	You heard a lot of people say this project has been approved by a number of different agencies. Any time that you've heard the words that the Coastal Commission has found anything. That's not accurate. The Coastal Commission is voting on revised findings next month. So until they do that, unless anyone can see the future, it's not correct to say that the Coastal Commission has made those findings.	This comment is moot. The Coastal Commission approved the MLMP on August 6, 2008 and adopted final findings on December 10, 2008. (Coastal Commission. Recommended Revised Condition Compliance Findings, MLMP for Coastal Development Permit E-06-013, Poseidon Resources Carlsbad Desalination Project, November 21, 2008, at 13. See http://documents.coastal.ca.gov/reports/2008/12/W16a-12-2008.pdf .)
2. Testimony of Joe Geever Representing San Diego Surfrider Foundation		
6.	The plan as it regards a compensatory restoration project is still a draft proposal not ready for approval.	This comment has been superseded by intervening activity and is moot.
7.	The plan seems final in its conclusions about technologies to reduce the intake and mortality of marine life. However, the technologies discussed in the plan have not been subject to review and are unproven.	The Regional Board is making a final decision about technologies for purposes of CDP operation in co-location mode. The Regional Board has conducted independent and extensive review of the project, the Minimization Plan, and the MLMP and have carefully evaluated compliance with CWC Section 13142.5(b) to ensure that the best available site, design, technology, and mitigation measures feasible will be used to minimize the intake and mortality of marine life.

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8.	The draft plan concludes that after the fact restoration is both legally sufficient and the only feasible alternative. We disagree. The draft plan identified alternative intake systems that eliminate the intake and mortality of marine life, Poseidon refuses to pay for them.	<p>The mitigation called for in the Minimization Plan is not “after the fact,” as the CDP has not yet been constructed, is not currently operating, and is not currently resulting in any intake or mortality. The mitigation site(s) will be designed and implemented as the CDP is under construction, and will be developed during the early years of its operation. There is no history of any loss attributable to the CDP that would render the proposal "after the fact."</p> <p>The Minimization Plan provides for the best available site, design, and technology measures to minimize the intake and mortality of marine life. In addition, the Minimization Plan provides for sufficient mitigation to fully offset projected entrainment and impingement.</p> <p>The infeasibility of alternative intake systems has been fully evaluated.</p>
9.	A final decision that after the fact restoration is legal would be patently incongruent with Porter-Cologne.	See Oral Response No. 8 above.
10.	We implore you to delay any decision on the revised plan until the several agencies have coordinated their actions.	This comment has been superseded by intervening activity and is moot.
11.	There is no mitigation plan in front of the RWQCB.	<p>The Discharger engaged in a months-long interagency process to develop the mitigation proposal: the Marine Life Mitigation Plan (“MLMP”) now incorporated in the Minimization Plan as Part A of Chapter 6. A stakeholder meeting was held on May 1, 2008, which included, among others, staff and experts from the California Coastal Commission (“Coastal Commission”), the Regional Board, State Lands Commission, California Department of Fish & Game, and the National Marine Fisheries Service.</p> <p>After this interagency coordination and consideration of substantial public comment, the MLMP was approved by the Coastal Commission on August 6, 2008. (It should be noted that interagency review and coordination does not mean a consolidated permit was issued.) Following the Coastal Commission’s approval on August 6, 2008, the Regional Board considered</p>

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		the Minimization Plan and MLMP on February 11, 2009 and April 8, 2009. The Regional Board will again consider the Minimization Plan on May 13, 2009.
12.	We agree with Poseidon that Riverkeeper applies only to cooling water intakes. And that's because the federal law only deals with cooling water intakes. But the state law deals with cooling, heating, any industrial use of ocean water. But it does include cooling. So the decision in the Riverkeeper case the rule that EPA had promulgated included exclusions from what they call their performance standards, which was to reduce entrainment by 90 percent, these standards that they were using for minimizing entrainment and impingement. A lot of that rule remanded back to USEPA to rewrite it. But a couple of the provisions in there were strictly prohibited from the remand. So using a cost benefit analysis was thrown out. And they can't put that back in the rule according to Riverkeeper II. Using after the fact restoration was also thrown out. This plan kind of relies on is using after the fact restoration and then using a cost benefit analysis to show that any of the other alternative intakes are infeasible or whatever. Porter-Cologne doesn't distinguish between cooling, heating, or any other industrial process. So if you take the ruling from Riverkeeper II, apply it to cooling water in Porter-Cologne or anything else, there's no distinction between cooling, heating, and industrial processes in Porter-Cologne. So arguably that ruling in Riverkeeper II applies to Porter-Cologne as well. Which would prohibit them from using cost benefit analysis or after-the-fact restoration.	<p>The comment attempts to argue that CWA Section 316(b), a federal law applicable only to power plants, binds the Regional Board's consideration of a desalination plant to which this federal law does not apply. The Regional Board does not agree that its decision in this instance is constrained as argued in the comment. The comment implies a mistaken belief that CWA Section 316(b) applies to a non-power plant use of water withdrawn from a structure, the original purpose of which was to provide cooling water for a power plant. No court ever has applied CWA Section 316(b) as the comment argues, and the State Board specifically rejected such an application in its March 28 Scoping Document.</p> <p>The comment assumes that the Minimization Plan proposes to mitigate even when feasible technology is available but is dismissed on the basis of cost-benefit analysis. Here, the Minimization Plan does not use cost-benefit analysis to disregard technology, and mitigation is provided in addition to technology obligations. Thus, the comment's cost-benefit and after-the-fact restoration arguments are factually irrelevant.</p> <p>The Regional Board agrees that CWC Section 13142.5(b) applies to new or expanded coastal power plants or other industrial installations that use seawater for cooling, heating, or industrial processing, including desalination projects such as the CDP.</p>
3. Testimony of Livia Borak on behalf of San Diego Coastkeeper		
13.	It's not clear if this impingement and entrainment flow minimization plan is an assessment of impact or what it's assessing or what's being approved today.	This comment is moot. The Regional Board conditionally approved the Minimization Plan on April 9, 2008, Resolution R9-2008-0039; however, the Tentative Order proposes to supersede that action.

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		With regard to the assessment of impacts, Chapter 5 of the Minimization Plan estimates impingement and entrainment. Chapters 2, 3, 4, and 6 provide site, design, technology, and mitigation measures to minimize the intake and mortality of marine life, consistent with CWC Section 13142.5(b).
14.	The NPDES permit for the CDP requires--to assess the feasibility of site specific plans, procedures, practices to be implemented or mitigation measures to minimize impacts to marine organisms. Now, this is different from Porter-Cologne. Porter-Cologne requires minimization of entrainment and impingement. This is different. We need to be clear about the difference between mitigation and minimization. Porter-Cologne requires minimization and mitigation as well as best technology, best design, and best site are all ways to minimize impacts.	The Minimization Plan provides for the use of the best available site, design, technology, and mitigation measures feasible to minimize the intake and mortality of marine life, as required by CWC Section 13142.5(b). It respects the distinction between “minimize” and “mitigate.”
15.	<p>The State Water Board has acknowledged the difference between 316B and Porter-Cologne. And we acknowledge that they are different. Porter-Cologne applies to this project. And this has to be assessed. The state board -- this board has the duty to assess whether or not Poseidon has minimized intake mortality, not minimized impacts, not mitigation.</p> <p>It's not clear that this plan has even addressed Porter-Cologne and addressed minimization. And it's clear from Poseidon's response that they feel they don't need to do that. That they've addressed best available site, design, technology to minimize project related impacts. That's not the dictate -- that's not what's dictated by Porter-Cologne. And just to reiterate, mitigation is not the same as minimization. One is a before the fact measure and one is after the fact. Minimization happens before. Mitigation is supposed to be something that takes care of all the impact after the fact, after all minimization has been done that is</p>	<p>The Regional Board agrees that CWA Section 316(b) does not apply to the CDP and that the appropriate legal standard for the CDP is CWC Section 13142.5(b). This is the standard under which the Regional Board has reviewed the Minimization Plan.</p> <p>The Minimization Plan's express objective is to minimize intake and mortality of marine life; the focus is not on “impacts.” Intake and mortality of marine life is minimized by minimizing impingement and entrainment. The word “impacts” occasionally has been used to refer to entrainment and impingement because, from a functional standpoint, minimizing “intake and mortality” and minimizing “impacts” both result in avoiding and/or compensating for entrainment and impingement.</p> <p>The Regional Board has fully considered all aspects of CWC Section 13142.5(b), including all measures feasible to minimize the intake of mortality of all forms of marine life.</p>

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	<p>feasible. There is no analysis like this contained in this plan. And as far as what, what analysis is required, it's not supposed to be fragmented and sequential as it is in Poseidon's letter, it states that they've sequentially analyzed the steps that have been taken by Poseidon to address the provisions they feel they need to address.</p> <p>They've fragmented the whole process. Porter-Cologne requires a holistic approach to minimizing impacts. The plan basically says this is our site. We need to produce this much water we require 304 MGD, so this is what we can afford and this is what we're going to mitigate, not the mandates of Porter-Cologne. And that basically takes the mandates of Porter-Cologne and turns it on its head allowing a project proponent to choose what exactly they want to mitigate and say for us this is not the best, that's not what best available means. A legally defensible plan will not only meet the requirement that you've imposed on Poseidon in the NPDES permit for this plan, but also meet the mandates for Porter-Cologne, which has not been done. As the Regional Board, you require this information, because you need to the impacts of the project. You need to analyze what is possible for a project to minimize impacts before you can decide what mitigation actually is.</p>	
16.	<p>Riverkeeper II though it does apply to Clean Water Act 316B. The Clean Water Act is a technology forcing statute, 316B is, and it requires best available technology. And in the decision the court basically said that EPA was to find a beacon, as you will, of what the technology is. And in doing that cost benefit analysis was not appropriate. And in finding that whatever the best technology is, that is cost effectiveness can be utilized after that in finding out what kind of ranges for technology the EPA can have as a substitute for this best technology. That the best performing</p>	<p>The Regional Board does not concur that federal technology forcing must be extended to state law.</p>

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	technology is it. So best available technology is what is the best technology that can be reasonably borne by the industry. And that would lend courts Porter-Cologne kind of a analysis to go by.	
4. Testimony of Ed Kimura Representing Sierra Club San Diego Chapter		
17.	The State of California Marine Life Management Act now requires an approach to evaluate the impacts on the marine life. And in order to ensure the protection of the health of the marine resources. The eco systems approach evaluates the many interaction among the various marine organisms when subjected to stresses human or natural. This holistic approach is a departure from the past, which is directed to the evaluation of stress on individual species. This time it's taken the whole group of impacts.	<p>The law does not require the Minimization Plan to contain a comprehensive monitoring program that evaluates the current health of the marine ecosystem within the impacted area. On the basis of comprehensive monitoring of Agua Hedionda Lagoon and the EPS intakes, the Minimization Plan is based on intake and mortality under existing conditions, and requires the Discharger to monitor for impingement to verify impingement levels or otherwise adjust compensation obligations. This approach reflects the particularized effects that a seawater intake can have on an ecosystem.</p> <p>The law does not require monitoring of areas not impacted by the intake system. The Minimization Plan is based on a highly-detailed, comprehensive and independent baseline study of the Agua Hedionda Lagoon marine environment, which was properly used to calculate baseline levels of entrainment and impingement as well as other characteristics of the marine environment and the surrounding area.</p>
18.	The plan fails to follow this eco system approach. The impingement and entrainment plan narrowly focuses primarily on fish and fish larvae, it fails to integrate the interactions among all the marine organisms from the bottom of the food chain all the way up to the top. And when they are subjected to losses from impingement and entrainment. The plan concludes that the impingement losses are, quote, de minimus in deciding that this amounts to 2.1 pounds of fish per day. However, it fails to point out that in the yearly basis there are over 19,000 fishes and over 96 species that were killed by impingement. The plan provides very little information on other important marine organisms besides fish larvae that are entrained.	See Oral Response No. 17 above.

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19.	The plan fails to provide a comprehensive monitoring program that evaluates the current health of the marine eco systems within the impacted area, as well as a reference area not impacted by the seawater intakes.	See Oral Response No. 17 above.
20.	The plan proposes a micro screen to minimize entrainment losses, but it has no plan on how they're going to evaluate this or when they're going to implement it.	This comment has been rendered moot by subsequent activities or actions.
21.	The proposed mitigation plan narrowly focuses on fish but fails to offset the losses of the rest of the marine organisms. The power plant diverts seawater from Agua Hedionda which contains both resident species of marine organisms as well as non resident which come in from the coastal areas. The plan provides no information on these marine organisms such as the species and abundance. Without this information, we doubt whether any mitigation plan will succeed.	<p>The MLMP is not narrowly focused, and includes mitigation for five non-resident, ocean species. Pursuant to the Biological Performance Standards set forth in section 5.4(b) of the MLMP, the success of the MLMP shall be measured against similar habitats with respect to a number of enumerated criteria. Among these, the MLMP specifically requires that "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." MLMP Section 5.4(b)(1).</p> <p>As discussed in section 3.2 of the MLMP, the principle objective of the MLMP is to provide maximum overall ecosystem benefits, e.g. maximum upland buffer, enhancement of downstream fish values, provide regionally scarce habitat, and potential for local ecosystem diversity.</p> <p>Further, the strict standards in the MLMP 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.</p>
PUBLIC TESTIMONY RECEIVED FEBRUARY 11, 2009		
1. Testimony of Marco Gonzalez on behalf of San Diego Surfrider Foundation and San Diego Coastkeeper		
22.	Porter-Cologne Section 13142.5 is the cornerstone of where you begin your, and really, end your consideration. It says that the desalination plant shall use the best available site to minimize the intake and mortality of marine life.	The Regional Board agrees that the appropriate legal standard is CWC Section 13142.5(b), but Commenter's paraphrasing of CWC Section 13142.5(b) is incomplete. CWC Section 13142.5(b) provides: "For each new or expanded coastal power plant or other industrial installation using seawater for cooling, heating, or industrial processing, the best available site,

