

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

EXECUTIVE OFFICER SUMMARY REPORT

May 8, 2019

ITEM 10

SUBJECT

Public Hearing to Consider NPDES Permit Reissuance and Water Code Section 13142.5(b) Determination: *Waste Discharge Requirements for the Poseidon Resources (Channelside) LP, Claude "Bud" Lewis Carlsbad Desalination Plant Discharge to the Pacific Ocean* (Tentative Order No. R9-2019-0003, NPDES No. CA0109223). (*Ben Neill*)

STAFF RECOMMENDATION

Adoption of Revised Tentative Order No. R9-2019-0003 (Tentative Order, **Supporting Document No. 1**) is recommended.

KEY ISSUES

1. The Carlsbad Desalination Plant (Facility) began operations in December 2015 co-located with the Encina Power Station (EPS). Poseidon Resources (Channelside) LP (Poseidon or Discharger) owns and operates the Facility under a National Pollutant Discharge Elimination System (NPDES) Permit, Order No. R9-2006-0065 and a 2009 California Water Code section 13142.5(b)¹ determination (Water Code Determination) for co-located operations with EPS and temporary stand-alone operations during periods when the EPS is not in operation. As a result of EPS decommissioning, a reissued NPDES permit and a new Water Code Determination are required for permanent stand-alone operations of the Facility.
2. The Tentative Order includes a new Water Code Determination (Tentative Determination) that the stand-alone operation of the Facility uses the best available site, design, technology, and mitigation measures feasible to minimize the intake and mortality of all forms of marine life. The Tentative Determination concludes that wastewater dilution as a brine discharge technology is unavailable and conditionally concludes that intake and mortality levels associated with flow augmentation brine discharge technology² are comparable to levels associated with use of a multiport diffuser³ in accordance with chapter III.M.2.d.(2)(c) of the *Water Quality Control Plan for Ocean Waters of California (Ocean Plan)*.
3. The Tentative Determination is conditional on the expectation that Poseidon's completion of the Multiport Diffuser Analysis described in section VI.C.2.a. of the Tentative Order, requiring the collection of additional scientifically appropriate data, will confirm the conclusion that flow augmentation and a multiport diffuser are comparable in intake and mortality of all forms of marine life in accordance with chapter III.M2.d.(2)(c) of the Ocean

¹ California Water Code section 13142.5(b), adopted as part of the California Coastal Act of 1976, requires that any "new or expanded coastal power plant or other industrial installation using seawater for cooling, heating or industrial processing" must utilize "the best available site, design, technology and mitigation measures feasible . . . to minimize the intake and mortality of all forms of marine life."

² Flow Augmentation is defined in Attachment A of the Tentative Order as "A type of in-plant dilution that occurs when a desalination facility withdraws additional source water for the specific purpose of diluting brine prior to discharge."

³ Multiport Diffusers are defined in Attachment A of the Tentative Order as "Linear structures consisting of spaced ports or nozzles that are installed on submerged marine outfalls and enable rapid mixing, dispersal, and dilution of brine within a relatively small area."

Plan. (See Finding II.D of the Tentative Order and Finding 31 in Attachment H.1 of the Tentative Order for discussion of the conditional determination.)

