

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

RESOLUTION NO R9-2009-0_____

**FINAL APPROVAL OF
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN
FOR
POSEIDON RESOURCES CORPORATION
CARLSBAD DESALINATION PROJECT**

WHEREAS, the California Regional Water Quality Control Board, San Diego Region (hereinafter "San Diego Water Board" or "Regional Board"), finds that:

I. BACKGROUND

1. On August 11, 2006, the Regional Board adopted Order R9-2006-0065 NPDES No. CA0109223 (Order No. R9-2006-0065), which established waste discharge requirements for Poseidon Resource Corporation's (Poseidon) Carlsbad Desalination Project (CDP). CDP, which will be co-located with the Encina Power Station (EPS) and use EPS's intake system and discharge channel, will discharge up to 57 million gallons per day (MGD) of a combined waste stream comprised of concentrated saline waste seawater and filter backwash wastewater.
2. CDP is not subject to Section 316(b) of the Clean Water Act because that section only applies to power generation operations.
3. CDP is subject to California Water Code Section 13142.5, which requires use of the best available site, design, technology, and mitigation measures feasible to minimize the intake and mortality of all forms of marine life.
4. Section VI.C.2(e) of Order No. R9-2006-0065 required Poseidon to submit a Flow, Entrainment and Impingement Minimization Plan ("Minimization Plan") to "address 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." Approval of the Minimization Plan is not a condition for commencement of the discharge from CDP, but no discharge has been made to date. Order No. R9-2006-0065 expires October 1, 2011.
5. On March 7, 2008, Poseidon submitted an updated Minimization Plan addressing the best available site, design, technology, and mitigation measures feasible to minimize the intake and mortality of all forms of marine life in accordance with Water Code section 13142.5(b) requirements and Section VI.C.2(e) of Order No. R9-2006-0065.

6. On April 9, 2008, the Regional Board adopted Resolution R9-2008-0039 conditionally approving Poseidon's Minimization Plan. The conditional approval required Poseidon to submit "an amendment to the [Minimization] Plan that includes a specific proposal for mitigation of the impacts, by impingement and entrainment upon marine organisms resulting from the intake of seawater from Agua Hedionda Lagoon, as required by Section VI.C.2(e) of Order No. R9-2006-0065; and shall resolve the concerns identified in the Regional Board's February 19, 2008 letter to Poseidon resources, and the following additional concerns:
 - a) Identification of impacts from impingement and entrainment;
 - b) Adequate monitoring data to determine the impacts from impingement and entrainment;
 - c) Coordination among participating agencies for the amendment of the [Minimization] Plan as required by Section 13225 of the California Water Code;
 - d) Adequacy of mitigation; and
 - e) Commitment to fully implement the amendment to the Plan."
7. In November 2007, as a condition of the Coastal Development Permit for the Project, the Coastal Commission ordered Poseidon to develop a Marine Life Mitigation Plan ("MLMP"). Regional Board Resolution R9-2008-0039 directed Poseidon to submit the MLMP to an interagency process. Participants in the interagency review process for the MLMP included representatives from the Regional Board, California Coastal Commission, California Department of Fish and Game, California Department of Transportation, California State Lands Commission, City of Carlsbad, City of Vista, and U.S. Fish and Wildlife Service.
8. On July 7, 2008, Poseidon submitted a proposed MLMP to the Coastal Commission, who circulated it to other interested agencies for comment. The MLMP was revised to address concerns raised by Coastal Commission Staff and incorporate many of Coastal Commission Staff's recommendations, and resubmitted August 2, 2008. On August 6, 2008, the Coastal Commission approved the MLMP but took time to come to final language. On September 17, 2008, CDP Project Manager Peter MacLaggan discussed the MLMP approved by the Coastal Commission with the Executive Officer and indicated that he did not think final language would be available by the October 8, 2008 deadline set by Resolution R9-2008-0039 for submittal of the plan. The Executive Officer indicated that he wished to have final language submitted, and Poseidon complied with this request.
9. On November 7, 2008, Coastal Commission staff finalized language in the MLMP reflecting the Coastal Commission's approval of the MLMP on August 6, 2008. On November 14, 2008, Poseidon submitted the final version of the MLMP to the Regional Board. As submitted, the MLMP represents an agency consensus on the appropriate mitigation strategy for the CDP.
10. This action is exempt from the provisions of the California Environmental quality Act (Public Resource Code, Section 21000 et seq.) in accordance with Water Code

Section 13389 (see *County of Los Angeles v. California State Water Resources Control Board*, 143 Cal. App. 4th 985, 50 Cal. Rptr. 3d 619 (2006), and this action of the Regional Board does not have the potential to cause a significant effect on the environment (see Tit. 14, Cal. Code of Regulations, Section 15061).

II. FINDINGS

11. Water Code section 13142.5(b) requires that “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.” Each element of section 13142.5(b) is addressed below.

Site

Chapter 2 of the Minimization Plan identifies the best available site feasible to minimize the intake and mortality of all forms of marine life (Minimization Plan, 2-1 – 2-8), and is incorporated herein by reference.