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		design, technology, and mitigation measures <i>feasible</i> shall be used to minimize the intake and mortality of all forms of marine life.” (Emphasis added.) Commenter omits the word “feasible,” which is an important qualifier in determining whether a project has satisfied the statutory standard for “site.”
23.	[This] means you have to put the desal plant in a place where you can minimize the intake and mortality of marine life. That doesn't mean you consider where you put the physical plant, you consider where you put the intake. All of the alternatives analysis that's been given to you talks about where you locate the actual physical plant.	<p>To the extent the Commenter suggests that CWC Section 13142.5(b) does not require consideration of the physical location of the plant, the Regional Board disagrees. CWC Section 13142.5(b) specifically states that: “For each new power plant or industrial installation ..., the best available site ... feasible shall be used to minimize the intake and mortality of all forms of marine life.”</p> <p>The CDP site is the best available and feasible to minimize intake and mortality of marine life. By co-locating with the EPS, the CDP will be able to use the EPS's pre-existing intake and discharge system and convert the seawater discharged by the EPS after use for cooling operations into potable water. Only when the EPS does not produce enough cooling water discharge will seawater be withdrawn solely to meet the requirements of the CDP.</p> <p>In addition to reducing the unnecessary intake of seawater by providing for the reuse of water discharged by the EPS for desalination, co-locating with the EPS allows the CDP to avoid environmental and economic costs that would be associated with the construction of a new intake system.</p> <p>The Report of Waste Discharge submitted by the Discharger identified the EPS site as the final project site. The Regional Board evaluated the project application on the basis of this site when it adopted Order No. R9-2006-0065 on August 16, 2006. That Order was unsuccessfully challenged, and it is too late to bring any further challenge.</p> <p>To the extent the Commenter suggests that the Discharger did not consider alternative intakes, the Regional Board disagrees. The Discharger evaluated numerous alternative intake systems, such as subsurface intake and an offshore intake, all of which were determined to be infeasible and/or more</p>

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		environmentally damaging than use of the existing EPS intake.
24.	[W]e've only, since day one, talked about one intake. And that's the intake at the Encina Power Station. Now, there may have been an alternative study done for subsurface intakes at the Encina Power Station, but we've seen no alternative location anywhere around the coast.	<p>The comment appears to suggest that the Discharger did not consider any alternative locations for the CDP. As explained in Chapter 2 of the Discharger's Minimization Plan, the Discharger considered three possible alternative sites within the City of Carlsbad: (1) other locations within the EPS property; (2) the Encina Water Pollution Control Facility; and (3) the Maerkle Reservoir.</p> <p>Alternative sites within the EPS property were infeasible because the power plant owner has reserved the remaining portion of the site to accommodate future power plant modifications, upgrades, or construction of new power plant facilities. The Encina Water Pollution Control Facility was rejected because it would be able to accommodate only a desalination plant with a capacity of 10 MGD desalinated water, which is cost-ineffective and insufficient to meet user demands. Because of its lack of proximity to the intake system, this site also would require the construction of a 2-mile long water transport pipe, increasing environmental impacts and project costs. These factors, among others, made that site infeasible.</p> <p>The third site option, Maerkle Reservoir, located 10.6 miles east of the proposed site, was rejected because the necessary construction changes would increase construction costs, and therefore water costs, to such a degree as to make the CDP infeasible without any measurable environmental benefit. Insufficient space exists in the public rights-of-way between the Maerkle Reservoir site and the ocean to accommodate the needed pipelines, and it would be extremely disruptive to construct pipelines outside existing rights-of-way. After considering these alternative locations, the Regional Board agrees that the co-located site satisfies CWC Section 13142.5(b).</p> <p>The Discharger also analyzed an alternative desalination project proposed for Dana Point, which would use slant well technology. This technology was found infeasible for the CDP because, among other things, pilot testing indicated that the water quality would be difficult if not impossible to treat, and the many multiple slant wells would be required on the beach, disrupting</p>

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		public access and recreation. The Coastal Commission found, and the Regional Board agrees, that the multiple smaller slant wells required would result in far greater environmental impacts than the CDP, and would be insufficient to address water needs.
25.	And you will hear Poseidon at some point say, “But wait a second, this is a Carlsbad-specific project. We define our project so narrowly that it has to be in Carlsbad.” No, it doesn’t. Look at all the water agencies that are purchasing water. They’re not getting it directly piped. It’s paper transfers, as anybody who deals with water knows.	<p>To the extent that the comment criticizes the reasons for the CDP’s location in Carlsbad, the argument is unavailing. The EPS site is the best available site feasible to locate the CDP and alternative site locations are not feasible and do not meet project objectives.</p> <p>On a policy level, reliance on paper-water transfers over significant distances has proven to disappoint many end users of water in recent years. Even State Water Project (“SWP”) contracts have not protected end users, as courts have observed that entitlements to water from the SWP “represent nothing more than hopes, expectations, water futures or . . . ‘paper water’.” <i>See, e.g., Planning & Conservation League v. Dep’t of Water Res.</i>, 83 Cal. App. 4th 892, 908 n.5 and 914 n.7 (2000) (“Paper water always was an illusion. ‘Entitlements’ is a misnomer, for contractors surely cannot be entitled to water nature refuses to provide or the body politic refuses to harvest, store, and deliver. Paper water represents the unfulfilled dreams of those who, steeped in the water culture of the 1960’s, created the expectation that 4.23 [million acre-feet per year] of water could be delivered by a SWP built to capacity.”); <i>see also Cal. Oak Foundation v. City of Santa Clarita</i>, 133 Cal. App. 4th 1219, 1228 (2005) (quoting <i>Planning & Conservation League v. Dep’t of Water Res.</i>, 83 Cal. App. 4th at 908 n.5 and 914 n.7, for the foregoing proposition).</p>
26.	[I]n their presentation, they say this is a regional problem. The drought is a statewide problem. Locating a desalination plant that’s purportedly going to meet the County Water Authorities fabricated need for 56,000 acre feet is not a Carlsbad local issue.	Commenter’s argument is flawed to the extent it attempts to minimize the urgent need for water in the Carlsbad region. That drought is a statewide issue does not undermine the fact that Carlsbad residents, as well as residents in the surrounding areas, have a pressing need for water. The comment offers no support for the assertion that the County Water Authority has fabricated a need for 56,000 acre-feet of water. The Discharger is contracted to meet 100% of Carlsbad’s potable water requirements.

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FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

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27.	Your standard of review under Porter-Cologne says you have to choose the best available site to minimize intake and mortality of marine life. We don't even have that analysis. We don't even know where the best available site is because they've only looked at one site.	<p>Commenter paraphrases CWC Section 13142.5(b) by omitting the term "feasible." The statute requires the CDP to use "the best available site ... <i>feasible</i> ... to minimize the intake and mortality of all forms of marine life," in addition to the best available design, technology, and mitigation measures feasible. (Emphasis added.)</p> <p>See Oral Response No. 24 above.</p>
28.	The best available design to minimize intake mortality, we've only looked at a 50 MGD site --- or design. We haven't looked at a 30 or a 20.	<p>CWC Section 13142.5(b) requires the Project to use "the best available site, design, technology, and mitigation measures <i>feasible</i> ... to minimize the intake and mortality of all forms of marine life." (Emphasis added.) Although not legally required, the Discharger conducted an analysis, in which it determined that 50 MGD of fresh water will be an economically viable enterprise and that smaller alternatives (25 MGD and 10 MGD) were infeasible and did not meet project objectives.</p> <p>The Department of Water Resources 2006 Water Plan Update indicates the Project will produce about 10% of the desalinated water needed in California by 2030, and the Metropolitan Water District of Southern California identified a need for 150,000 AFY of desalinated water to ensure regional reliability, including 56,000 AFY from the Project.</p>
29.	We've invalidated all of the alternative intakes that could be done here in Carlsbad, because they don't meet the criteria for producing 50 MGD.	<p>The EIR prepared for the CDP included an analysis of the feasibility and environmental impact of several types of alternative intake systems pursuant to the Modified Intake Design Alternative. The EIR concluded that the use of horizontal wells, vertical beach wells, and infiltration galleries in lieu of the project's proposed use of the power plant intake system was either infeasible and/or had greater environmental impacts than the proposed project. Project EIR at Section 6.3, cited by Coastal Commission in Final Adopted Findings – Coastal Development Permit Application E-06-013, Approved August 6, 2008, at 48.</p> <p>The Coastal Commission reached a similar conclusion, finding "that the substantial weight of the evidence is that subsurface intakes are an infeasible alternative" because (1) "the proposed alternatives would result in greater environmental impacts than the proposed project due to destruction of</p>

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		<p>coastal habitat from construction of the intake systems, the loss of public use of coastal land due to numerous intake collector wells that would be located on the beach, and the adverse environmental impacts to coastal resources during construction, including but not limited to the creation of negative traffic, noise, and air pollution impacts”; and (2) of “site-specific geologic and/or water quality conditions, which render the water untreatable, and the increased and prohibitive.” Final Adopted Findings – Coastal Development Permit Application E-06-013, Approved August 6, 2008, at 51.</p> <p>Chapter 4.2 of the revised Minimization Plan contains a detailed hydrogeologic review evaluating the feasibility of subsurface intakes in the vicinity of the proposed desalination plant. This site-specific review demonstrates that subsurface intakes (e.g., beach wells, slant wells, horizontal wells, and filtration galleries) are not feasible due to (1) limited production capacity of the subsurface geological formation, (2) insufficient sediment depths in the vicinity of the site, and (3) poor water quality of the collected source water.</p> <p>A sub-seafloor intake would require new construction, with associated environmental and economic costs, because such a system does not currently exist at the EPS site. Reuse of the EPS intake avoids new construction and provides for beneficial reuse of EPS’s discharge water in when in co-location mode for CDP benefit.</p> <p>While the comment suggests without factual basis that it was feasible to downsize the proposed project, this has been proven not to be the case. In response to Commenter’s suggestion that the size of the CDP should be reduced to accommodate alternative intake structures, the EIR evaluated a “reduced project capacity” alternative, which “would consist of a desalination facility with a maximum product water output of 25 MGD, or half that of the proposed project.” The EIR determined that “this project would not provide sufficient production capacity to meet planned water supplies for seawater desalination as a component of regional water supplies...”</p> <p>The Regional Board agrees that producing sufficient water to satisfy the City</p>

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		<p>of Carlsbad's demand, the demand of other local agencies, and the Project's planned contribution of desalinated water as a component of regional water supplies are key objectives that could not be met with a scaled down project.</p> <p>The Minimization Plan includes an analysis of the feasibility of the use of alternative subsurface intakes for the CDP, and based on this analysis, the Regional Board has determined that the alternative intakes that were evaluated are incapable of providing sufficient seawater to support the CDP.</p> <p>a. None of the subsurface intake systems considered (vertical wells, slant wells, or horizontal wells) can deliver the 304 MGD of seawater needed for environmentally safe operation of the CDP. The maximum capacity that could be delivered using subsurface intakes is 28,000 gpm (40 MGD), which is substantially below the needed intake flow.</p> <p>b. The quality of the water available from the subsurface intake (salinity twice that of seawater, excessive iron and high suspended solids) would be untreatable.</p> <p>c. The alternative subsurface intake systems were determined not to be the environmentally preferred alternative. Taking into account economic, environmental and technological factors, the alternative subsurface intakes are not capable of being accomplished in a successful manner within a reasonable period of time, and are infeasible.</p> <p>d. The Coastal Commission Findings approving the CDP's coastal development permit concur with this conclusion: "[T]he Commission finds that the substantial weight of the evidence is that subsurface intakes are an infeasible alternative." (See Coastal Commission Recommended Revised Findings Coastal Development Permit for Poseidon Carlsbad Desalination Project, page 62 of 133.)</p> <p>e. The Regional Board finds that each of these subsurface intake alternatives is infeasible based on each of these separate and independent reasons.</p> <p>Vertical beach intake wells are water collection systems drilled vertically to intercept a coastal aquifer.</p> <p>a. To meet the 304 MGD seawater demand of the project, 253 wells of a 1.5 MGD intake capacity each would have to be constructed along 7.2 miles of</p>

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		<p>coastline to collect and transport the water to the proposed desalination facility. Irrespective of the specific location of these vertical wells, the siting, construction and continued operation of 253 wells along 7.2 miles of coastline would result in significantly more environmental impacts, including, but not limited to, negative traffic, noise, and air pollution impacts for a period of two years during construction, and long-term disturbance of, and loss of public access to, the area occupied by the wells.</p> <p>b. The total cost of the implementation of a vertical well intake would be approximately \$650 million. (See Minimization Plan, Attachment 2.) 17</p> <p>c. The Regional Board finds that the installation of vertical beach wells is infeasible, and that such installation would also be infeasible even if the project were located at another site in coastal California.</p> <p>Separately, the site-specific conditions of the Project prevent the use of vertical beach intake wells, as the EPS site does not contain over seven miles of coastline to place the necessary number of wells to meet Project capacity.</p> <p>Horizontal wells are vertical wells that incorporate an additional series of horizontal collection arms extending into the coastal aquifer from a central collection caisson in which the source water is collected.</p> <p>a. Due to the limited diameter of the collection arms of the horizontal wells, the production rate is limited to 1,760 gpm (2.5 MGD) per well. The Dana Point Ocean Desalination Project test well confirmed this limited production rate by documenting a yield of 1,660 gpm (2.4 MGD) from a 12-inch diameter well in that location.</p> <p>b. Even assuming ideal conditions for this type of wells can exist elsewhere (i.e., each well could collect 5 MGD rather than the 2.5 MGD determined based on actual hydrogeological data), horizontal well intake construction would require the siting, installation and continued operation of a total of 76</p>

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		<p>horizontal wells, impacting a total length of coastal seashore of 4.3 miles and resulting in greater environmental impacts similar to those associated with the installation of vertical beach wells.</p> <p>c. The cost for construction of a horizontal well intake system for collection of 304 MGD of seawater needed for the desalination plant operation is estimated at \$438 million. (See Minimization Plan, Attachment 2.)</p> <p>d. The Regional Board finds that the horizontal intake system is infeasible and that such installation would also be infeasible even if the project were located at another site in coastal California.</p> <p>Additionally, specifically within AHL, the limited width of the alluvial channel permits placement of approximately only 14 horizontal wells, for a total production rate of 28,000 gpm (40 MGD), significantly below the Project's required production of 304 MGD. The horizontal intake system would require installation of nine large pump stations located on Tamarack State Beach, disrupting public access to marine and beach resources. A horizontal intake system is infeasible due to site-specific conditions as well.</p> <p>Slant-drilled wells are drilled at an angle from the beach or from further inland, with a perforated well casing that extends below the seafloor to intercept water from below the substrate.</p> <p>a. The use of slant wells is infeasible because pilot testing indicates that the quality of the water available from subsurface intakes would be so low as to be difficult, if not impossible, to treat due to salinity concentrations twice that of seawater, excessive iron, and high levels of suspended solids.</p> <p>b. Studies performed by the Discharger confirm that, at best, one slant well could provide only 5 percent of the water required by the Project. (See Poseidon Resources Corporation Transmittal of Analysis of Alternative Subsurface Seawater Intake Structures, Proposed Desalination Plant, Carlsbad, CA, Wiedlin & Associates (January 30, 2007), sent to California Coastal Commission February 2, 2007; Coastal Commission Findings</p>

