

February 22, 2016

Via U.S. and Electronic Mail

Santa Ana Regional Water Quality Control Board
3737 Main Street, Suite 500
Riverside, California 92501
Attn: Milasol C. Gaslan, Chief Wastewater Program
mgaslan@waterboards.ca.gov

**Petition to Reopen Order R8-2012-007
(Huntington Beach Desalination Facility)**

Dear Ms. Gaslan:

Pursuant to California Water Code section 13263 and the newly amended Statewide Water Quality Control Plan for the Ocean Waters of California (“Ocean Plan”), California Coastkeeper Alliance, Orange County Coastkeeper, and Residents for Responsible Desalination (collectively “Petitioners”) petition the Santa Ana Regional Water Quality Control Board (“Regional Board”) to reopen and review Order No. R8-2012-0007, NPDES No. CA8000403 (hereinafter “Order”), which sets forth waste discharge requirements for the Huntington Beach Desalination Facility proposed by Poseidon Resources (Surfside) L.L.C. (“Poseidon”). The Regional Board should reopen the Order based on the recent desalination amendments to the Ocean Plan and the material changes that Poseidon has made to the proposed facility.

BACKGROUND

Some of Petitioners and other organizations previously petitioned the State Water Resources Control Board (“State Board”) to review the Regional Board’s 2012 adoption of the Order on the grounds that it was not consistent with the legal requirements of Water Code section 13142.5(b) and contravened statewide policy on seawater intake. While that appeal was pending before the State Water Board, the California Coastal Commission (“Coastal Commission”) held a hearing on Poseidon’s coastal development permit application on November 13, 2013. At the conclusion of that meeting, the Coastal Commissioners recommended that Poseidon work with Commission staff to study the feasibility of subsurface intakes at the Huntington Beach facility. Poseidon then withdrew its coastal development permit application and began a two-phase study on the technological and economic feasibility of different intake designs.

In the meantime, the State Board adopted the *Amendment to the Statewide Water Quality Control Plan for the Ocean Waters of California Addressing Desalination Intakes, Brine Discharges and Other Nonsubstantive Changes* (hereinafter “Desalination Amendment”) in May 2015. Following that action, the parties challenging the Order withdrew their petition because the Amendment addressed many of their concerns regarding the Huntington Beach facility’s intake technology,

brine discharge, siting, and design, and it made sense to have those issues resolved when Poseidon came back before the Regional Board with a revised project consistent with the procedures and substantive mandates in the Desalination Amendment. (See Letter from State Board responding to Petitioners, Aug. 27, 2015 (explaining that once the Office of Administrative Law approved the Desalination Amendment, Poseidon would need to return to the Regional Board for review and revision of the Order)). In reaction to the State Board's adoption of the Desalination Amendment, Poseidon made material changes to its Huntington Beach project proposal, but to date has not submitted those changes to the Regional Board. Instead, Poseidon presented the changes, which it characterized as modifications required by the Desalination Amendment, to the Coastal Commission when it resubmitted its coastal development permit application on September 2, 2015. The Office of Administrative Law approved the Desalination Amendment on January 28, 2016, giving it the force of law.

The Desalination Amendment represents California's comprehensive effort to develop robust standards for ocean desalination facilities in order to prevent harmful impacts to the marine environment, including impingement and entrainment of marine organisms and discharge of brine waste. The State Board developed it over the course of several years in cooperation with other state agencies to address gaps in the state's regulation of ocean desalination and to bring desalination facilities in line with existing state policies and priorities. With adoption of the *Statewide Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling* in 2010, the State Board effectively began the phase-out of open ocean intakes at coastal power plants in order to end their documented significant impacts on marine resources, as required by both the federal Clean Water Act and California's Porter-Cologne Act. The State Board reinforced this policy in the Desalination Amendment by again disfavoring the use of open ocean intakes for all industrial facilities.