4. The Tentative Order, if adopted, will require construction of a new source water intake structure within Agua Hedionda Lagoon to comply with the requirements of the Tentative Determination and the Ocean Plan. Pursuant to chapter III.M.2.a(5)(b) of the Ocean Plan, the Tentative Order includes a compliance schedule of approximately 4.5 years to complete design and construction, commence operation of the new source water intake structure and achieve full Ocean Plan compliance no later than December 11, 2023.
5. The Tentative Order, if adopted, will require Poseidon to perform a Brine Discharge Technology Empirical Study to assess the intake and mortality of all forms of marine life associated with the flow augmentation brine discharge technology. The Empirical Study must be performed within 18 months of beginning operation of the new source water intake structure. Because the Tentative Order proposes a compliance schedule of approximately 4.5 years, the Brine Discharge Technology Empirical Study will not be completed until the 2024-2025 time frame. As specified in the Ocean Plan, chapter III.M.2.d.(2)(c)v, if the Brine Discharge Technology Empirical Study shows that flow augmentation results in *more* intake and mortality of marine life than use of a multiport diffuser, Poseidon must either cease using flow augmentation brine discharge technology or re-design the discharge technology to comply with the Tentative Order and the Ocean Plan.
6. The Tentative Order provides a reopener provision in section VI.C.1.a, to allow modification of provisions governing compliance with Water Code section 13142.5(b) and the Ocean Plan in the event that a new Water Code Determination is required consistent with Ocean Plan chapter III.M.2.a.(5) or if Poseidon proposes a change in design or operation of the Facility in a manner that could increase intake or mortality of all forms of marine life beyond that which is approved in the Tentative Determination. A future event that would require a new Water code determination includes a finding that the required Multiport Diffuser Analysis described in section VI.C.2.a of the Tentative Order fails to confirm that flow augmentation and multiport diffuser brine discharge technologies are comparable in intake and mortality to all forms of marine life at the Facility. If a new Water Code Determination for the Facility is required, the Ocean Plan authorizes the Board to allow the Discharger up to five years from the date of the event requiring modifications to the Facility to be made to comply with the new Water Code Determination provided certain findings are made. The scope of a new Water Code Determination may also be limited, consistent with Ocean Plan requirements.

PRACTICAL VISION

Consistent with the mission of the *Strategy for Healthy Waters* chapter of the Practical Vision, the Tentative Order integrates all applicable technology-based requirements, water quality-based effluent limitations, and receiving water standards in order to optimize protection of water quality and beneficial uses. Additionally, the Tentative Order has provisions allowing for participation in regional monitoring and assessment programs in keeping with the San Diego Water Board Resolution No. R9-2012-0069, *Resolution in Support of a Regional Monitoring Framework*. Finally, the Tentative Order is consistent with the aspirational goals of the *Sustainable Local Water Supply* chapter of the Practical Vision. The Tentative Order proposes to advance ocean water as a relatively new source of drinking water for the San Diego Region while balancing the need to protect water quality and all forms of marine life. The Facility regulated under the Tentative Order is a major component of the San Diego County Water Authority's (SDCWA) strategy to diversify the San Diego regional water supply portfolio and lessen reliance on imported water for drinking water supplies.

DISCUSSION

Background Factual Information

Poseidon contracts with IDE Technologies to operate and maintain the Facility. The Facility desalinates seawater that enters the Facility through an intake from the tidally influenced Agua Hedionda Lagoon to produce up to 60 million gallons per day (MGD) of potable water to augment public water supplies through the SDCWA distribution system. As currently permitted, the Facility discharges up to a maximum 60.3 MGD of reverse osmosis concentrate and filter backwash which is then diluted with additional seawater in a mixing pond, prior to discharging through an existing channel to the surf zone of the Pacific Ocean. The Facility is located on the EPS site on the shores of Agua Hedionda Lagoon in the City of Carlsbad (City), California between the Interstate 5 (I-5) and the Pacific Ocean as shown in **Supporting Document No. 2**.

The Facility began desalination operations in December 2015 and is producing up to 56,000 acre-feet per year (equivalent to 50 MGD average flow) of desalinated potable water. Until December 11, 2018, the Facility operated in co-location with the EPS by using the power plant's cooling water discharge as the Facility's source water for desalination. Under co-location, EPS shared its intake and discharge infrastructure with the co-located Facility. During temporary periods when power generation was suspended at EPS, EPS thru-flows were adequate to supply the Facility with source water for desalination and dilution seawater for meeting the receiving water salinity standard. The EPS terminated power generation operations on December 11, 2018 and since that time has continued to operate its circulating water pumps to supply source seawater to the Facility from Agua Hedionda Lagoon for both potable water production and brine dilution.

The Facility is currently regulated by Order No. R9-2006-0065, NPDES No. CA0109223, as amended by Order No. R9-2009-0038 and Order No. R9-2010-0073 (referred to collectively as Current Order or Current NPDES Permit). The Current Order regulates the Facility's co-located operations and temporary stand-alone operations with the EPS. The Current Order also incorporates the 2009 Water Code Determination for the co-located operations and temporary stand-alone operations referenced above. The retirement of the EPS at the end of 2018 requires the Facility to transition to permanent stand-alone operation in compliance with the Ocean Plan. A new Water Code Determination is required for permanent stand-alone operation of the Facility.