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		<p>adopted August 6, 2008, page 49 of 106, and note 71.)</p> <p>c. A recent study conducted by the Municipal Water District of Orange County (MWDOC) showed that slant-drilled wells could be used to draw in 30 MGD of seawater for a proposed desalination facility near Dana Point through the use of nine, 500-foot wells extending under the seafloor, each with buried submersible electric pumps. Relying on the results of this study, the Board finds that approximately ninety, 500-foot wells would be required to be installed along the coastline to supply 304 MGD. Regardless of Project location, many multiple slant wells would be needed to meet Project objectives.</p> <p>d. The Regional Board finds that this option is infeasible at any location in coastal California because it would disrupt public beach access and recreation and create greater environmental impacts and costs.</p> <p>e. The total construction costs for implementation of slant wells would exceed \$410 million. This represents a significant 139 percent increase in construction costs for the Project, which not only would defeat the Project objective of providing affordable water supply to the San Diego Region, but would render the Project infeasible. (See Minimization Plan, Attachment 2.)</p> <p>An infiltration gallery consists of a series of perforated pipes that are placed in a trench dug on the seafloor, which is then backfilled with sand.</p> <p>a. To meet the source water intake feed rate of 304 MGD needed for the Project, 146 acres of ocean floor would need to be excavated to build a seabed intake system of adequate size, impacting three linear miles of sensitive nearshore hard bottom kelp forest habitat.</p> <p>b. The excavation of a 146-acre/3-mile-long strip of the ocean floor at depth of 15 feet in the surf zone to install a seabed filter system of adequate size to supply the CDP would result in a very significant impact on the benthic marine organisms in the excavated area. (See Poseidon Resources Corporation, 19 Additional Analysis of Submerged Seabed Intake Gallery,</p>

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		<p>October 8, 2007; Coastal Commission Findings Adopted August 6, 2008, pages 49 and 50 of 106, and note 73.)</p> <p>c. The Board finds that an infiltration gallery is infeasible and that such seawater intake system would also be infeasible even if the project were located at another site in coastal California.</p> <p>d. The cost for construction of subsurface seabed intake system for collection of the 304 MGD of seawater needed for the desalination plant operation is estimated at \$647 million, 215 percent higher than the cost of the entire proposed Project. Such an increase in costs would render the Project infeasible. (See Minimization Plan, Attachment 2.)</p> <p>In addition, the subsurface seabed intake system would be infeasible due to site-specific geologic conditions at the City of Carlsbad.</p> <p>a. To collect the seawater from the filter bed and transfer it to the CDP, the intake system would require 76 collector pipelines on the ocean floor connected to pump stations that would be installed on Tamarack State Beach, which would limit public access to the beach for a period of 2 to 4 years, result in significant loss of recreational activities for the City of Carlsbad, and result in a permanent loss in public access and visual resources impacts where the collection wells are located. (See Poseidon Resources Corporation, Additional Analysis of Submerged Seabed Intake Gallery, October 8, 2007; Coastal Commission Findings adopted on August 6, 2008, page 50 of 106.)</p> <p>b. Excavation of a three-mile-long-by-400-feet-wide strip of seafloor will make this area of the ocean unavailable for recreational activities such as fishing and diving and will result in additional NOx and carbon dioxide gas emissions associated with operation of barges and platforms and equipment needed to excavate and remove the ocean shelf material over this vast area. (<i>Id.</i>)</p> <p>c. In order to secure consistent operation of the filter bed, this bed would need to be dredged every one to three years to remove the sediment and</p>

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		<p>entrained marine life that would accumulate in the intake filter bed and over time will plug the bed. The dredged material would need to be disposed away from the one-mile strip of the intake filter bed in order prevent the removed solids from returning to the area of the bed. This will not only result in frequent adverse impacts of the marine flora and fauna in the area but will also render the area unavailable for recreational activities during maintenance activities. (<i>Id.</i>)</p> <p>The Minimization Plan includes an analysis of whether the construction and operation of a new offshore intake to serve the seawater supply needs of the CDP would be a feasible alternative to the use of the existing EPS intake system. Based upon this evaluation, the Regional Board concludes that the construction and use of an offshore intake system would not reduce the frequency of dredging in AHL, would cause permanent construction-related impacts to the marine environment and would shift entrainment to a more sensitive area of the marine environment, which would affect a greater diversity of species. Use of an offshore intake system is infeasible and not the environmentally preferred alternative. Construction of an offshore intake system would render the Project infeasible due to a significant increase in project costs. (See Poseidon Resources Corporation, Analysis of Offshore Intakes, October 8, 2007 (including attachments); Comparative Analysis of Intake Flow Rate on Sand Influx Rates at Agua Hedionda Lagoon: Low-Flow vs. No-Flow Alternatives, Jenkins and Wysal, September 28, 2007; Coastal Commission Findings adopted August 6, 2008, page 51 of 106.)</p> <p>In addition, the Discharger evaluated a draft EIR commissioned by the State Lands Commission related to an AHL jetty extension project (Jetty EIR). Based on this evaluation, the Regional Board concludes that the Jetty EIR does not analyze the full extent of the biological impacts of installing a large diameter pipe 1000 feet offshore, which, depending on placement, would potentially destroy existing rocky reef outcroppings occurring offshore. (See Issues Related to the Use of the Agua Hedionda Inlet Jetty Extension EIR to Recommend An Alternative Seawater Intake for the Carlsbad Desalination Project, Graham, Le Page and Mayer, October 8, 2007.) In addition, the Jetty EIR did not evaluate the down-coast effects of an intake structure on habitat,</p>

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		sand flow, or sedimentation. (<i>See id.</i>) Further, the Jetty EIR did not adequately evaluate entrainment and impingement impacts of an offshore intake. The Regional Board concludes that an offshore intake has the potential to affect a greater diversity of adult and juvenile organisms, as well as both phyto and zooplankton species, than the species currently impacted by the EPS's existing intake. (<i>Id.</i>) The biofouling community of organisms that will take up residence in the intake pipe will consume virtually all of the entrained plankton. This has implications for the survival potential of organisms that can survive passage through the EPS. (<i>Id.</i>)
30.	The best available technology and the best available mitigation measures, remember to minimize intake, because this is important when you consider the standard that Poseidon thinks applies to it. And I'm taking this straight from the letter that they submitted back in – on March 2nd, 2008, before that last approval, conditional approval. And it's important because this was threaded through everything that they did. Look at what they talk about. They think 13142.5 says that you have to choose site design technology and mitigation to minimize the impacts to marine life.	The Minimization Plan's clear objective is to minimize intake and mortality of marine life by minimizing impingement and entrainment; the focus is not on "impacts." The Plan satisfies CWC Section 13142.5(b) by specifically providing for the minimization of entrainment and impingement. The word "impacts" has occasionally been used to refer to entrainment and impingement. To the extent Commenter believes something beside entrainment and impingement is relevant, he has not provided any such information as to what that would be.
31.	And you see they went into great detail to – to specify that their Marine Life Mitigation Plan at that point dealt with the best site to minimize impacts to marine life, the best design to minimize impacts. And so we have to ask ourselves, what's the difference between minimize intake and minimize impact? It's really a plain reading. It's common sense. One, it's the wrong standard. You've got to go by with what the statute actually says.	The Minimization Plan's objective is to minimize intake and mortality of marine life by minimizing impingement and entrainment; the focus is not on "impacts."
32.	316(b) says on its face that you have to minimize adverse environmental impacts with respect to the location design, construction, and capacity of cooling water.	CWA Section 316(b) does not apply to the Project. The appropriate legal standard for the CDP is CWC Section 13142.5(b).

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33.	316(b) does not apply.	The Regional Board agrees that CWA Section 316(b) does not apply to the CDP. The appropriate legal standard for the CDP is CWC Section 13142.5(b).
34.	So the question we ask ourselves, why is Poseidon applying 316(b) standard, or language regarding impacts instead of intake when we all know that 13142.5 is the applicable standard.	Neither the Regional Board nor the Minimization Plan is applying a CWA Section 316(b) standard to the CDP, and the Regional Board agrees that CWC Section 13142.5 is the applicable standard. The Minimization Plan's objective is to minimize intake and mortality of marine life by minimizing impingement and entrainment; the focus is not on "impacts." To the extent Commenter asserts a distinction between "impacts" and "intake and mortality," the Commenter has provided no information to support the distinction, which appears to be argument only.
35.	[T]he problem is that liberal construction of 316(b) no longer exists. The idea that a technology forcing statute in the Clean Water Act could be read to allow you to have the impact and then go mitigate elsewhere, it's been turned on its head by the <i>Riverkeeper</i> case	<p>The comment discusses an "idea" that has no relevance under CWC Section 13142.5(b), which, in contrast to CWA Section 316(b), specifically identifies mitigation as an approach to minimize intake and mortality. The comment arises from CWA Section 316(b), which does not apply to the CDP.</p> <p>To the extent that Commenter is criticizing the inclusion of mitigation measures in the Minimization Plan or MLMP, that criticism is unfounded because CWC Section 13142.5(b) specifically requires the use of the best available and feasible mitigation measures (as well as the best available feasible site, design, and technology).</p> <p>As a factual matter, unlike the restoration at issue in the <i>Riverkeeper</i> cases, the Minimization Plan does not call for the use of mitigation in lieu of, or as a, technology. Rather, the Minimization Plan provides for the use of the best available mitigation feasible <i>in addition to</i> best available, site, design and technology measures.</p>
36.	Now, we will agree, 316(b) doesn't apply.	The Regional Board agrees that CWA Section 316(b) does not apply to the CDP. The appropriate legal standard for the CDP is CWC Section 13142.5(b).

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37.	But the important thing to realize is even using the liberal standard as Poseidon interprets it, the courts have said that doesn't fly.	CWA Section 316(b) has not been applied in this situation. The comment does not explain what it means by "liberal standard," and this comment is vague and ambiguous. The Minimization Plan reflects the appropriate standard of CWC Section 13142.5(b).
38.	And your own State Water Resources Control Board, in a document last year, or maybe a year and a half ago, the scoping document on once-through cooling addresses there is a very concrete distinction between minimizing intake and minimizing impacts. You have to cross that threshold. You have to do the analysis.	To the extent Commenter is referring to the scoping document released by the State Board in March 2008 entitled, "Water Quality Control Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling," it is worth noting that such document dealt with the proposed development of a state policy for water quality control to establish requirements for implementing CWA Section 316(b) for existing coastal and estuarine power plants. CWA Section 316(b) does not provide the legally applicable standard for the CDP. It also should be noted that a scoping document is not a policy but a working document that does not necessarily result in a mandate. The Minimization Plan's objective is to minimize intake and mortality of marine life by minimizing impingement and entrainment; the focus is not on "impacts."
39.	Now, we're seeing in our legal briefing, where the Coastal Commission is kind of juggling and trying to say, "Well, we impliedly kind of did this already." But I ask you, look in your packets, and tell me where you see the minimization of intake spotlighted with respect to site design, technology and mitigation measures.	The Coastal Commission did a comprehensive analysis of Project-related entrainment before approving the MLMP. This is among the tasks the Regional Board is being asked to do under CWC Section 13142.5(b) when evaluating whether the Minimization Plan provides for the minimization of intake and mortality of marine life. The Minimization Plan comprehensively details how all four elements required by CWC Section 13142.5(b) to be considered – site, design, technology, and mitigation – will be used to minimize intake and mortality.
40.	The fact of the matter is it's a more restrictive standard, and it applies before the impact takes place. It just hasn't been addressed. It hasn't been appropriately considered. And until it gets done, it's a fatal flaw that frankly, it is fatal.	This comment is unclear. The Minimization Plan's objective is to minimize intake and mortality of marine life by minimizing impingement and entrainment; the focus is not on "impacts."
41.	Remember, all of these power plants, they're doing their mitigation. Look at the Southern California Edison mitigation	The success of SCE's mitigation for the San Onofre Nuclear Generating Station to which Commenter refers is well-documented. The MLMP's strict

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	upon which the Applicant is relying. It's a big off-site mitigation. It's 30 years after they started operating. Are we going to wait that long to see a successful mitigation? And we don't even know if that's successful, because frankly, it's not fully constructed yet or operational.	<p>performance standards and success criteria were developed during the interagency process at the direction of the Coastal Commission using this successful mitigation project as a model. The determination to adopt such standards as part of the MLMP was strongly supported by Coastal Commission staff through the MLMP approval process. The success of the Project's mitigation is assured because Discharger must comply with these standards, which will be enforced by the Coastal Commission and the Regional Board. The MLMP's strict performance criteria are enforceable by the Regional Board and the Coastal Commission. The Regional Board's Executive Officer has the authority to impose remedial measures if the wetland mitigation does not meet performance criteria.</p> <p>To the extent Commenter is suggesting that the CDP will be operating for 30 years before the mitigation site is constructed, that is incorrect. The CDP has not yet been constructed, is not currently operating, and is not currently resulting in any intake or mortality of marine life. The MLMP requires the Discharger to submit a coastal development permit application for Phase I of the proposed wetlands within two years of issuance of the Project's coastal development permit. To the extent Phase II is necessary, the MLMP requires the Discharger to submit a complete coastal development permit within five years of the issuance of the Phase I permit. These requirements ensure that the proposed wetlands will be designed and implemented as the CDP is under construction and will be developed in the early years of CDP operation. Further, the mitigation required is sufficient to fully offset impingement and entrainment associated with stand-alone operations, even though it is unknown if/when the Project will operate in such a mode.</p>
2. Testimony of Conner Everts Representing Desal Response Group		
42.	Water conservation and reclamation are better strategies to address drought, and will force the state to deal with a response to how we use and waste water.	Comment does not prompt a specific response. To the extent Commenter makes arguments concerning broad planning goals or policies, such comments are generally beyond the scope of the Regional Board's review of the Minimization Plan. The CDP has, however, undergone extensive environmental review by several resource agencies in addition to the Regional Board, including the City of Carlsbad, the Coastal Commission, and the State Lands Commission. The City of Carlsbad in its EIR and review of the project specifically examined alternatives to the project involving greater