The Desalination Amendment's overarching goal is to ensure careful scrutiny of the siting, design, technology, and mitigation for any proposed ocean desalination facility in order to avoid environmental impacts to the greatest extent possible. The project proponent bears the burden of showing an actual need for the facility, by, for example, pointing to supporting analysis in an Urban Water Management Plan. The project proponent must also justify the project's proposed size and location, which includes providing an analysis of alternative locations with lesser impacts. Tellingly, the 50 million gallon per day production capacity of Poseidon's proposed facility is not tethered to any Urban Water Management Plan, and Orange County Water District's new demand forecasts call into question not only the proposed size of the facility, but the need for the facility at all. Demand was previously estimated to be 525,000 acre-feet per year by 2040. The new demand estimate is 435,000 acre-feet, a reduction of 90,000 acre-feet which more than covers the 56,000 acre-feet of water the Huntington Beach Desalination Facility is projected to provide annually. Given unanswered questions about need, alternative siting options, and the proposed use of an open ocean intake, the Regional Board must reopen and revise the Order.

ANALYSIS

I. Poseidon’s Proposed Huntington Beach Facility Must Meet All of the Desalination Amendment’s Standards Because It Constitutes a “New Facility.”

The Desalination Amendment establishes a number of requirements for “new facilities” that are unquestionably applicable to Poseidon’s Huntington Beach facility. The Desalination Amendment defines “new facilities” as “desalination facilities that are not existing facilities or expanded facilities.” (Ocean Plan Chapter III.M.1.b.(3)). “Existing facilities,” in turn, are defined as “desalination facilities that have been issued an NPDES permit and all building permits and other governmental approvals necessary to commence construction for which the owner or operator has relied in good faith on those previously-issued permits and approvals and commenced construction of the facility beyond site grading prior to [January 28, 2016].” (Ocean Plan Chapter III.M.1.b.(1)). Poseidon’s proposed Huntington Beach facility does not qualify as an “existing facility” because the California Coastal Commission has not yet granted a Coastal Development Permit for the project, and Poseidon has not commenced construction of the facility.¹ Since the proposed Huntington Beach plant meets the definition of a “new facility,” Poseidon must fully comply with the Desalination Amendment.

II. The Regional Board Should Exercise Its Independent Authority to Promptly Reopen Poseidon’s Permit Due to a Change in Law to Ensure Full Compliance with the Desalination Amendment and Enhance Interagency Coordination.

California Water Code section 13263 grants the Regional Board the authority to grant this petition and take the requested action of reopening the Order. Section 13263(e) provides in pertinent part: “Upon application by any affected person, or on its own motion, the regional board may review and revise requirements.” Moreover, the first reopener provision listed in Poseidon’s 2012 NPDES permit provides that the Order granting the permit “may be reopened to address any changes in State or federal adopted rules, policies or regulations that would affect the quality requirements for the discharges.” (NPDES Permit, 27). Additionally, federal NPDES permitting regulations give the Regional Board broad discretionary authority to reopen Poseidon’s permit on its own initiative. (40 CFR 124.5(a) and 40 CFR 122.62).

To ensure that the Desalination Amendment is implemented in a manner that carries out the State Board’s intent – robust analysis of the proposed project and its alternatives to prevent environmental harm – the Regional Board should proactively reopen and revise Poseidon’s NPDES permit, even if Poseidon refuses to apply for an amended permit. As a new facility, Poseidon must submit a request for a Water Code section 13142.5(b) determination to the Regional Board “as early as practicable.” (Ocean Plan Chapter III.M.2.a.(1)). Poseidon’s coastal development permit application already proposes material

¹ “Expanded facilities” are a subset of existing facilities that meet certain additional conditions. Since the Huntington Beach facility does not qualify as an existing facility, it cannot be an expanded facility either.

changes to the project proposal approved in the Regional Board's previous Order. Poseidon characterized those changes as necessary for compliance with the Desalination Amendment. Poseidon's actions provide clear evidence that submitting a revised project proposal to the Regional Board is "practicable" now. Rather than wait for Poseidon to reapply for a new NPDES permit consistent with the requirements imposed by the Desalination Amendment, the Regional Board should exercise its statutory authority to reopen and revise the permit as soon as possible, for the following reasons.