As required by the Current Order, Poseidon applied for NPDES permit reissuance by submittal of a Report of Waste Discharge (ROWD) on March 29, 2011. The reissuance of the NPDES permit was informally held in abeyance pending development by the State Water Resources Control Board (State Water Board) of an amendment to the Ocean Plan that addresses water quality effects and impacts on marine life associated with the construction and operation of seawater desalination facilities (Desalination Amendment). On May 6, 2015, the State Water Board adopted the [Desalination Amendment](#) set forth in chapter III.M of the Ocean Plan establishing a uniform Statewide approach regarding the Water Code Determination for the evaluation of the best available site, design, technology, and mitigation measures feasible to minimize the intake and mortality of all forms of marine life at new or expanded desalination facilities. The Ocean Plan incorporates the provisions of the Desalination Amendment.

Under permanent stand-alone operations the Facility is classified as an expanded facility pursuant to the Ocean Plan and therefore a new Water Code Determination is required. Accordingly, Poseidon filed an amended permit application including an amended ROWD and a request for a Water Code Determination for permanent stand-alone operations on September 4, 2015 (2015 ROWD). The San Diego Water Board deemed the 2015 ROWD to be complete for purposes of preparing tentative Waste Discharge Requirements and an NPDES permit on October 5, 2015. Poseidon provided supplemental information necessary to inform the San Diego Water Board's Water Code Determination on multiple occasions between August 18, 2016 and December 18,

2018. The supplemental ROWD Appendices A through HHH comprise 60 separate documents that may be accessed on the San Diego Water website through links provided in Attachment H.1 of the Tentative Order.

The Tentative Determination is contained in Attachments H.1 and H.2 of the Tentative Order. The San Diego Water Board developed the Tentative Determination by evaluating a range of feasible alternatives separately for each of the following: the best available site, design, technology, and mitigation measures to minimize intake and mortality of all forms of marine life. The San Diego Water Board then determined the best combination of feasible alternatives to minimize intake and mortality of all forms of marine life. Poseidon provided information to the San Diego Water Board for the evaluation of twenty-one (21) different intake and outfall design combinations, referred to as Design Alternatives in the ROWD. Based on the information provided by Poseidon, the San Diego Water Board determined that Design Alternative 21 provides the best available site, design, technology, and mitigation measures feasible to minimize the intake and mortality of all forms of marine life while considering feasibility constraints such as construction, operation, and maintenance costs. Design Alternative 21 proposes to retain the existing discharge configuration that conveys flow augmentation water to the dilution pond to dilute the brine and then through the surface channel to the Pacific Ocean. Design Alternative 21 also proposes to construct a new intake structure within Agua Hedionda Lagoon that is more protective of marine life than the current intake structure. A compliance schedule of approximately 4.5 years for the construction and operation of the new source water intake structure is provided in section VI.C.7 of the Tentative Order.

Scientific Advisory Panel – Neutral Third-Party Opinion

Pursuant to chapter III.M.2.a(1) of the Ocean Plan, the San Diego Water Board directed Poseidon to fund a previously convened independent Science Advisory Panel (SAP)⁴ to provide scientifically justified assessment and recommendations to the San Diego Water Board on various aspects of the analysis conducted by the Board in developing the Tentative Determination. The SAP reviewed topics regarding the biological performance standard for mitigation; mitigating for mortality to all forms of marine life; and comparing the intake and mortality of all forms of marine life associated with various intake screen locations. The Tentative Determination incorporates the SAP recommendations which are summarized in Attachment H.1 of the Tentative Order at Page H.1-4.

California Environmental Quality Act

The Tentative Determination set forth in Attachments H.1 and H.2 of the Tentative Order is a discretionary action by the San Diego Water Board subject to compliance with the California Environmental Quality Act (CEQA). As referenced in Finding II.F of the Tentative Order, the Facility was previously analyzed under CEQA in the Carlsbad Precise Development Plan and Desalination Plant Final Environmental Impact Report (FEIR) for the Facility, which was certified by the City on June 13, 2006 and a Supplement to the FEIR (Supplemental EIR) prepared and adopted by the SDCWA on August 25, 2016. Since certification of the Supplemental EIR, the SDCWA finalized a sixth addendum to the Final EIR in February 2019 that addresses Design Alternative 21. The San Diego Water Board independently considered the environmental effects of the project in the FEIR, the Supplemental EIR, and the addendums. Appendix KK to the ROWD includes the FEIR and is available on the San Diego Water Board's website at: https://www.waterboards.ca.gov/sandiego/water_issues/programs/regulatory/carlsbad_desalination