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		levels of conservation, reuse of sewage by reclamation and other water reclamation, and concluded that those alternatives were not feasible. The City's analysis and conclusions on this issue are incorporated by reference into this response.
43.	<p>(a) If you put a shovel in the ground today, which isn't going to happen, on the desal plant, it won't be a reaction to the immediate situation, regulatory, and hydrological conditions we face. But that will force us all across the state to deal, as we have in the past, with a response to how we use and waste water. My background includes being Chair of the California Urban Water Conservation Council and Drought Coordinator for the City of Pasadena, where we saved percent. Since then, the technologies have improved, and we've moved to the outdoor landscape. There's a lot more to do, recycling, especially regionally is still a big issue on the table here. But obviously, there's a lot more to do statewide as we continue to discharge treated waste water. I was on the State Water Resource Control Board Stakeholder Process. We've just established, finally, guidelines on recycled water. So there's a lot of opportunity there. But today we're not talking about those issues. And it is, again, very emotional for people to say they need water, and that they may be cut back.</p> <p>You know, we just went though a period where we had a lot of rain. We could have captured more if we had those programs in place and dealt with less pollution going to the ocean. So given all that, I support the staff report to go back, at least until April, and to take a deeper look at this.</p> <p>(b) My background includes working on this issue for the late '80s. My original boss, many years ago, went on to be a City Manager, got his Ph.D. in Florida. He ended up being</p>	<p>(a) Comment does not prompt a specific response.</p> <p>(b) Comment does not prompt a specific response.</p>

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	the General Manager of the Tampa Bay Water Authority, Gerry Maxwell. He was going to retire when that job was done. He didn't get to retire for a long, long time. As you've heard, they've had problems with it. You cannot assume that this will be -- not a project since it's the first on the Pacific Coast in colder water, and the largest in the western hemisphere, it might take a while to iron out. So the idea that this is immediate response is wrong.	
3. Testimony of Ed Kimura Representing Sierra Club San Diego Chapter		
44.	The Marine Life Mitigation Plan fails to comply with the conditions of the resolution.	<p>The Regional Board's May 13, 2009 action would supersede the resolution. The MLMP fully complies with the conditions within Resolution R9-2008-0039 (the April Resolution), as well as with Order No. R9-2006-0065 (2006 Permit) and CWC Section 13142.5(b).</p> <p>The MLMP includes a specific proposal for mitigation of impingement and entrainment as required by Section VI.C.2(e) of Order No. R9-2006-0065. Under the terms of the MLMP, the Discharger shall create or restore up to 55.4 acres of estuarine wetlands at up to two restoration sites. Consistent with the April Resolution, the Discharger submitted eleven specific mitigation sites determined during the interagency process and submitted a specific proposal for mitigation at these identified sites. The final restoration site(s) will be selected according to strict minimum standards and objectives specifically identified in Sections 3.1 and 3.2 of the MLMP, respectively, and final selection will be subject to review and approval by the Regional Board and Coastal Commission.</p> <p>The success of the selected restoration site(s) will be evaluated according to specifically enumerated performance standards and criteria.</p>
45.	I also believe that the design of the MLMP is flawed because it fails to apply an ecosystem-based approach.	See Oral Response No. 17 above regarding an ecosystem-based approach.
46.	Now, a marine ecosystem is a dynamic complex of plants, animals, microbes, and physical environmental features that interact with each other. I have seen no overt evidence that	<p>Comment noted as to the dynamic and complex nature of an ecosystem.</p> <p>The proposed mitigation wetlands will contain dynamic and complex</p>

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	these complex interactions have been addressed in the MLMP.	ecosystems themselves. The MLMP provides for the restoration or creation of up to 55.4 acres of wetlands habitat, containing ecosystem services with complex interactions. These complex interactions are ensured as the Discharger is required to demonstrate the performance of the restored or created wetlands by comparison with healthy reference wetlands, which also contain complex interactions.
47.	Let me cite two examples where this mitigation plan -- excuse me, fails to apply the ecosystems-based approach. One example is a vital role of the benthic community in the Marine ecosystem. No sediment quality data or benthic monitoring data for initial or within the Agua Hedionda Lagoon have been presented, or from local sites that are not impacted by the once-through cooling plant. These data are essential in selecting a restoration site.	<p>See Oral Response No. 17 regarding an ecosystem-based approach.</p> <p>The comment does not address how the EPS intakes are impacting, or the proposed CDP will impact, sediment quality or the benthic community in Agua Hedionda Lagoon. CWC Section 13142.5(b) requires the Discharger to minimize intake and mortality of all forms of marine life. The comment does not address how the CDP will result in the intake or mortality of the benthic community, or affect sediment quality, and the allegation that the CDP will cause such effects is speculative and without foundation.</p> <p>Any impacts of the CDP discharge on sediment quality and the benthic community should have been raised in 2006 when the CDP's NPDES permit was issued and the potential impacts of the discharge on the marine environment were considered. Comments regarding such issues are not relevant to this proceeding, and have been waived. Commenter has failed to exhaust its administrative remedies with respect to such points.</p> <p>With regard to the mitigation sites, sediment quality data and benthic monitoring data are addressed implicitly by the MLMP. Rigorous biological performance standards and monitoring provisions contained in the MLMP ensure that the mitigation wetlands must satisfy a number of biodiversity benchmarks. As the mitigation wetlands are to function according to these benchmarks, they necessarily will contain non-toxic sediment with contaminant concentrations that is capable of sustaining a sufficient richness of benthic macro-invertebrate and vegetative species. If the quality of the sediment were to fall below appropriate levels, the sediment would no longer support vegetation and animal communities to the degree required by the biological performance standards. Any such deterioration would be observed</p>

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		by the monitoring program and remediation would be implemented to ensure compliance with the terms of the MLMP.
48.	And another important factor is the connectivity that exists between and among the ecosystems provided by currents transporting larvae from one part of the ecosystem to another. Understanding this is a very complex connection is particularly important to select a restoration site that's productive and successfully offsets the entrainment losses caused by the desalinization project.	<p>The MLMP makes no assumption about genetic populations, and does not assume genetic sameness of larvae including invertebrates at Agua Hedionda Lagoon and the eleven specific sites identified in the MLMP. These concepts are offered by Commenter without reference to legal requirements and appear to be scientific principles or theories, without specific tie in to compensatory mitigation under legal requirements.</p> <p>Commenter appears to assume that the purpose of mitigation is to create or restore wetlands that will spawn larvae that somehow will find their way back to Agua Hedionda Lagoon. It is not likely that larvae of common lagoon species could be spawned at some location away from Agua Hedionda Lagoon and survive the journey back to Agua Hedionda Lagoon. The requirement being imposed is to compensate by returning a like amount that is lost due to entrainment, but not to also ensure that these larvae make their way back to Agua Hedionda Lagoon. Therefore, Regional Board disagrees that larvae dispersal information at a reference area is necessary, or even relevant to mitigation.</p> <p>Natural bays and estuaries in California function in the classical sense of serving as spawning and nursery areas for coastal fishes (Michael Horn. 1980. Diversity and Ecological roles of noncommercial fishes in California marine habitats. CalCOFI rep. Vol. XXI, 1980.). These systems support a unique fish assemblage composed of low trophic level species (Horn 1980; Allen 1982). Many of these species are truly estuarine dependent, living their entire life cycles within the estuary. Based on larval surveys, the most abundant bay-estuarine fish are gobies (Horn 1980). Gobies attach their eggs to the walls of the burrows in which they live. Their eggs are not pelagic and are not transported from one wetland to another via ocean currents. The larvae hatch, metamorphose and mature within the estuary. Tidal translocation of goby larvae to the near-shore environment has been postulated as one of the primary sources of mortality for this species (Brothers 1975). Those transported out of the estuary frequently do not</p>

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		<p>survive. Thus, connectivity between disparate wetland systems within the region with regards to eggs or larvae of the dominant estuarine fish taxa is not anticipated.</p> <p>Connectivity between a restored estuarine wetland and an existing wetland is important for successful colonization by estuarine dependent species. Such connectivity is assured through the requirement that the Discharger's mitigation site be located at an existing estuarine wetland.</p> <p>The MLMP's physical and biological performance standards will measure the success of the proposed wetlands in relation to other reference sites, "which shall be relatively undisturbed, natural tidal wetlands in the southern California Bight." In the event that the mitigation site's location does not allow for sufficient larval dispersion or population connectivity, the wetlands would not conform with these other reference sites. This would require the Discharger to conduct remediation in order to bring the wetlands in compliance with the terms of the MLMP.</p>
49.	<p>The MLMP proposes to select a restoration site located somewhere within the Southern California Bight. This is a coastal region covering over 450 kilometers from the Mexican border to Point Conception. It apparently assumes an essential requirement for the site, that the members of the larval pool from the Carlsbad site have been dispersed over time throughout this region.</p>	<p>See Oral Response No. 48 above.</p> <p>The MLMP establishes a rigorous process to ensure the mitigation wetlands are sited in the best possible feasible location in proximity to the Agua Hedionda Lagoon. Section 3.2 of the MLMP provides that, to the extent feasible, the Discharger must select "site(s) in proximity to the Carlsbad desalination facility." The revised Minimization Plan provides that "[s]ites located within the boundaries of the Regional Water Quality Control Board, San Diego Region, shall be considered priority sites. If the Discharger proposes one or more mitigation sites outside of these boundaries, it first shall demonstrate to the Board that the corresponding mitigation could not feasibly be implemented within the boundaries, such as when the criteria established in Section 3.0 of the MLMP [providing site criteria] are not satisfied." See Minimization Plan, Section 6.6 (see chart), March 9, 2009. The selection of the restoration site(s) will be reviewed and approved by an interagency team of scientists. The fact that the selected site(s) may not be located directly in Agua Hedionda Lagoon does not undermine the ecological</p>

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		value of the mitigation site(s).
50.	Now, this assumption is highly questionable, based on a very scientific important paper that just came out in January of this -- this year, of the Annual Review of Marine Science, authored by University of Miami scientists, Cowen and Sponaugle, entitled, "Larval Dispersion and Marine Population Connectivity." The paper provides a current overview -- an overview of the current scientific knowledge of this subject. The authors state that a full understanding of the population connectivity has important applications for management and conservation.	See Oral Response No. 48 above.
51.	One important piece of information in the paper is that it dispels the notion that local larval marine populations can be formed from all potential sources and mixed together into a single pool over hundreds to thousands of kilometers.	See Oral Response No. 48 above. Mitigation under CWC Section 13142.5(b) does not require specification of conditions with respect to larval pools, larval pool formation, and the distances over which larval pools may or may not be formed. No such conditions have been incorporated into the Tentative Order or the Minimization Plan. The comment does not offer any such conditions, or explain how any such conditions might be relevant to a legally compliant mitigation plan under CWC Section 13142.5(b).
52.	The authors note that there is now ample evidence that the dispersion distances can vary from just tens to hundreds of kilometers.	See Oral Response No. 48 above. The comment does not take issue with any specific dispersion distances assumed or used in the Minimization Plan or its underlying studies. The Empirical Transport Model includes an input variable for the dispersion distance of entrained larvae, which can be up to tens of kilometers depending on the speed of ocean currents. In this context, the transport of entrained Agua Hedionda Lagoon fish larvae is discussed thoroughly in the final EPS Impingement Mortality and Entrainment Characterization Study for each of the commonly entrained lagoon species (i.e., gobies, blennies, garibaldi).

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53.	So it's really clear to me that the MLMP does not apply to integrated ecosystems-based approach in assessing and mitigating the impacts of the desalinization project, and therefore it's fundamentally flawed.	See Oral Response No. 17 above.
4. Testimony of Jim Peugh Representing San Diego Audubon Society		
54.	Without a detailed mitigation plan you have absolutely no way of knowing whether the resulting mitigation project can or will satisfy these performance standards, and actually offset the project's significant environmental impacts.	<p>The Discharger is required to prepare a detailed Restoration Plan prior to construction of the planned wetlands. The MLMP provides for a multi-phase process that begins with an initial approval of the project and then proceeds to the development and consideration of a highly detailed Restoration Plan. This multi-phase process is modeled after SCE's successful San Dieguito Restoration Project. Before restoring the wetlands in Del Mar's San Dieguito Lagoon, SCE developed a highly-detailed, Final Restoration Plan that included the elements specified in SCE's coastal development permit. Within two years of receipt of its own coastal development permit, the Discharger will submit a similar type of document for review and approval by the Regional Board and Coastal Commission, as required by Condition A of the MLMP.</p> <p>The performance standards of the MLMP are stringent and rigorous, requiring that the restored wetlands support biological populations, including vascular plants and algae, fish, macrobenthic invertebrates, birds, and food chain support that are 95% similar to the same populations at up to four reference wetlands. The performance standards require the distribution of habitats in the restored wetlands and their relative elevation do not vary substantially. This approach was approved by the Coastal Commission. The Regional Board and the Coastal Commission are authorized to determine project success or failure, based on the MLMP's rigorous performance standards, and have the authority to order remediation in the event the rigorous performance criteria are not met.</p> <p>Commenter implies that the mitigation plans include some uncertainties. This is not unusual and is well accounted for in the MLMP. Nonetheless, wetlands restoration, including restoration as mitigation and restoration for the sake of restoration, is a high priority among resource managers and local, state, and regional governments. The key to addressing this uncertainty rests in</p>

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		<p>establishing rigorous performance standards that must be satisfied. By imposing such standards, the Coastal Commission has determined there is a high degree of scientific confidence that the required restoration will succeed.</p> <p>The MLMP's performance standards and success criteria were developed during the interagency process at the direction of the Coastal Commission using the successful SCE mitigation project for the San Onofre Nuclear Generating Station as a model. The success of the Project's mitigation is assured because Discharger must comply with these standards, which will be enforced by the Coastal Commission and the Regional Board.</p>
55.	You need the specifics. You need the time to analyze it. You need the resources to analyze it, which is a tough time right now with cutbacks.	The Regional Board has spent considerable time and resources reviewing and analyzing the Minimization Plan and the MLMP. Consistent with the Regional Board's directive, the Discharger engaged in a months-long interagency process to develop the mitigation proposal, the MLMP, now incorporated in the Minimization Plan as Part A of Chapter 6. A stakeholder meeting was held on May 1, 2008, which included, among others, staff and experts from the Coastal Commission, the Regional Board, State Lands Commission, California Department of Fish & Game, and the National Marine Fisheries Service. After this interagency coordination and receipt of substantial public comment, the MLMP was approved by the Coastal Commission on August 6, 2008. Following the Coastal Commission's action, on February 11, 2009 and April 8, 2009, the Regional Board considered the MLMP and the Minimization Plan. The Regional Board will again consider the Minimization Plan on May 13, 2009.
56.	Richard Ambrose, Professor Richard Ambrose of UCLA has done research and discovered a large percentage of the wetland mitigation projects in our region have not satisfied their performance requirements. Our region's wildlife continues to suffer from their underperformance. It would be nice if wetland restoration was as straightforward as building with Legos, but it's not.	The Regional Board has noted the comment, which is general in nature rather than specific to the CDP and thus does not require a specific response.
57.	To be really effective, a wetland project must soon become	The performance standards adopted by the Coastal Commission include a