First, given that the Desalination Amendment is a water quality regulation developed by the State Board, the Regional and State Boards together should be the first agencies to interpret and apply the amendment's requirements. Not only do the Regional and State Boards have the requisite water quality expertise, but they also have the best understanding of the meaning and purpose of the amendment's various provisions. If the Regional Board does not step in now, Coastal Commissioners will be forced to interpret and apply the Desalination Amendment's requirements – without the benefit of the Regional Board's input – as they consider Poseidon's coastal development permit application. It is our understanding that the Coastal Commission has tentatively placed Poseidon's coastal development permit application on its May agenda. While the Commission has expertise relevant to the environmental impacts of desalination projects, the Desalination Amendment makes clear that the Regional Board, with consultation from the State Board, is the agency responsible for applying the amendment's requirements by conducting a Water Code section 13142.5(b) analysis. (Ocean Plan Chapter III.M.2.a.(2)). Moreover, the California Coastal Act provides that the Coastal Commission "shall not 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 . . ." (Water Code §30412(b)). But until the Regional Board interprets and applies the Desalination Amendment to the Huntington Beach facility proposal, the Coastal Commission will be unable to determine if the coastal development permit conflicts with the final revised NPDES permit.

Second, allowing the Coastal Commission to grant a coastal development permit based on particular aspects of the project characterized as consistent with the Desalination Amendment, or on provisions in the current NPDES permit, when the Regional Board is likely to alter the NPDES permit to make its 13142.5(b) determination, would be highly inefficient. If the Regional Board does make changes to the project after the coastal development permit has already been granted, the Coastal Commission would then be forced to revise its permit and thus repeat much of the review process. The Regional Board should avoid such inefficient use of government resources by coordinating with the Coastal Commission to ensure the Desalination Amendment is enforced in a timely manner. In fact, the Desalination Amendment requires the Regional Board to consult with other state agencies involved in permitting the proposed facility, which would allow Coastal Commission participation in the Regional Board's decision process. (Ocean Plan Chapter III.M.2.a.(4)). Interagency cooperation will be most effective if the Coastal Commission has not yet granted a coastal development permit, so that the Regional Board can provide guidance on interpreting and applying the Desalination Amendment's new requirements. As discussed in Part III below, Poseidon has proposed several changes to its Huntington Beach facility as part of its

coastal development permit application in anticipation of the Desalination Amendment's passage. But several of those alterations, and the analysis done to support them, still require the Regional Board's scrutiny for consistency with the Desalination Amendment's requirements. For example, the Regional Board must review Poseidon's rejection of a subsurface intake, its claims that the facility is needed, and changes to the facility's discharge rate, intake flow rate, and discharge brine salinity concentrations. Because the Huntington Beach facility will likely be the first project reviewed under the Desalination Amendment, the Regional Board's careful and thoughtful consideration of the new requirements is imperative. The Regional Board should take this opportunity to set a strong precedent by demonstrating that the Desalination Amendment's requirements, and their purpose of averting harm to marine life, must be taken seriously.

III. Poseidon Has Proposed Material Changes to Its Facility that Require Prompt Reopening of the Order and Close Scrutiny for Compliance with the Desalination Amendment.

Not only does prudence require the Regional Board to promptly reopen and review Poseidon's NPDES permit, but the law requires it as well. Reopener Provision (f) of Poseidon's NPDES permit directs that "[t]his Order *will be reopened to address physical or operational alterations to the permitted facility that would affect the requirements for discharges from the facility*" (emphasis added). Unlike the discretionary nature of the other reopener provisions, this provision is mandatory. In anticipation of the Desalination Amendment's implementation, Poseidon has in fact made four physical or operational changes to the design of the Huntington Beach facility described in the 2012 NPDES permit (hereinafter "2012 Design"). Pursuant to Reopener Provision (f), the Regional Board must reopen the permit in order to review those proposed alterations and Poseidon's claims to the Coastal Commission that these changes meet the Desalination Amendment's requirements. Again, it would be highly inefficient for the Coastal Commission to permit development of a facility, with material changes to the project permitted for temporary operation in the NPDES, only to re-open the permit after the development commences.