⁴ The SAP was previously convened by the California Coastal Commission to advise on the Facility and mitigation. The SAP consists of three independent scientists with expertise in coastal biology, ecology and hydrodynamics. The SAP is comprised of Dr. Pete Raimondi, professor and chair of the Department of Ecology and Evolutionary Biology at the University of California (UC) Santa Cruz; Dr. Richard Ambrose, professor in the Department of Environmental Health Sciences at UC Los Angeles; and Dr. Brett Sanders, professor in the Department of Civil and Environmental Engineering at UC Irvine.

[n_appendices.html](#). The sixth addendum to the Final EIR is available on the San Diego Water Board's website at: https://www.waterboards.ca.gov/sandiego/water_issues/programs/regulatory/docs/Carlsbad_Desalination_6th_Addendum_3-7-19_FINAL_SENT.pdf. Other environmental documents are also in the public files for this Facility.

Public Notification and Comments on Tentative Order

The Tentative Order and Tentative Determination were noticed and released for public review and comment for a 38-day period on December 21, 2018. The comment period closed on January 28, 2019. The Discharger (Poseidon), the California Coastal Commission, SDCWA, the Coastal Environmental Rights Foundation, the Surfrider Foundation with the Orange County Coastkeeper, and NRG, Cabrillo Power LLC submitted comments (**Supporting Document No. 3**). Two comment letters were submitted after the close of the public comment period. On February 20, 2019 the Surfrider Foundation and the Orange County Coastkeeper submitted an additional comment letter, and on March 21, 2019 the SDCWA submitted an additional comment letter. These two comment letters are provided in Supporting Document No. 3.⁵ The Response to Comments Report (**Supporting Document No. 4**) includes detailed responses to the comments received, including the late comments, and actions taken to modify the Tentative Order and Tentative Determination in response to comments.

The following is a summary of the most significant comments and the responses to those comments:

1. *Poseidon requested that flow limitations in the Tentative Order be modified to provide greater flexibility for Facility operations.*

Poseidon's comment on this issue is summarized and responded to in Comment No. 1 of the Response to Comments Report. The San Diego Water Board evaluated the requested modifications for the flow limitations and agreed that the requested changes are unlikely to result in a decrease in receiving water quality. The San Diego Water Board modified the Tentative Order in section III.D Table 4; section VII.C; Attachment A; Attachment E, Table E-3, footnote 4; and Attachment F, section I, Table F-1 as requested by Poseidon.

2. *Poseidon requested that the Tentative Determination be modified to specify the marine life impacts from a theoretical multiport diffuser in a specific metric, acreage of production foregone, so that the results of the Brine Discharge Technology Empirical Study can be compared to that metric once the study has been completed. Poseidon asserts that leaving open the determination of the Empirical Transport Model (ETM)/Area of Production Foregone (APF) (ETM/APF) calculation for the hypothetical multiport diffuser until after the flow augmentation discharge technology is constructed and operating places an \$80 million investment in intake and discharge improvements at risk of having to be replaced shortly after being placed in service.*

Poseidon's comment on this issue is summarized and responded to in Comment No. 2 in the Response to Comments Report. Neither the San Diego Water Board nor Poseidon has the appropriate information at this time to accurately calculate the marine life impacts from a theoretical multiport diffuser in acreage of production foregone as a basis for the metric requested by Poseidon. Instead, the Tentative Order specifies the volume of water that would be entrained by a theoretical multiport diffuser. Entrained volume refers to the amount of water that is subject to high turbulence intensities and shear stresses from

⁵ The San Diego Water Board Chair has concluded that acceptance of these communications into the record for this matter will not prejudice any party or the Board because there is ample time for their review and parties and interested persons can comment on them during the public hearing.

multiport diffusers that would lead to discharge related mortality of marine life. Poseidon disagrees with this approach for establishing the requested metric for comparing the results of the *Brine Discharge Technology Empirical Study*.