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	<p>self-sufficient and self-sustaining. That takes a -- has a lot of things that -- a lot of things have to happen to make that -- that work out.</p>	<p>requirement that the biological communities of the restored site be 95% similar to up to four reference sites for at least 3 consecutive years. Only a self-sustaining site could meet this stringent standard.</p> <p>Dr. John Teal, scientist emeritus at the Woods Hole Oceanographic Institution, summarized the steps necessary for successful wetlands Restoration Plan. (Wetland Restoration Success, Appendix G Attachment G-2, Public Service Electric and Gas Company Renewal Application, Salem Generation Station, Permit No. NJ0005622, March 4, 1999.) Restoration of degraded estuarine marshes has the greatest probability of success when the right lands are selected, the right design is implemented, and the right follow-up is pursued. The selected lands should be former salt marshes with elevations, groundwater and tide relationships appropriate for restoration. Plant propagules and animals should be present in neighboring marshes in order to populate the restored marsh. Sediments with the appropriate organic content should be confirmed. The restoration design should be based on ecological engineering which is an integrated approach to environmental management that assures that restoration takes the most natural path, the path most likely to be stable into the future. The restoration should incorporate adaptive management that provides a framework for identifying and implementing actions necessary to keep the restoration on track.</p> <p>All of these steps will be taken. The Coastal Commission has determined that restoration or creation must take place at one of 11 existing wetlands, thereby providing a high degree of certainty that the area was a former marsh, that the appropriate soils are present, that tidal and groundwater relationships are favorable, and that plant and animal propagules are present. Adaptive management is an important aspect of any restoration or creation and will be incorporated into the Restoration Plan.</p>
58.	<p>The natural wetlands have had hundreds of thousands of years for these things to work out. But when you're restoring one, it doesn't -- you have to make sure the hydrology is totally appropriate, and that in a time where our climate is changing and our sea level is rising. So there's a lot of</p>	<p>The MLMP builds on well-established, scientific methods for developing viable wetlands mitigation. The MLMP requires a wide range of performance standards that must be met to ensure the effectiveness and longevity of the mitigation area.</p>

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	uncertainties to shoot for.	The potential for climate change and sea level rise will be addressed in the Restoration Plan. Coastal Commission scientists are actively involved in analyzing potential sea level rise scenarios.
59.	The inputs and outputs of sediments must be totally appropriate in terms of amplitude, particle size, and seasonal variation.	<p>While the sediment of the restored wetland must be appropriate to support the plants and animals that inhabit these habitats, there is no scientific method for determining a priori the degree of detail that the Commenter describes. Many scientists examine sediment characteristics in support of wetland restoration projects. Hydrologists model sediment movement through a wetland system and geologists examine grain size and possible contaminants.</p> <p>Similar analyses will be conducted in support of the site selected by the Discharger. However, the variation of amplitude and particle size can be modeled only in relation to predicted tides and selected flood events and not predicted to the degree stated. To a large degree, sediment suitability must be measured indirectly through the development of the marsh and algal canopies and benthic invertebrate populations. The MLMP includes performance standards for these components of the restored marsh.</p>
60.	Nutrient flows into, within, and out of the project must be totally appropriate or it won't work."	Implicit in the Restoration Planning approach is the obligation to produce a healthy functioning wetlands from a nutrient and sediment perspective. Proper nutrient levels can be inferred through plant canopy development and animal populations. The performance standards are a proxy for a healthy, functioning wetlands, which necessarily require appropriate nutrient flows.
61.	The project must be so healthy that it will eventually inherently resist invasion of species. There are a lot of other effects.	<p>The assertion that the restored site must "inherently resist" invasion of such species puts forth a standard that is not feasible, and it ignores the adaptive management needed to deal with such species. Natural systems have not been shown to have sufficient inherent resistance to prevent the spread of such species; holding the Discharger to such a quixotic standard is therefore unrealistic.</p> <p>The performance standards ensure the mitigation area will be a self-sustaining system, which will facilitate its ability to resist invasive species.</p>

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		<p>However, there are virtually no wetlands in southern California that are not subject to invasive species to some extent. This includes successful, healthy wetlands that may be used as reference sites, such as Tijuana Estuary. It is acknowledged by resource managers that active control of exotic species is required.</p> <p>The MLMP states that exotics shall not impair important functions of the restored site. To the extent that exotic species occur at the restoration site, the appropriate control method will be determined by the Regional Board and the Coastal Commission.</p>
62.	It has -- it has -- as Ed mentioned, it has to have access to larvae and seeds from other sites, so if something happens on this site, that it can be recovered over time.	<p>The Regional Board agrees that restored site must have access to larvae and seeds. The restoration must occur at one of 11 existing southern California coastal wetlands. The final site will be a part of a larger, functioning wetland and will be connected hydraulically to both the existing wetland and the ocean, by which reproductive propagules, including ichthyoplankton and plant seed, will be dispersed.</p> <p>The proposed wetland is being built to compensate for larvae entrained and fish impinged at Agua Hedionda Lagoon. Larvae production is measured indirectly, consistent with the ETM model, through the establishment of the plants and animals required under the MLMP.</p>
63.	As people love to say, the devil is in the details. It will take a lot of review and analysis of specifics to assess whether this -- whether their specified project has a chance to satisfy its goals. But you won't even see the project until after you make these improvements. You have no way, and your staff has no way of making these assessments to figure out whether the mitigation is feasible.	A Restoration Plan will be prepared after approval of the MLMP to ensure that the mitigation project meets the performance standards.

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PUBLIC TESTIMONY RECEIVED APRIL 8, 2009		
1. Testimony of Marco Gonzalez Representing San Diego Coastkeeper and Surfrider		
64.	The Marine Life Mitigation Plan Feasibility Analysis regarding the five sites that you asked them to come back with has not been done.	<p>On February 11, 2009, the Regional Board identified a list of outstanding items concerning the March 6, 2008 Minimization Plan, including:</p> <p>(1) Reducing the number of [potential mitigation] sites to five, in consultation with the Coastal Commission, with the existing proviso that other sites within the Regional Board boundaries could be added;</p> <p>(2) Poseidon to provide a consolidated set of all requirements imposed to date by the various agencies.</p> <p>As show in this item 2, the Regional Board required only that the Discharger reduce the number of potential mitigation sites to five; it did not order the Discharger to conduct a “feasibility analysis” regarding the five sites, as Commenter asserts.</p> <p>In Chapter 6 of the revised March 27, 2009 Minimization Plan, the Discharger, in consultation with the Regional Board, identified 11 sites, considering the five sites within the boundaries of the Regional Board as priority sites. The Discharger complied with the Regional Board’s request.</p>
65.	We think that there are specific performance criteria that need to be discussed for these sites that might make up the mitigation plan eventually. We think without them that we can’t be assured that the wetlands restoration or creation is actually feasible.	The MLMP provides strict performance criteria, which are enforceable by the Regional Board and the Coastal Commission.
66.	We think that additional data collection assessment is probably necessary and supported by the record.	Commenter does not identify which data are lacking. Sufficient data in the record has been submitted by the Discharger and Commenters so as to allow the Regional Board to appropriately assess the CDP’s compliance with CWC Section 13142.5(b).

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67.	We think that the Water Code Section 13142.5 Site Alternative Feasibility Analysis for a stand-alone project has not been done and therefore you cannot approve this as a stand-alone project.	The Regional Board is not considering operation of the CDP in stand alone operation. Submission of a new report of waste discharge is required when the EPS is permanently shut down for production of power.
68.	While we know that it is specifically put forth by staff as a co-located project, we also know that Poseidon wants it essentially to be approved as a stand-alone project. We'd like to just draw some attention to, not to be pejorative, but the idiocy of approving the project as a co-located project without looking at the stand-alone implications of it to taxpayers and the ecology.	See Oral Response No. 67 above.
69.	We implore you to believe your staff. There is no nefarious plan afoot for them to undermine science and good policy with respect to water supply — they are just doing their job. Believe Dr. Raimondi. He was referred to by Poseidon as a consultant of the Board. While they referred to their own paid Dr. Jenkins as an independent reviewer. This is just isn't true. Dr. Raimondi is an independent third party reviewer just like he was at the Coastal Commission. He was paid for by Poseidon, not by the state and you should listen to his conclusions.	Comment noted that the commenter is urging the Regional Board to adopt Dr. Raimondi's assessment of impingement, reflected in his April 1, 2009 statement. Regional Board staff requested that Dr. Raimondi conduct this assessment.
70.	Just acknowledge how dysfunctional this process was. This is a precedent setting project which hopefully does not result in a precedent setting process because this is just horrible in terms of the Water Code's desire that the public have an opportunity to be involved in a meaningful way. And I think we see that based on the fact that we are having such in-depth scientific discussion and at what should be one of the final hearings.	<p>The characterization of the process as "dysfunctional" and "horrible" is unfounded. The proceedings have been deliberative, with hours of public hearing, in addition to ample public comment periods. The Regional Board granted significant procedural safeguards to the public, including the environmental groups and other interested persons, by providing ample opportunity to submit written comments and present oral testimony at the hearings.</p> <p>In-depth scientific discussion is a sign of a vigorous and open public process. The Regional Board appreciates Commenter's participation, and has taken all input received into account.</p>

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71.	One of the things to remember is that you only get to compensatory mitigation after you have minimized marine life mortality. We keep putting this out there and we're glad that finally the staff and Poseidon are talking about meeting the correct standard. Before they said it's all about what is the impacts of marine life mortality. That's very different than minimizing marine life mortality up front. It is important to know that the viability of this MLMP is really a secondary question to whether all of the site, design and technology issues have been addressed with respect to minimizing marine life mortality.	<p>To the extent the Commenter suggests that CWC Section 13142.5(b) requires minimizing intake and mortality prior to mitigation, he is incorrect. CWC Section 13142.5(b) requires the use of the best available mitigation measures feasible in order to minimize the intake and mortality of all forms of marine life. The best available mitigation feasible is part of a comprehensive effort, together with the best available site, design, and technology feasible, to minimize intake and mortality. The statute, therefore, does not require minimization first followed by mitigation.</p> <p>To the extent that Commenter is suggesting Discharger is applying "after the fact" mitigation, see Oral Response No. 8 above.</p>
72.	Back in February, Poseidon was told ... limit your sites to five. Give us more information such that we can come back and assess what are the likely five sites instead of just eleven. What did you get in response to that? We'll try our best to do the five that are in San Diego. I don't think that's what was contemplated. I don't think that what was directed. It certainly doesn't make much sense for them to go back and simply insert a sentence that says we'll give priority to the San Diego sites. The idea was we needed to ratchet down from the 11 sites proposed in the MLMP and focus in on five that would provide the most likely opportunities to meet the mitigation standards that we need in order to address the impacts that this project will cause. I'm frankly blown away that they didn't give us more information about the highest five likely candidate sites.	The Minimization Plan describes the 11 pre-approved sites identified in the MLMP in detail and provides that the five sites within the boundaries of the Regional Board are priority sites. This amendment to the Minimization Plan complies with the directive set at the February 11, 2009 hearing. See Regional Board Staff Report: Review of Poseidon's Flow Entrainment and Impingement Minimization Plan Dated March 9, 2009, p. 5. March 27, 2009.
73.	a. One of the things that has been important in terms of our perspective on the feasibility of the marine life mitigation plan is that the data all say that you can't know, first of all, that what was creation or restoration will work. We could have tons of evidence in the record to show that every study that has even done to go and look at overall how successful litigations events have been have shown that we don't	<p>a. See Oral Response No. 54 for a discussion of the Restoration Plan that will be prepared after approval of the MLMP to ensure that the mitigation project meets the performance standards. The MLMP's incorporates strict, measurable performance standards that are enforceable by the Regional Board and the Coastal Commission.</p> <p>b. Commenter provides no factual basis upon which to support the allegation</p>

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	<p>achieve the structure and function that we think we're going to or that we actually need to mitigate the loss impacts or the impacts that were impacting. Specifically salt marsh in San Diego, we have evidence in the records that says it's very difficult to achieve the perfect wetland that frankly is being paraded in front of you. All of these promises that the Marine Life Mitigation Plan will result in this somehow pristine wetland and upon completion. It's frankly now borne out by any of the signs so frankly Mr. Nordby worked on some of those projects in the past.</p> <p>b. We know that it is very, very difficult and even the San Dieguito restoration project is very far from having been proven as a successful mitigation site.</p> <p>c. We take the position that without site specific criteria with respect to what you are going to achieve at this mitigation sites it's impossible for you to say that, that Marine Life Marine Plan Mitigation Plan actually accomplishes the goals and the requirements of club.</p> <p>d. One of the things that's important for Poseidon to realize and that you should emphasize in your consideration is that by having the true up that Mr. Garrett and Mr. Singarella talked about where they would go back and essentially ensure that a failing wetland would not mark the end of their mitigation obligation but rather that they would have to come back and do whatever extra it might take for them to achieve the prescribed performance that's being laid out today. Number of drew up discussion. Well, first of all, that's a blank check and they need to know that and that their investors need to know that. Given that there isn't any evidence in the record to suggest that you can successfully create a wetland the way that they are claiming they can, they have to know that the 20 to 30 million dollars they may</p>	<p>that the San Dieguito restoration project is very far from having been proven as a successful mitigation site. The administrative record indicates otherwise. Public commentators remarking on the San Dieguito Wetland Restoration Project have called the plan "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). SCE and local media have both documented that the San Dieguito Wetland Restoration Project has completed several key milestones in the overall completion of the 150-acre restoration project. See Southern California Edison, San Dieguito 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).</p> <p>c. See Response No. 54 for a discussion of the Restoration Plan that will be prepared after approval of the MLMP to ensure that the mitigation project meets the performance standards. The MLMP's incorporates strict, measurable performance standards that are enforceable by the Regional Board and the Coastal Commission.</p> <p>d. This comment largely characterizes other testimony in the record. That other testimony speaks for itself. The Discharger is required to prove up the impingement obligation. Mr. Nordby has opined that it may require about 11 acres of coastal wetlands of the appropriate kind to produce 1,715 kg/yr of fish biomass. Thus, the Regional Board has reasonable confidence that the impingement compensation will be provided under the proposed two-phase program, likely during Phase I (37 acres).</p> <p>To the extent the comment constitutes argument, unsupported by introduced evidence, it does not warrant response.</p>