The changes include constructing one millimeter traveling screens in the intake forebay, adding a multi-point diffuser to the discharge pipe, enhancing the velocity cap, and creating a fish return system. (A2 – Tech. Changes Sup. Analysis, 1). The facility design proposed in Poseidon's 2015 coastal development permit application (hereinafter "2015 Design") reflects these four changes, but the 2010 Final Supplemental Environmental Impact Report ("Supplemental EIR"), which served as the basis for the NPDES permit, does not. (NPDES Permit, 10) (A2 – Tech. Changes Sup. Analysis, 1). In its coastal development permit application, Poseidon recognized that "[t]he operational characteristics of the intake and discharge systems would differ from" the Supplemental EIR "in two distinct ways" because of the new intake screens and the multiport diffuser. (A2 – Tech. Changes Sup. Analysis, 4). By failing to submit a new or revised request for a Water Code 13142.5(b) determination by the Regional Board, Poseidon has denied the Regional Board the opportunity to review these changes to the facility and evaluate whether the 2015 Design meets the Desalination Amendment's requirements. It is especially important that the

Regional Board review the addition of the intake screen and the construction of the multiport diffuser, because those two material changes substantially alter the 2012 Design and implicate the heart of the Desalination Amendment's new regulations. Poseidon is effectively granting themselves the exceptions to the preferred intake and discharge technologies without any consideration or approval by the agency directed to enforce the Desalination Amendment.

A. Poseidon Unilaterally Determined that a Subsurface Intake Was Infeasible and Proposes to Construct Traveling Screens in the Intake Forebay.

In its coastal development permit application, Poseidon altered the facility's proposed intake system from the 2012 Design by adding traveling intake screens. Poseidon previously planned to use the AES Huntington Beach Generating Station's ("the Power Plant") existing, unscreened, open ocean intake system both when the Power Plant was online and when it was temporarily offline. (NPDES Permit, 7). Recognizing the harmful impacts of unscreened open ocean intakes, the Desalination Amendment outlawed their use. The Desalination Amendment, instead, requires subsurface intake systems absent a showing of infeasibility.

Left unchanged, the 2012 Design's unscreened open ocean intake violates the Desalination Amendment. In its coastal development permit application, Poseidon attempted to remedy this violation by constructing one millimeter traveling screens in the intake forebay. (CC App., 4-5) (See also Attachment 3 – Screen System, 1). By bypassing the Regional Board and applying to the Coastal Commission first, Poseidon denied the Regional Board the chance to evaluate the preferred technology under the Desalination Amendment – a subsurface intake. Poseidon did not present any feasibility studies to the Regional Board. Nor did Poseidon present any research on geotechnical data, hydrology, benthic topography, oceanographic conditions, absence of sensitive habitats or species, design constraints, or life cycle costs to demonstrate to the Regional Board that a subsurface intake would be infeasible. (See Ocean Plan Chapter III.M.2.d.(1)(a)i.). Instead, Poseidon developed a feasibility study before the requirements of the Desalination Amendment were adopted and is presenting the study to the Coastal Commission rather than the Regional Board as required.

B. Poseidon's New Design Uses a Different Discharge Method, Which Requires a New Discharge Volume and Salinity Standards.

Poseidon also redesigned its discharge system, substituting a new multiport diffuser for the Power Plant's existing outfall. The 2012 Design entailed discharging brine through the Power Plant's existing outfall structure (NPDES Permit, 6) and diluting it using an obsolete technique – flow augmentation (A2 – Tech. Changes Sup. Analysis, 6). Since flow augmentation severely increases impingement and entrainment, the Desalination Amendment prohibits using flow augmentation as a discharge method. (Ocean Plan Final Report, 53). Thus, the Supplemental EIR and the Order relied on a design that the law no longer permits.