12. CDP will not build a new intake structure to acquire its source water. Instead, it will be co-located with the EPS and primarily use the cooling water discharged by the EPS to support its operations. The EPS’s maximum permitted intake of water is 857 million gallons per day (MGD), more than sufficient to meet CDP’s 304 MGD intake needs.
13. Only three sites in the City of Carlsbad would accommodate a large desalination project, including the EPS, the Encina Water Pollution Control Facility and Maerle Reservoir. The EPS site, however, is the only site in reasonable proximity to the seawater intake, the outfall, and key delivery points of the distribution system of the City of Carlsbad, the largest anticipated user of the desalinated water. EPS is the only site with sufficient space and necessary zoning to accommodate the Project.
14. The use of the EPS’s existing intake and discharge facilities avoids construction of a major new intake system and discharge facilities, and prevents costs associated with demolition of the EPS’s intake and outfall when EPS ceases to operate. In 2007, seawater discharge by the EPS would have been sufficient to meet 61% of CDP’s intake requirements. As a result, when the EPS is operating, the potential intake of marine organisms associated with CDP’s operations will be reduced by 61% in virtue of its co-location with the EPS.
15. The EPS site is associated with the least environmental impacts, energy consumption, construction cost, operating cost, and disruptions to public and private property. There are no feasible alternative sites that would avoid or minimize environmental impacts of the Project.¹

¹ In approving a Coastal Development Permit for the Project, the Coastal Commission found that there are no feasible alternative locations for the Project that would

Design

Chapter 3 of the Minimization Plan identifies the best available design feasible to minimize the intake and mortality of marine life (Minimization Plan, 3-1 – 3-8), and is incorporated herein by reference.

16. When the EPS is conducting power generation operations and using 304 MGD or more of seawater for once-through cooling, CDP will cause only a de minimis increase in the impingement and entrainment of marine organisms over that caused by the EPS's operations.
17. Because of significant differences in the EPS's intake design and operations, CDP intake and mortality of marine organisms will be significantly lower when operating independently of the EPS than when operating cooperatively. When operating alone, CDP will reduce inlet screen velocity, fine screen velocity and ambient temperature processing, and will eliminate heat treatment, all of which will reduce mortality of marine life. There are no additional, feasible design measures that would minimize the intake and mortality of marine life.

Technology

Chapter 4 of the Minimization Plan identifies the best available technology feasible to minimize the intake and mortality of marine life (Minimization Plan, 4-1 – 4-31), and is incorporated herein by reference.

18. Because CDP will be co-located with the EPS, unless and until the EPS ceases operations, entrainment and impingement reduction technologies must be compatible with both operations.
19. CDP will, however, implement the following technologies to reduce intake and mortality of marine organisms: installation of variable frequency drives to reduce total intake flow to no more than that needed at any given time, installation of micro-screens, and installation of low impact pretreatment technology. Marine organisms captured by the screens will be returned to the ocean.
20. There are no additional, feasible technologies that would minimize the intake and mortality of marine life. A variety of alternative intakes were studied including subsurface intakes (vertical and horizontal beach wells, slant wells, and infiltration

minimize or avoid environmental impacts, and that the proposed Project as conditioned mitigates impacts to the maximum extent feasible. (Coastal Commission's Final Adopted Findings, 4, 47-52, 93).

galleries) and a new open ocean intake, but these were found to be infeasible and/or more environmentally damaging than the Project.²

Mitigation

21. When operating cooperatively with the EPS, impingement associated with CDP's operations will be de minimis. When operating independently of the EPS, impingement associated with CDP's operations will be further reduced by the technology measures described above.
22. When operating cooperatively with EPS, and not taking entrainment reductions caused by use of technology into account, CDP will entrain the number of marine organisms equivalent to the number produced in a 55.4-acre estuarine and nearshore habitat.
23. The MLMP will offset any impingement and entrainment by providing for the construction of up to 55.4 acres of wetlands in two phases.
24. Phase I of the MLMP provides for 37 acres of wetland restoration within the Southern California Bight. During this phase, Poseidon will conduct technology review to determine whether new or developing technologies have become feasible to reduce entrainment.
25. If the EPS stops operating or meets less than 15% of CDP's intake needs, Phase II of the MLMP applies, which requires an additional analysis of whether new or developing technologies have become available and are feasible to reduce entrainment. A new entrainment analysis will be conducted at that time to assess whether such technologies should be implemented, and/or if additional mitigation is necessary. If additional mitigation is necessary, Poseidon may propose additional wetland mitigation acreage of up to 18.4 acres or the assumption of dredging obligations for Agua Hedionda Lagoon in exchange for mitigation credit. Poseidon may elect to construct 55.4 acres of wetlands during Phase I.
26. The Minimization Plan, coupled with the MLMP amendment, fully satisfies Order No. R9-2006-0065, Resolution No. R9-2008-0039, and the requirements of California Water Code Section 13142.5. Poseidon has proposed a seawater intake that will utilize the best available site, design, technology, and mitigation measures feasible to minimize the intake and mortality of marine life.

THEREFORE, BE IT RESOLVED THAT:

1. The San Diego Water Board hereby finally approves the MLMP amendment, effecting a full and final approval of the Minimization Plan.

² See also Coastal Commission's Final Adopted Findings, at 47-53.

2. This Resolution is only of limited duration and is only applicable so long as Poseidon is operating cooperative with the EPS. When Poseidon proposes to operate independently of the EPS or the EPS permanently ceases power generation operations, the Regional Board may further evaluate whether CDP's operations minimization the intake and mortality of marine life using the best available design, technology and mitigation measures.

I, John H. Robertus, Executive Officer, do hereby certify that the foregoing is a full, true and correct copy of a resolution adopted by the California Regional Water Quality Control Board, San Diego Region, on February 11, 2009.

JOHN H. ROBERTUS
Executive Officer