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	<p>be spending up front might be a very small piece of the pie. And most importantly, one of the things that really bother me about Chris Garrett's final comment, he got up here and after Mr. Singarella spent a lot of time say, "You don't have to worry about any of these because at the end of the day if we don't produce our 1715 kg magic number of impingement loss, we're going to have to do it in similar capacity that your executive officer might tell us and then Mr. Jericho up here said, "Oh, by the way, don't even think about hassling this to do more than that. So on the one hand, he say, we are going to throw up our actual ability to meet your predicted amount of impingement." But don't try to tie what we have to ultimately do to what ultimately get impinged. You should be offended by that. The hubris of a sign to get appearance say that we promise, we will do what you might think we're going to impact based on all these speculative models and all of these assumptions that experts can't agree on. Set us a ceiling as to the most amount of impingement mitigation we can ever have to do. Why should they be entitled to that, frankly? The fact is it should be the floor. If Poseidon is going to go back and throw up that cell after the impacts have already happen, frankly they should have to chew up to the impingement that's attributable to their project whenever that can comes at the very least. It's just frankly offensive that they will get up and say that you can do this after the fact calculation as to the maximum amount of mitigation they would have to do but then they set this ceiling up what are predictive possibility as today. Very frustrating from the public perspective.</p>	
74.	<p>(a) With respect to impingement issues, there is an underlying problem that we have with the arguments being put forward by the experts that are hired by Poseidon to do Poseidon's bidding. And that has to do with the very technical issue of what is APF? An area of production</p>	<p>(a) The ETM is a species-specific model that is based on the principle that the entrainment impact is limited to the "main species" that are "most affected by entrainment." Recommended Revised Condition Compliance Findings (approved December 10, 2008), p. 12 of 19. The Regional Board concurs with the Scientific Advisory Panel's (SAP) conclusion that "the APF is used to</p>

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	<p>foregone. And what is it really intended to do?</p> <p>(b) They stood up here before you and they said, APF is intended to account for those species that are lost for entrainment and it has nothing to do with the species that are lost for impingement. Scientifically, that's not true.</p> <p>(c) You saw a couple of buckets that Mr. Singarella put up. And in the left, he said, these are the entrainment bucket fish and then on the other side, these are fish that are going to be impinged and we're not counting those because they are not related to the entrainment calculation of APF.</p> <p>(d) Here is the problem, APF is derived to try to account for not the lost fish from entrainment standing alone, but for the function of those lost fish in the ecosystem at the various stages of their life that they might have otherwise lived if they hadn't been entrained.</p> <p>(e) So imagine this, you take a slew of gobies and blennies and Garibaldi and you killed them in their infant stage. You're precluding them from reaching a life stage where they would become food for a top smelts or food for some other fish that might also be an impinged fish. So the methodology that goes into calculating APF provides a little bit of a conservative layer because what you are trying to do is recreate the ecosystem impact that you lose as a result of killing a bunch of larval stage fish.</p> <p>(f) Of whatever your indicator fishes, remember the blennies, the Garibaldi and the gobies are the high level indicators. But that's not everything that are entrained.</p> <p>(g) So Dr. Raimondi when he comes in, he says, hey it's a double counting. He is not saying that there aren't impinged</p>	<p>determine impacts to only those species affected by entrainment and the mitigation resulting from the APF is meant to account only for those effects." Recommended Revised Condition Compliance Findings (approved December 10, 2008), p. 12 of 19.</p> <p>The SAP is a team of seven independent scientists (including Dr. Raimondi) that provides guidance and oversight to the Coastal Commission on ecological issues associated with the San Dieguito Restoration Project and which, under the terms of the MLMP, will review Discharger's Restoration Plan.</p> <p>(b) The APF does not assume compensatory mortality. Therefore, for the species modeled, it addresses all life stages, including those subject to impingement. The Discharger presented the APF in this manner, explaining to what extent species modeled in the ETM could not be counted toward the impingement obligation.</p> <p>(c) The right-hand buckets illustrated the species of fish that would be available to count toward the impingement obligation. They were not "fish that are going to be impinged." In addition, fish on the right-hand side are available to be counted towards the impingement obligation, contrary to the comment's suggestion.</p> <p>(d) To the extent that the comment describes ecosystem functions that would not be subject to intake and mortality by the proposed CDP, the comment is describing possible effects that are not part of the minimization obligation under CWC Section 13142.5(b). These possible effects are speculative and asserted only generically and generally by the comment, without scientific support or evidence.</p> <p>In addition, the comment does not support the proposition that the APF is derived to account for the function of those lost fish in the ecosystem. As described below, the available scientific evidence is to the contrary.</p> <p>The ETM is a species-specific model that is based on the principle that the</p>

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	<p>fishes that are going to also be created by this wetland as proposed. What he is saying is the APF calculations specific to entrainment is an ecosystem based function. This entire mitigation function as applied to entrainment is intended to repair the ecosystem at the level that you can speculatively, scientifically, based on this model come up with today.</p> <p>(h) But the way that they have approached it they have come in and say look, you put entrainment in little box, you put impingement in a little box and you look at them as essentially two different pieces of the restored wetland. The fact of the matter is it isn't the facts. It isn't the way that Raimondi assessed it, it isn't the way that staff assessed it, and frankly its disingenuous science.</p>	<p>entrainment impact is to the main species subject to entrainment. See Response Nos. 260(a), 260(b) and 314(a). To the extent that Commenter suggests that the APF represents some broader impact that extends beyond the most commonly entrained species and/or to other organisms that exist within the ecosystem, Commenter is mistaken.</p> <p>In July 2008, the SAP—of which Dr. Raimondi is one of seven members—directly addressed Commenter’s argument that the ETM is designed to mitigate for broader, ecosystem-based impacts.</p> <p>In response to a question regarding whether the ETM assumes that entrainment “will render all affected acreage (i.e., the APF) non-functional, even though that acreage would only be partially affected and would continue to allow numerous other species to function,” the SAP “reiterated that these entrainment studies do not assume the complete loss of ecosystem function within an area of APF; instead they identify only the area that would be needed to replace the numbers and types of species identified in the study as subject to entrainment.” Recommended Revised Condition Compliance Findings (approved December 10, 2008), p. 12 of 19. The SAP explained further that “[t]he APF is used to determine impacts to only those species most affected by entrainment, and the mitigation resulting from the APF is meant to account only for those effects.” Id.</p> <p>An ecosystem approach suggested by the comment may be more appropriate in a situation where the project destroys an ecosystem. In the context of a Clean Water Act Section 404 permit with Section 401 certification, mitigation for fill that destroys an ecosystem may require mitigation that offsets the loss of complexity and diversity in the ecosystem. Here, specific components of the lagoon environment may be altered due to impingement and entrainment – leaving intact other important portions of the marine ecosystem. As a result, an appropriate mitigation project would seek to offset the specific alterations from the particularized effects of entrainment and impingement.</p> <p>(e) Commenter provides no scientific evidence in support of the hypothetical,</p>

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		<p>including the suggestion that topsmelt feed on goby, blenny and/or garibaldi larvae. Evidence in the administrative record indicates that topsmelt feed almost exclusively on planktonic crustaceans and do not feed on goby, blenny, and/or garibaldi larvae. See San Diego Gas & Electric, Encina Power Plant Cooling Water Intake System Demonstration (1980), at pp. 6-52, 6-53.</p> <p>The suggestion that fish larvae may be analogized to, or referred to as, infants is not credible. Fish produce millions of larvae, very few of which survive to the juvenile or adult stage.</p> <p>Commenter provides no evidence in support of the proposition that the ETM is designed to recreate ecosystem impact that “you lose as a result of killing a bunch of larval stage fish.” The SAP’s findings contradict this assertion. See Response No. 260(d).</p> <p>(f) Commenter is correct in concluding that the EPS intake entrains fish larvae other than blennies, garibaldi and gobies. The 2004/2005 entrainment study reveals that these three (3) species (i.e., gobies, blennies, and garibaldi) accounted for approximately 95% of the total number of larvae entrained, while five (5) ocean species accounted for more than 4% of the total entrainment (i.e., white croaker, northern anchovy, California halibut, queenfish, spotfin croaker). The larvae of the other fish species that live in and around Agua Hedionda Lagoon made up less than 1% of the larvae entrained at the EPS intake during the sampling period. See Impingement Mortality and Entrainment Characterization Study, Effects on the Biological Resources of Agua Hedionda Lagoon and the Nearshore Environment at Table S-1 (Tenera Env’t. 2008).</p> <p>The entrainment mitigation requirements set forth in the Minimization Plan are designed to compensate for the entrainment of “the main species”, i.e., those that are “most affected by entrainment.” Given that these eight taxa account for more than 99% of the entrained larvae, they are the “main species” for purposes of entrainment mitigation. They are not “indicator” fish, as the comment asserts, without citation.</p>

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		<p>(g) In his statement of April 1, 2009, Dr. Raimondi never said “the APF calculations specific to entrainment is an ecosystem based function,” nor did Dr. Raimondi even discuss ecosystem-based effects. Commenter’s assertion to the contrary mischaracterizes Dr. Raimondi’s comments.</p> <p>In response to Commenter’s unsubstantiated claim that the entrainment mitigation “is intended to repair the ecosystem,” note that the APF does not account for ecosystem-based effects that extend beyond the specific effect on the modeled species.</p> <p>(h) The rich and diverse benefits of coastal wetlands are well established. The fact that entrainment and impingement constitute particularized effects that can leave an ecosystem largely intact is well established. Tracking these particularized effects into a mitigation wetlands, and ensuring that the benefits there are not counted twice towards different effects is not disingenuous science. Nor is it placing entrainment and impingement in little boxes. The recommended approach is based on sophisticated analysis of complex systems. The comment’s characterization is incorrect.</p>
75.	<p>(a) The other thing that quite frankly bothered me about the impingement discussion is you heard this repeated “109 acres, oh my God somebody is recommending that they do an extra 50 acres.”</p> <p>(b) From what I heard out of staff they put three options on the table.</p> <p>(c) The one is, of course, the Poseidon preferred option - lets do nothing in addition. Its frankly scientifically unjustifiable for them to double-count the entrainment and impingement impact. But lets put that down on the table because the staff is being honest, that’s what Poseidon is going to argue, an option.</p> <p>(d) The next they say is lets do what Dr. Raimondi says is</p>	<p>(a) No one other than the commenter made the statement in quotes, and no one made it on a repeated basis. For an accurate record of the April 8, 2009 hearing, please see the official transcript.</p> <p>(b) Staff’s presentation of alternative approaches at the April 8, 2009 hearing speaks for itself.</p> <p>(c) None of the options discussed at the April 8, 2009 hearing are do-nothing alternatives. The double-counting allegation is covered elsewhere.</p> <p>(d) For reasons stated elsewhere, the Tentative Order adopts an empirical approach to impingement mitigation, relying on field measurement rather than inferential statistics. The Coastal Commission decision on entrainment is not a precedent for impingement analysis. The Coastal Commission did not declare it to be, and the Regional Board has plenary jurisdiction over intake and mortality under CWC Section 13142.5. See, also, PRC 30412</p>

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	<p>your back stop position. Lets do what is rational based on the precedent set at Coastal Commission, lets apply an 80% confidence interval to the assessment of impingement impacts and let's come up with somewhere between 18 and 21 additional acres to be included in the MLMP. That's what the Commission did based on Raimondi, that's the so called precedent if there is one based on the Coastal Commission action.</p> <p>(e) Science precedent says you use a 95% interval and that's what the 95% confidence limit and that's what actually gets you up into the much higher acreages of 21 to 54 and, of course, Poseidon they want to come out and do all the calculations about how bad its gonna be when we use a 109 level, but frankly there's no one who believes you're going to go above and beyond the Coastal Commission 80% confidence limit.</p> <p>(f) Again, they are just trying to spin this in a way to make their position more sympathetic. I guess that's what the lawyers get paid to do. But we need some honesty in the process here.</p>	<p>("The commission shall not, except as provided in subdivision (c), modify, adopt conditions, or take any action in conflict with any determination by the State Water Resources Control Board or any California regional water quality control board in matters relating to water quality or the administration of water rights.").</p> <p>(e) The comment points to no "precedent" in which impingement mitigation was based on 95% confidence limits, and offers no evidence or underlying principle to support its assertion that this is what science requires.</p> <p>(f) The comment does not provide any specific instance of an absence of honesty, nor any evidence that the integrity of the proceedings has been compromised.</p>
76.	<p>(a) The statistical outliers that were the subject of so much conversation earlier, it's incredibly frustrating for us to hear the experts for Poseidon get up and explain things away because frankly, Dr. Raimondi is not here.</p> <p>(b) We don't have the benefit of today's explanations and a comment period to respond to them, we get to respond on the fly as attorneys, not as experts.</p> <p>(c) But let me just make this point with respect the outliers that Dr. Jenkins essentially discounted as relevant to the ultimate consideration of impingement impacts.</p>	<p>(a) Regional Board staff invited Dr. Raimondi to participate in the April 8, 2009 hearing, but he was unable do so. His April 1, 2009 statement was posted on the Regional Board's web site, and was available for review by commenter and its experts. The Minimization Plan proceedings have been ongoing since the Discharger first submitted its draft Minimization Plan on February 13, 2007. The commenter has had ample time to retain its own expert and provide expert comment on the impingement data, which were reported in the March 2008 and March 2009 Minimization Plans, and also are contained in the February 2008 Section 316(b) study, entitled, "Impingement Mortality and Entrainment Characterization Study, Effects on the Biological Resources of Agua Hedionda Lagoon and the Nearshore Environment at 3-</p>