Poseidon's 2015 Design includes a multiport diffuser, which the Regional Board has not had to the opportunity to, but must, review to determine how it will impact discharge

rates, intake flow requirements, and brine salinity concentrations. (A2 – Tech. Changes Sup. Analysis, 5). First, the Regional Board must review how the new design will affect discharge rates. The Order limited the discharge rate to a yearly average flow of 56.59 million gallons per day (“MGD”) or a maximum daily flow of 60.3 MGD. (NPDES permit (16)). In light of Poseidon’s proposal to no longer use flow augmentation, the Regional Board must decide whether to adjust the discharge rates based on the new multiport diffuser’s dilution capabilities.

Second, because the intake flow is related to the discharge salinity, adding the new multiport diffuser will also affect intake flow requirements. In the Order, the Regional Board struck a balance between permitting the 2012 Design to take in enough water “[t]o prevent salinity-related impacts,” and keeping Poseidon from taking in excess water to prevent unnecessary impingement and entrainment. (NPDES permit, 12). Balancing those two competing concerns, the Regional Board decided to limit outflow to “at or less than 44.7 percent of the total intake flow.” (NPDES permit, 12). The 2015 Design has an intake flow of 106 MGD, which would allow the facility to discharge around 47 MGD under the Order. (A2 – Tech. Changes Sup. Analysis, 6). But Poseidon’s 2015 Design does not reduce the outflow and will discharge 56 MGD of waste brine, violating the Order’s mandate. (A2 – Tech. Changes Sup. Analysis, 5). Poseidon may argue that the 44.7 percent line is no longer the right balance given that the 2015 Design will use a multiport diffuser rather than flow augmentation, but that argument misses the point. The Regional Board needs to revisit this question and make a new determination; therefore, Poseidon should have brought this issue back before the agency. Fortunately, the Regional Board can reopen the Order and make that determination on its own without waiting for Poseidon to reapply.

Third, the Regional Board must update the Order’s salinity standards to reflect the Desalination Amendment’s stricter standards and ensure that the new diffuser can meet those standards. The Order approved the 2012 Design’s discharge of brine with a salinity concentration of 55.4 parts per thousand (“ppt”). (NDPES Permit, 191). Under the Desalination Amendment, Poseidon could only discharge brine with a much lower salinity concentration, no more than 2 ppt above the ambient salinity concentration of 33.5 ppt. (CC App., 5). The 2012 Design does not meet the Desalination Amendment’s stricter standards. By emitting 55.4 ppt, the 2012 Design would discharge nearly 20 ppt more than the Desalination Amendment permits. (NDPES Permit, 191). In the 2015 Design, the effluent’s salinity concentration will be 63.1 ppt. (A1 – HBDP Intake/Discharge Description, 22; see also A2 – Tech. Changes Sup. Analysis, 5 and Attachment 8, 2). To reduce the salinity concentration from 63.1 ppt to the required 35.5 ppt, Poseidon proposes that “781 MGD of dilution water would be entrained.” (A1 – HBDP Intake/Discharge Description, 22). The Regional Board must make sure, first, that this dilution method is consistent with the Ocean Plan, and second, that Poseidon’s proposed adjustment will, in fact, reduce the salinity concentration more than 27 ppt to meet the 35.3 ppt requirement.

CONCLUSION

In light of both the Office of Administrative Law's approval of the Desalination Amendment and the material changes reflected in the 2015 Design, the Regional Board should reopen the Order and revisit Poseidon's NPDES permit. By exercising the reopener provision in the Order, the Regional Board can use its discretionary authority to ensure proper implementation and interpretation of the Desalination Amendment before resources at the Coastal Commission are spent reviewing material changes to the project that have yet to be considered by the Regional Board. Reopening the permit is critical to carrying out the State Board's purpose in adopting the Desalination Amendment – protecting California's marine life and promoting interagency coordination.

We appreciate your timely consideration of this petition and look forward to hearing from you.

Sincerely yours,



Elizabeth M. Vissers, Certified Law Student
John M. Ugai, Certified Law Student
Deborah A. Sivas, Supervising Attorney

Cc: Sean Bothwell, California Coastkeeper Alliance
sbothwell@cacoastkeeper.org
Garry Brown, Orange County Coastkeeper
garry@coastkeeper.org
Joe Geever, obo Residents for Responsible Desalination
geeverjoe@gmail.com