December 21, 2016

Cy R. Oggins
California State Lands Commission
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CEQA.comments@slc.ca.gov

NOTICE OF PREPARATION OF A SUPPLEMENTAL ENVIRONMENTAL IMPACT REPORT FOR THE POSEIDON RESOURCES PROPOSED HUNTINGTON BEACH DESALINATION PROJECT; SCH No. 2001051092

Dear Mr. Oggins:

The Santa Ana Regional Water Quality Control Board (Santa Ana Water Board) and State Water Resources Control Board (State Water Board) (collectively Water Boards) received the Notice of Preparation (NOP) of a proposed Supplemental Environmental Impact Report (SEIR) for Poseidon Resource's (Poseidon's) Huntington Beach Desalination Project, as currently proposed (Project). The SEIR is intended to evaluate environmental impacts associated with Poseidon's proposed modifications to the existing offshore intake and discharge structures for both co-located and stand-alone operations. The proposed modifications include the installation of 1.0 mm wedgewire screens at the intake line and a six port diffuser at the discharge outfall.

The Santa Ana Water Board is the agency responsible for issuing the National Pollutant Discharge Elimination System (NPDES) permit for the discharge of brine and other wastes from the Project to the Pacific Ocean and for making a determination regarding the Project's consistency with California Water Code section 13142.5(b) (CWC section 13142.5(b)). Poseidon submitted to the Santa Ana Water Board both a report of waste discharge and a request for a Water Code section 13142.5(b) determination. The Santa Ana Water Board, in consultation with the State Water Board, is currently reviewing this information but has not yet determined whether the Project as proposed utilizes the best available site, design, technology, and mitigation measures feasible to minimize intake and mortality of all forms of marine life as required by CWC section 13142.5(b) and as further specified in the Water Quality Control Plan for the Ocean Waters of California (Ocean Plan). Water Boards staffs acknowledge that the analysis required by the Ocean Plan, in determining consistency with CWC section 13152.5(b), is separate and distinct from the California State Lands Commission's (State Lands Commission's) analyses for the SEIR; however, a CWC section 13142.5(b) is subject to CEQA.[1] Accordingly, Water Boards staffs offer the following comments on the scope of the

[1] NPDES permits are statutorily exempt from CEQA. (Cal. Wat. Code, § 13389.)

environmental analysis to be conducted by the State Lands Commission for the Project, including co-located and stand-alone operating conditions.

General Comments

As described in the NOP, the proposed modification to the discharge outfall consists of installing a six port diffuser during co-located operations and subsequently sealing off four ports during stand-alone operations. If the Project is not fully constructed and in operation until after Huntington Beach Generating Station ceases intake of seawater, the Project would only operate under stand-alone conditions, and a six port diffuser would be unnecessary for the reduced volume of discharge under such conditions. The SEIR should evaluate the impacts associated with installing and operating a two-port diffuser that would operate under stand-alone conditions, in the event that there are no co-located operations for the proposed Project.

The SEIR should include estimates of the biological productivity of the impacted habitat(s) and the proposed mitigation habitat(s) to aid in identifying possible mitigation for any potentially significant impacts.

Biological Resources (section 3.4.3 of the NOP)

The SEIR should evaluate the effects of how the design and orientation of the wedgewire screens can be optimized to minimize entrainment and prevent or eliminate impingement.

The SEIR should also evaluate how the wedgewire screens will be cleaned and maintained to ensure that they function as initially designed while the proposed Project is operational.

The installation of the wedgewire screens and the multi-port diffusers may result in the suspension of marine sediments, which could increase turbidity and have negative effects on biological resources, including photosynthetic organisms. The SEIR should assess these impacts.

The SEIR should evaluate the operational impacts on biological resources associated with the diffuser, including impacts on marine life from the high salinity of the brine plume and shearing-related mortality. The brine mixing zone is an area with elevated salinity concentrations, and one approach for assessing potential impacts would be to assume all marine life in the brine mixing zone experiences salinity-related mortality. The potentially lethal vortices that can shear marine life will occur within the brine mixing zone. However, the diffusers are constantly mixing brine with "new" water, and organisms in the entrained dilution water are exposed to elevated salinity and potentially lethal vortices. The Final Staff Report to the Amendment to the Water Quality Control Plan for Ocean Waters of California Addressing Desalination Facility Intakes, Brine Discharges, and the Incorporation of Other Non-substantive Changes includes a discussion on potential ways to estimate marine life mortality associated with discharge-related mortality. However, there are no clear studies that have considered salinity-related mortality in combination with shearing-related mortality that take into account the constant mixing with "new" water. Recently, Water Boards staffs have seen the Empirical Transport Model with the Area Production Forgone (ETM/APF) model applied to estimate the impacts associated with shearing impacts. The SEIR should evaluate whether this is an appropriate application of the ETM/APF model and also estimate the impacts associated with salinity- and shearing-related mortality, without double counting the mortality (i.e., an organism that perished from salinity toxicity would not also perish from shear forces). Furthermore, this evaluation may benefit from review by experts such as Peter Raimondi, Philip Roberts, reviewers selected by the Ocean Science Trust, or equivalent, since few studies have looked at shearing-related mortality and the combined effects of salinity- and shearing-related mortality.

Marine Water Quality (section 3.4.7 of the NOP)
Some wedgewire screens are made from biofouling-resistant materials (e.g., copper-nickel alloys) that leach elements into the seawater and may degrade marine water quality. The SEIR should evaluate the potential impacts of leaching on marine water quality and biological resources. The SEIR should also analyze potential impacts associated with any chemicals used in the maintenance of the screens and intake structure.

To assess impacts to marine water quality from the proposed installation of a six port diffuser and the diffuser array for stand-alone conditions, the SEIR should evaluate the following:

- The dissolved oxygen concentrations and other water quality parameters of the discharge plume and receiving waters to determine if and where hypoxic conditions are occurring. Section 3.4.3 should evaluate if and how hypoxic conditions may be negatively affecting benthic marine life and marine life throughout the water column.

- The potential for the construction and operation of a six port diffuser and the diffuser array for stand-alone conditions to suspend benthic sediments and increase turbidity and the associated impacts on marine water quality and biological resources. To be complete, the analysis should include the velocity of the brine plume at the point in which it interacts with the seafloor and a discussion of the type of sediment and grain size at the location of the discharge. In the event the State Lands Commission determines there are significant impacts associated with the diffusers suspending benthic sediments and increasing turbidity, Water Boards staffs suggest analyzing diffuser design alternatives positioned higher off the seafloor and at angles greater than 47 degrees (e.g., 60 degrees) from the seafloor.

Thank you for the opportunity to comment on this environmental document. If you have any questions or would like to discuss further, please contact me at (951) 782-3286 or Milasol Gaslan at (951) 782-4419.

Sincerely,

Kurt V. Berchtold
Executive Officer

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