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	<p>Let's say I were to come to you and I were to say we've got a statistical anomaly that amounts to 10% of the total impact. And I would say to you, and say similarly you're going to have to mitigate. You remember one of the graphs as put up by Dr. Jenkins. On the X axis he had a calculation of flow and on the Y axis he had a calculation of the impingement. And you have those two outliers [sic] that were very high above, and you have a bunch of dots down below that were kind of the more often impinged numbers. I would ask you to look at that in these terms analogous to let's say car accident. Lets see along the bottom you had the number of car accidents and along the Y axis, you have the bodily harm. And all the little ones that are down on the bottom, those are fender benders. They don't have a whole lot of bodily harm. But those outliers [sic] are a dead kid or a dead parent or a significant harm.</p> <p>(d) The problem with their analysis is it says in those circumstances where you have significant harm you get to ignore it. It doesn't mean that it didn't happen, it doesn't mean that it is all that much less likely to happen, but it still happened.</p> <p>(e) And so they try to apply this statistical analyses to a circumstance where as staff had pointed out and Mr. Thompson disagreed, it's purely inappropriate because we know that at the end of the day there were a certain amount of species that were impinged and the Water Code says that they have to account for that.</p> <p>(f) So you don't -- where you have significant harm that occurs in an outerlying [sic] event, if you can't explain that away, you have to account for it.</p>	<p>28 (Tenera Env't. 2008)."</p> <p>(b) The April 8, 2009 hearing was properly noticed and gave commenter clear notice as to its subject matter. It has been clear since the Discharger first submitted a draft Minimization Plan on February 13, 2007 that the subject matter of these proceedings is technical and scientific in nature. Numerous experts have testified at each of the two hearings preceding the April 8, 2009 hearing. Commenter had every opportunity to retain an expert and have that expert present at the April 8, 2009 hearing. The topics discussed at the April 8, 2009 hearing were topics about which commenter and the public in general had prior notice, and do not warrant extension of the comment period.</p> <p>(c) The suggestion that the Regional Board is making a decision that is tantamount to ignoring dead children and parents is not appropriate. The impingement obligation specified in the Tentative Order accounts for the impingement observed during the outlier events in a manner that almost certainly overestimates their importance. So, the very premise of the comment's analogy is missing. The reality is that the outlier events appear to be rare events not principally related to flow at the intakes. The Regional Board is charged with ascertaining the intake and mortality that fairly may be ascribed to a future facility. It has historical information on the basis of which it needs to make reasonable judgments about the future conditions that will prevail at a new facility. That new facility does not yet exist and has not caused any harm to date. The Tentative Order requires the Discharger to compensate fully for all intake and mortality that may be anticipated from the future operations, and makes numerous conservative assumptions, ensuring that it is protective.</p> <p>(d) Outliers are included for purposes of Discharger's mitigation obligation, which is based on an impingement estimate of 4.7 kg/day—a value that assumes that there is a 100% probability that the outliers will occur every year.</p> <p>(e) The comment misapprehends the Tentative Order and the Minimization Plan. The Discharger has acquiesced in the Regional Board's directive to</p>

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	<p>(g) And then we come to the issue of can you explain it away. Today was the first time that I saw Dr. Mayer draw a circle around Canon Lake, the detention basin and say that that's the reason why you have these outerliers [sic]. Frankly, that wasn't in the record.</p> <p>(h) Canon Lake was not the source of overflows into the EPS.</p> <p>(i) And Dr. Jenkins when he did his analysis, he was looking at the Agua Hedionda creek flows, that's on the other side of the freaking lagoon.</p> <p>(j) It makes no sense in any context of this record to say that we know why those statistical outliers occurred. But we do know that they occurred.</p> <p>(k) And we do know that the EPS killed a number of fish.</p>	<p>mitigate for all impingement observed, including on outlier days. The value of 4.7 kg/day, which drives the impingement obligation, makes no adjustment to the outlier events, and actually assumes that impingement on those days is representative of impingement on each of 14 days every year. The ongoing dialogue about outliers is relevant to an appreciation of the conservative and protective nature of the mitigation approach, and underscores the importance of the impingement monitoring required under the Tentative Order.</p> <p>(f) Outliers are included for purposes of Discharger's mitigation obligation, which is based on an impingement estimate of 4.7 kg/day—a value that assumes that there is a 100% probability that the the outliers will occur every year and with the same frequency.</p> <p>(g) The testimony at a public hearing is part of the record, contrary to the comment's implication. Dr. Mayer and the Discharger previously had identified the freshwater fish issue. See March 27, 2009 Minimization Plan, Attachment 5. Dr. Mayer's testimony at the April 8, 2009 hearing was an elaboration on a topic already raised in the record including in the March 27 Staff Report and the April 8 Supplemental Staff Report for this hearing.</p> <p>(h) Because it is not clear what the comment means by "overflows into the EPS," this comment is vague and ambiguous. The comment does not define this vague term, and does not offer any alternative explanation or support such an alternative explanation with any data or information. This comment is conclusory and constitutes unsupported argument.</p> <p>(i) Agua Hedionda Creek is upstream of and tributary to Agua Hedionda Lagoon, and a major source of runoff to Agua Hedionda Lagoon during extreme rainfall events. Although Agua Hedionda Lagoon is primarily a marine lagoon, it can be influenced by freshwater inflows, especially from December through April. See Impingement Mortality and Entrainment Characterization Study, Effects on the Biological Resources of Agua Hedionda Lagoon and the Nearshore Environment (Tenera Env't. 2008), at 2-28. The creek's location and relationship to Agua Hedionda Lagoon render it relevant. The comment that the creek is "on the other side of the freaking lagoon" provides no rational basis to dismiss or discount the analysis by Dr.</p>

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		<p>Jenkins.</p> <p>(j) The commenter is not persuaded that there is evidence, supported by credible and substantial expert evidence, as to why the “statistical outliers occurred.” The Regional Board believes that the record before it reflects a reasonable basis to help inform the nature of the outlier events, and to place them in a proper context. Including these events in the 4.7 kg/day impingement obligation is conservative and protective; and therefore the impingement monitoring in the Tentative Order is very important for purposes of continuing to assess this issue as part of Minimization Plan implementation.</p> <p>(k) Vague and ambiguous as to time, quantities, etc. Impingement can result in mortality of fish. Large numbers of freshwater fish may have died before reaching the intake. Therefore, EPS may not have caused all of the mortality.</p>
77.	The request that we have is that you apply at the very minimum the 80% confidence level that you require somewhere between 18 and 45 additional acres. We think that if they commit to 100% intertidal mudflats for the impingement impacts we could use an 80% number and require 18 acres of additional mitigation.	The Regional Board has incorporated a Biological Performance Standard of no less than 1,715.5 kg of available fish biomass per year. This standard is sufficient to ensure adequate mitigation.
78.	There's some questions that you should be asking yourself with respect to whether they have complied with the site analysis requirements of the Water Code. You need to be absolutely certain what you are approving today. Are you approving the co-located facility or a stand-alone facility. Poseidon's investors are taking a risk. I likened it in my comment letter to the risks one might take building a house in the middle of a planned highway. We the taxpayers unfortunately might be saddled with this plant at some point. Much like they were in Tampa, if Poseidon doesn't perform	<p>The site analysis in the Minimization Plan satisfies CWC Section 13142.5(b). The comment provides no specific reason why it does not.</p> <p>The present approval is for operations in co-located mode. This is consistent with the description of the Discharger's proposed CDP operation in its Report of Waste Discharge for Order No. R9-2006-0065. As reflected in Tentative Order No. R92009-0038, additional evaluation of CDP's operations for compliance with CWC Section 13142.5(b) would be necessary if EPS ceases power generation operations and the Discharger proposes, through a new Report of Waste Discharge, to operate EPS's seawater intake and outfall</p>

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	<p>after a period of time the City of Carlsbad takes it back. More likely the county water authority takes it by eminent domain or perhaps purchases it from Poseidon at some point in the future. But the point is the value of that project as a stand alone facility and the ability to meet the stand alone analysis will affect the value and will affect what taxpayers are ultimately saddled with. So today, where you ought to be clear is that under Porter-Cologne we are not doing stand alone analysis. We don't have the ability to do the stand alone analysis based on the record that's before us. And if we were, we would have to focus on Poseidon's evidence that alternative intakes are not feasible here and therefore we can never meet the stand alone requirements under Porter-Cologne 13142.5. Remember, 13142.5 says we need to minimize the intake and mortality of marine life. That means that you have to design your plant using technology and a location that will minimize the marine life that comes in. If we today didn't have an EPS, would this be the right place for it. I don't think that we can answer in the affirmative.</p>	<p>independently for the benefit of the CDP ("stand-alone operation"). The value of the CDP in stand-alone mode is not a subject that is within the Regional Board's purview, and which is irrelevant to the present proceeding.</p> <p>The comment suggests that intake alternatives, location, and technology should be evaluated in a future proceeding on stand-alone mode. In the eventuality of such a proceeding, the focus would be on the intake technologies not feasible today because of access limitations to the EPS intakes. The substantial evaluations of these topics already undertaken pursuant to these Minimization Plan proceedings would be relevant in any stand-alone proceeding.</p> <p>Future performance by the Discharger to meet its contractual obligations to its retail water customers is beyond the scope of the Regional Board's present action. It should be noted that the retail water users uniformly have urged the Regional Board to approve the Minimization Plan. Some future proceeding in which the City of Carlsbad or the San Diego Water Authority take over the CDP, whether via eminent domain or some other means, is speculative and beyond the scope of the present action. Neither entity has offered any comment on such a subject.</p>
79.	<p>The other thing that is difficult in the staff in the approval of the tentative order is what triggers the stand alone analysis. As you've said or has been recommended by the board, by board staff, that the trigger of the stand alone analysis is the complete cessation of EPS infrastructure use. Well, that just incentivizes the continuation of that once through cooling technology. The reality is the benefits of co-location that are being used to drive your alternative analysis for a co-located plant, go away as soon as the driver of the flows becomes the desalination facility. Therefore, it would be appropriate for the tentative order to require the stand alone analysis to occur at that point where for any given quarter 3 months of flow the total flows being driven through the system are the, more the result of the desal facility than Encina Power</p>	<p>The Tentative Order proposes to specify further what triggers the stand-alone analysis, requiring the ROWD for stand-alone authorization within 180 days from when the operator of the EPS gives notice to the CEC of intent to cease operations.</p>

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	<p>Station. So if you take half of the flows, half of the 304, and you say okay, as soon as they hit half of that amount for three months, then its really the benefits of co-location evaporate and it should be the desal facility having to come back and do its Porter-Cologne analysis which as I have just said they can't meet the Porter-Cologne standard as a stand alone facility so why should they even be building it now in the first place.</p>	
80.	<p>I just wanted to hit one final issue because it has become important in the context of litigation, it should be realized here when you talk about alternatives analysis, one of the things that Poseidon has consistently said is look we have to meet our project purpose and our project purpose is to provide water for Carlsbad and the San Diego region and then when you look at the analysis in the flow minimization plan, the only alternatives they look at are the City of Carlsbad. And then in our cases, specially the Coastal Commission case we have to locate this in Carlsbad because that is the purpose of the project. That ignores reality. When we look at way the county water authority works, when we look at the very water contracts, that they have with the various districts, we know that not everybody is connecting up to the City of Carlsbad directly. Specifically, they are connecting up to the desalination facility. We know that whether its Oceanside, or the Sweetwater District, Olivenhain they are all connected to one common thread and that is the County Water Authority conveyance and storage system. Given the complexity of that system and the fact that the County Water authority distributes to everybody, what we have here are paper transfers much like the Imperial Irrigation system transfer much like the way water works in California. You by and sell the rights to water, you don't buy and sell that physical water itself in most circumstances. So the extent to which the Poseidon or the</p>	<p>See Oral Response No. 24 above.</p> <p>To the extent Commenter asserts that alternative intakes were viable, see Oral Response No. 29 for a discussion of the infeasibility of alternative intakes .</p> <p>To the extent Commenter is suggesting that the Minimization Plan is insufficient, see Response No. 17 for a discussion of the Minimization Plan's compliance with CWC Section 13142.5(b)'s requirement to use the best available and feasible mitigation measures to minimize intake and mortality of marine life.</p> <p>See Response No. 24 for a discussion of the Regional Board's approval of the CDP as a co-located project versus as a stand-alone project.</p> <p>The statute of limitations for challenging the Regional Board's adoption of Order No. R9-2006-0065 identifying the CDP site as co-located with the EPS has expired.</p>

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	<p>city come forward and say it has to be located in the city is simply doesn't. Frankly, it can located anywhere in the Metropolitan Water District service area and as long as it can make it to any one of these pipes, you can do the paper transfers. That is the constraint on the scope of the alternatives analysis and it makes no sense to constrain it simply to the location that we have looked at in Carlsbad. As I asked earlier, would this be the best available site if the EPS shut down, I think we can say probably not and frankly we don't have evidence in the record to ensure ourselves of that. There's a lot of other technical issues. I will just close by saying that the future is alternative intakes. They are proposing alternative intakes for a plant up in Dana Point. We don't put this out there to say that the Dana Point plant should take the place of the Carlsbad Desalination Project. But we do show it to say that this is feasible in the region and if you look somewhere outside of Carlsbad where you might have the soils and you might have the conditions where you can do it, alternative intake will be viable. What you approved today is a co-located plant assuming that you move to approve it. The very best you can do if you approve it is to require appropriate mitigation for impingement and entrainment which means adding on to what they've already been required by the Coastal Commission to do. And frankly, you should reconsider the broader picture of whether as a stand alone facility which we know it will eventually come forward to try to get permits for. Whether it can be permitted then and whether you should force them to give you more information about alternative locations before you take this highly precedential step. Thank you for your consideration.</p>	
2. Testimony of Ed Kimura Representing Sierra Club San Diego Chapter		
81.	The Flow, Entrainment and Impingement Minimization Plan is highly flawed and we're urging you, urge you reject it.	The comment makes an argument and recommendation that does not prompt a specific response.

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82.	<p>As stated in the comment letter, my opinion, that Poseidon reasoning to disregard the outliers in the impingement data is flawed.</p> <p>And there are a number of reasons that our comments are slightly different from those who have previously argued that they are not to be discarded.</p> <p>First of all, it's really important to understand the nature of the fish and how they behave in the neighborhood of entrainment.</p> <p>There was an interesting report that was published in 1985 by Mark Helbing of Delos, on the behavior factors of fish entrainment in offshore cooling waters in Southern California. And I found that information very informative and enlightening in terms of how the fish behave.</p> <p>When they come into the lagoon, for example, why are they being impinged? There are a number of factors. And in fact if you go back and look at the early impingement data from 1979, 1980, there is a clear information that shows impingement occurs much higher at nighttime than at daytime. And the reason is, is that while fish can actually navigate and sense flow, they can't sense the flow when it's dark. And so, if they're moving around in the lagoon at night, there's no way that they can avoid the intake if they're schooling and getting, moving into it and getting trapped by the intake.</p> <p>And what I've done is I've analyzed a lot of that data, looking at the fish behavior, and I've done it for the top 20 impinged fishes and plotted, in behavior over time, how they get impinged, what time they occur. And it's really informative, because when we look at the total picture.</p>	<p>See Oral Response No. 76 regarding outliers.</p> <p>The Regional Board appreciates the specific information on fish behavior provided by the comment. The Regional Board does not believe, however, that a species-by-species behavioral assessment is warranted, as the comment argues, before a sampling event can be considered an outlier. An outlier is largely a statistical concept. Biological information can be useful in exploring plausible explanations for an outlier. This is precisely why the presence of freshwater fish in the impingement surveys for January 12 and February 23, 2005 is relevant.</p> <p>The comment states that impingement may occur disproportionately at night. The impingement surveys were conducted over 24-hour periods and would have captured diurnal variation in impingement. Any disproportionate impingement at night would be reflected in the mitigation obligations.</p> <p>The 1985 report referred to in the comment was not provided to the Regional Board, and the Regional Board therefore was not provided an opportunity to evaluate this report for its relevancy to the present action.</p>

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	<p>Then you begin to understand there are natural occurrences taking place that actually influence when fish get impinged. And in the Figure 1 that I showed, the attempt that I did there was to provide two different species – the shiner surf perch and the top smelt. There are two different behaviors. The top smelt likes to run in tight schools, the surfer perch really does not find schooling type behavior. It also turns out that the event occurred just prior to when the top smelt goes into, and starts spawning. So you would assume that they tend to gather before that time. And if they're schooling in a tight formation, they can get gobbled up by the intake. On the other hand, the surfer perch does not school as often, and it does not have a specific time for spawning. And if you looked at the data, you do not really show any evidence at that time when that spike came out to be influenced by those high impingement. And so if you look at the totality of all of the different species, they all differ, they all vary differently in terms of the behavior, and that you have to into consideration when you say "Should this be an outlier?"</p>	
3. Testimony of Dan McLellan, private citizen		
83.	<p>We must address the cost, high energy use and environmental impacts [of desalination] through discharge of brine, chemicals and carbon dioxide, as well as impingement and entrainment.</p>	<p>The CDP has been extensively reviewed by several of the State's resource agencies, including the Coastal Commission, the State Lands Commission, and the Regional Board. Recognizing that the CDP will not be a direct emitter of GHG emissions, the Coastal Commission required the Discharger to submit, and has since approved, a Greenhouse Gas Plan which will result in the full offset of the Project's net indirect GHG emissions. Regional Board Order No. R9-2006-0065 prescribes the CDP's waste discharge requirements, addressing the potential water quality effects of the brine and chemicals. Under the terms of the Minimization Plan, the CDP's impingement and entrainment will be offset fully by mitigation.</p>
84.	<p>Desalination is still the most expensive source of water due to its energy costs.</p>	<p>Comment provides no factual basis in support of this conclusion.</p>

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85.	The cost will increase if the plant operates below capacity exemplified by Tampa Bay water desalination plant that was developed by Poseidon Resources, then outsourced to multinational water agencies Axiona and EWH. The 25 million gallon a day plant came online late, over budget, and has rarely operated at full capacity. Every day that they operate under capacity, the public sector loses and the private sector gains.	Commenter makes assertions unsupported by facts in the administrative record. Thus, the relevance and/or validity of the comments are therefore not subject to verification or evaluation. To the extent that Commenter projects below-capacity operation or a consumer cost increase, it is unsupported speculation. The economic issues associated with the level of operation of the Tampa Bay project are not relevant to the CDP. In addition, the claim that decreased operations of the CDP “under capacity” will have effects on the public and private sectors is not relevant to this proceeding.
86.	We must consider alternatives that provide sustained benefits with lower cost, such as reclamation and conservation.	See Oral Response No. 42.
87.	The plan to mitigate damage done to the marine ecosystem by a desalination plant in Carlsbad is to plant trees, aiming to offset carbon dioxide emissions from increased power use. There is no chosen location for a marine mitigation project, and that is a glaring deficiency to the current plan. The management of Poseidon Resources believes they can destroy one area of the environment and create an ecosystem nearby to make up for it. One of the aspects of mitigation even involves stewardship of the water area immediately adjacent to the power plant. This is the very same water they are most likely to pollute discharge that may very well get back, drawn back, into the intake pipes due to the ocean’s currents. Are we to expect that the polluters are in the best position to also be stewards of our local resources?	<p>The scope of the Regional Board’s review is limited to whether the Minimization Plan will result in the CDP’s compliance with CWC Section 13142.5(b), which requires the use of the best available site, design, technology, and mitigation measures feasible to minimize the intake and mortality of marine life. The Minimization Plan does not provide for the planting of trees as a means to minimize intake and mortality of marine life.</p> <p>The Coastal Commission, however, required the Discharger to develop a Greenhouse Gas Reduction Plan (GHG Plan), in order to address emissions. The GHG Plan, approved by the Coastal Commission on August 6, 2008, requires the Discharger to account for and reduce to zero the CDP’s net indirect GHG emissions resulting from electricity purchased to run the desalination plant (the CDP will not directly emit GHGs). This will be achieved through the acquisition of carbon offsets and renewable energy credits. The GHG Plan also requires implementation of state-of-the-art on-site energy minimization measures. The Coastal Commission determined that the GHG Plan will result in net carbon neutrality and fully mitigate any effects of the Project’s indirect GHG emissions on coastal resources. As part of the GHG Plan, Poseidon has also agreed to contribute \$1 million towards reforestation of areas in San Diego impacted by the 2007 wildfires.</p>

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		<p>Separately, to address marine life issues, the MLMP requires the Discharger to create or restore up 55.4 and no less than 37 acres of estuarine wetlands in one or two mitigation sites in two Phases. The Minimization Plan provides for sufficient mitigation to fully offset estimated entrainment or impingement at the CDP for flows up to 304 MGD. The MLMP identifies 11 mitigation pre-approved mitigation sites, 5 of which are within the boundaries of the Regional Board and therefore priority sites. Agua Hedionda Lagoon is among the sites listed. Final selection of the mitigation site(s) is subject to the approval of the Regional Board and the Coastal Commission. As part of Phase II, the Discharger may propose in its Coastal Development Application to reduce or eliminate the Phase II mitigation (18.4 acres) by implementing new entrainment technology or conducting dredging of Agua Hedionda Lagoon.</p> <p>Mitigation measures pursuant to the MLMP are taken in addition to site, design, and technology measures to minimize the intake and mortality of marine life.</p> <p>The proposed plant will not destroy an area of the environment, as stated by commenter. When using EPS discharge water, the plant will have a negligible effect on receiving waters. When drawing water directly from Agua Hedionda Lagoon without it first being used at the EPS, there is the potential for impingement and entrainment from the plant. These are very particularized effects that do not destroy the environment of the affected area.</p> <p>The comment incorrectly suggests that the CDP's discharge will "pollute" adjacent water. Pursuant to the Project's NPDES Permit, Order No. R9-2006-0065, the desalination plant is conditioned to comply with all Clean Water Act and Ocean Plan requirements. The Regional Board determined that an average daily effluent limitation of 40 parts per thousand for salinity would protect beneficial uses of the ocean, and Poseidon is required to comply with that limitation pursuant to its NPDES Permit. Any challenge to the discharge requirements should have been raised during the 2006 permit proceedings and is waived at this time.</p>

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88.	With regard to impingement and entrainment, the studies from the Encina power station indicate there will be a consistent level of destruction of small fish and fish eggs. The ocean is already overfished and we should not overlook the slaughter of small fish and fish eggs. This is especially detrimental to the future growth of the fish population. Poseidon has often stated that two pounds of fish per day are impacted while the number from the report showed up to 40 pounds, for as you saw today, much greater than that, of small fish and eggs per day.	<p>Under the terms of the MLMP, Discharger must create or restore up to 55.4 acres of estuarine wetlands. This mitigation project will provide sufficient habitat to produce and sustain larvae from the eight most commonly entrained species in sufficient quantities to fully offset potential entrainment associated with the CDP's stand-alone operations. The mitigation wetlands will also produce fish biomass that has not already been reserved for entrainment mitigation. This biomass is available to compensate fully for potential CDP-related impingement.</p> <p>The comment offers no evidence to support its assertion that the CDP will be detrimental to the fish population. There is no evidence of population-level impact in the record.</p>
89.	And in the report, they made the assumption that this was due to toxic runoff from our streets, killing fish, and then subsequently sucking these fish and toxic runoff into the plant. Perhaps that toxic runoff should be mitigated as well. If we are concerned with water supply, let's look at the reclamation from our storm drains, as well as to help protect the ocean and wildlife.	<p>It is beyond the scope of this action to consider mitigation of any toxic runoff from upstream in the watershed. The Regional Board administers a program for dealing with urban runoff; but that program is not part of this CWC Section 13142.5(b) proceeding.</p> <p>To the extent Commenter makes arguments concerning broad planning goals or policies regarding water reclamation, see Oral Response No. 42.</p> <p>With respect to reclamation of water from storm drains, the comment does not provide any assessment as to whether such might offer a reasonable alternative to the CDP. The Regional Board does not believe that harvesting storm drain runoff is a legitimate alternative to producing 50 MGD of potable water on a daily basis to meet the needs of the City of Carlsbad and the other water retailers under contract with the Discharger. The Regional Board is promoting the harvesting of rainfall under the regional storm drain permit for the region including the City of Carlsbad, but harvesting is not expected to provide a major source of potable water, as the proposed CDP would do. See Order No. R9-2007-0001, the San Diego County Municipal Storm Water Permit.</p>
90.	Furthermore, private sector control of water supply is a dangerous precedent to set. It allows supply and allocation	This comment makes several arguments that are not based on evidence in the record and do not warrant a specific response. The comment overlooks

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	decisions, on a resource vital to the survival of humans, to be made by an entity that is responsible only to its shareholders, not clientele or consumers or the people of Southern California. This approach is funded by a multinational investment corporation disguised as a local utility with a vested interest in preserving our local resources or environment. These multinationals are the last people I would contract to restore ecosystems and steward our natural resources.	the fact that the Discharger is a water wholesaler, and is providing water to public-sector water retailers such as cities and water districts, each of which exert significant control over water supply and allocation decisions, including with respect to the water supplied by the Discharger. It also overlooks the fact that the potential effects of the project on local resources and the environment are regulated not only by the Regional Board and the Coastal Commission, but have been the subject of an Environmental Impact Report with the City of Carlsbad as the lead agency. To the extent this comment makes arguments concerning broad policy goals, see Oral Response No. 42.
4. Testimony of Jared Cariscuolo Representing San Diego Surfrider Foundation		
91.	<p>(a) Surfrider is not expressly opposed to desalination.</p> <p>(b) We are, however, opposed to this particular project because we don't believe it makes the best use of available water extraction resources.</p> <p>(c) We think as Mr. Gonzalez pointed out that subsurface intakes are a much superior alternative.</p> <p>(d) We would prefer to see waste water recycling and some of the other methods of reclaiming the water utilized before we take as drastic a step as using an open ocean intake pipe.</p>	<p>(a) Comment noted.</p> <p>(b) Comment does not prompt a specific response. To the extent Commenter makes arguments concerning broad planning goals or policies, such comments are generally beyond the scope of the Regional Board's review of the Minimization Plan. The CDP has, however, undergone extensive environmental review by several resource agencies in addition to the Regional Board, including the City of Carlsbad, the Coastal Commission, and the State Lands Commission.</p> <p>(c) See Oral Response No. 29 regarding subsurface intake alternatives.</p> <p>(d) See Response 42.</p>
92.	So the three points that I wanted to bring up are: that this proposed plan ultimately will result in more marine life mortality than in the current system.	The comment provides no factual basis for the assertion that the Minimization Plan will result in more marine life mortality than in the current system. To the contrary, the Minimization Plan provides for the minimization of intake and mortality via site, design, and technology measures, and provides for full offset of such impacts by mitigation.
93.	Second point, it will facilitate the continued intake within the Encina area through once-through cooling after the system is taken offline.	The comment is speculation and without factual basis to which the Regional Board can respond.

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94.	And the third issue that we have especially regards to the mitigation project is that there is not a clearly defined location.	Under the terms of the Minimization Plan and MLMP, a specific mitigation site or sites will be selected and must be approved by the Regional Board and the Coastal Commission.
95.	We respect that the sites(?) made the effort to set aside a plan but the bigger issue we have is that that mitigation plan, that 55 acres could be done anywhere throughout the state and we believe that it should be local.	The Minimization Plan provides that of the 11 sites identified in the MLMP, sites within the boundaries of the Regional Board are priority sites. See section 6.5 of the Minimization Plan for a list of the 11 sites.
5. Testimony of Scott Andrews, private citizen		
96.	Mitigation is an extremely inexact science. It's unpredictable whether marine reserves will work.	<p>Comment noted that mitigation is an inexact science and that there is some unpredictability involved in wetland restoration. This is not unusual and is well accounted for in the MLMP. Nonetheless, wetlands restoration, including restoration as mitigation and restoration for the sake of restoration, is a high priority among resource managers and local, state, and regional governments. The key to addressing unpredictability rests in establishing rigorous performance standards that must be satisfied, as has occurred here. By imposing such standards, the Coastal Commission and Regional Board have determined there is a high degree of scientific confidence that the required restoration will succeed. The MLMP's strict performance standards and success criteria were developed during the interagency process at the direction of the Coastal Commission using the successful SCE mitigation project for the San Onofre Nuclear Generating Station as a model. These strict performance criteria and enforcement mechanisms will ensure success of the mitigation sites(s).</p> <p>The legal standard applicable to the Project, CWC Section 13142.5(b), specifically provides for the use of mitigation as a means to minimize intake and mortality of marine life. The Regional Board believes that the science of mitigation is sufficiently well established to provide a rational basis and solid foundation for the Minimization Plan.</p>
97.	The result of the loss of wetlands is gross declines in fish stocks.	No wetlands will be lost as a result of the CDP. The CDP will result in impingement and entrainment, which losses are offset by the project's

**SAN DIEGO REGIONAL BOARD RESPONSES TO ORAL COMMENTS
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

COMMENT NO.	COMMENTS AND/OR CONCERNS	REGIONAL BOARD RESPONSE
		mitigation.
98.	Mission Bay is polluted by sewage and waste, so it is not a good alternative spawning ground for the two North County lagoons.	Mission Bay is not one of the sites listed in the MLMP, and is not being considered as an alternative for two North County lagoons. See March 27 Minimization Plan, Chapter 6, which provides a list of 11 sites where mitigation may be accomplished. These include the Tijuana Estuary, San Dieguito River Valley, San Elijo Lagoon, Agua Heidionda Lagoon, Buena Vista Lagoon, Anaheim Bay, Santa Ana River, Huntington Beach Wetlands, Ballona Wetlands, Los Cerritos Wetlands, and Ormond Beach.
99.	Orange County is drinking sewage water filtered, totally filtered, UV-zapped. It's very safe. Very safe for human consumption. You're telling me that these guys who want to build these plants up and down the coast, have already done so in Spain and Europe to a large extent, can't develop the science to filter out larvae, when we can filter and clean up all the toxics in sewage?	Commenter provides no factual support for his comments and is speculating. The Minimization Plan provides for the use of the best available site, design, technology, and mitigation measures feasible to minimize the intake and mortality of all forms of marine life. Under the terms of the Minimization Plan, projected impingement and entrainment will be fully offset by mitigation. Moreover, in the event the EPS permanently ceases operations, the Regional Board will re-evaluate the CDP's compliance with CWC Section 13142.5(b), including technology measures as appropriate. Additional entrainment-reducing technology is one basis upon which the Discharger may apply for a reduction or elimination of Phase II mitigation.