In reviewing this issue it is important to first understand that the Ocean Plan establishes wastewater dilution, if available, followed by multiport diffusers, as the preferred brine discharge technologies. (See Ocean Plan chapter III.M.2.d.(2)(c).) Use of flow augmentation is allowed only for this Facility (or in other limited circumstances not applicable here), subject to the demonstration that flow augmentation provides a comparable level of intake and mortality of all forms of marine life to wastewater dilution, if available, or multiport diffusers if wastewater dilution is unavailable. Even after comparability of an alternative brine discharge technology such as flow augmentation is demonstrated, a subsequent, post-operational comparison of the intake and mortality of all forms of marine life through an empirical study is required to allow continued use of flow augmentation technology. Poseidon is not required to choose flow augmentation technology as an alternative to the Ocean Plan's established brine discharge technology preferences, neither of which is subject to the risk of later comparison to actual or estimated intake and mortality levels.

Poseidon recognizes that the Ocean Plan requires a subsequent comparison of intake and mortality of all forms of marine life from flow augmentation (as determined through the Brine Discharge Technology Empirical Study or flow augmentation empirical study) and from a theoretical multiport diffuser. However, Poseidon's proposed data source for establishing the multiport diffuser impacts as the benchmark for the subsequent comparison to flow augmentation is scientifically deficient. Poseidon proposes to use the EPS impingement mortality and entrainment characterization study (Tenera 2008 cited in Finding 19 of Attachment H.1) as the primary larval-entrainment data source for establishing the benchmark to compare intake and marine life mortality impacts from a theoretical multiport diffuser and flow augmentation. As explained in revised Finding 31 of Attachment H.1, the entrainment calculations in Tenera 2008 lack scientifically appropriate data to set the benchmark for use in the comparison. The collection of additional, scientifically appropriate data on larval lengths collected in an open ocean coastal location approximating the location of a theoretical multiport diffuser is necessary to address the data shortfall. Collection of this additional data will enable scientifically defensible determinations that better estimate the intake and mortality from a multiport diffuser to support both the comparability determination (the conditional aspect of the Tentative Determination, explained below) and for the subsequent post-operational comparison in the flow augmentation empirical study.

Based on these considerations the San Diego Water Board modified the Tentative Order in section VI.C.2.a.; Attachment F, section VI.B.2.a; and Attachment H.1, Finding 31 to require Poseidon to collect the scientific data needed to calculate the acreage of production forgone for incorporation in a Multiport Diffuser Analysis within two years of the effective date of the Tentative Order. The revised Tentative Order provides that the Multiport Diffuser Analysis will be used for two purposes to:

- a. Confirm the San Diego Water Board's conditional conclusion that flow augmentation is "comparable" to a multiport diffuser in intake and mortality of all forms of marine life at this Facility, as required by Ocean Plan chapter III.M.2.d(2)(c); and
- b. Establish the intake and mortality of all forms of marine life for a multiport diffuser for purposes of the comparison to the flow augmentation empirical study, as required in Ocean Plan chapter III.M.2.d.(2)(c)v.

Under this approach the Tentative Order requires the Discharger to complete the Multiport Diffuser Analysis within two years of the Order's effective date to provide additional scientific data needed for the San Diego Water Board's consideration. If the Analysis confirms the San Diego Water Board's conclusion that flow augmentation and a multiport diffuser provide comparable intake and mortality of all forms of marine life for purposes of Ocean Plan chapter III.M.2.d.(2)(c), the condition placed on the conclusion will have no further effect. The results of the Multiport Diffuser Analysis will then establish the level of intake and mortality of all forms of marine life for a multiport diffuser as a benchmark for purposes of the comparison to the flow augmentation empirical study as required in Ocean Plan chapter III.M.2.d.(2)(c)v. This will provide Poseidon with the benchmark or metric it is seeking for comparison to the flow augmentation empirical study by the May 2021 time frame while it is still in the early design phases for the new intake structure. If the condition is not met, a new Water Code Determination will be required to support selection of the appropriate brine discharge technology for the Facility.

3. *Poseidon requested that the Tentative Order be modified to specify the causes for reopening the Tentative Determination. Poseidon requested acknowledgment that a potential reason the Discharger may request to modify provisions governing compliance with Water Code section 13142.5(b) and the Ocean Plan is that the Discharger's pilot test failed to confirm the expected performance and reliability of the wedgewire screens as the intake screening technology for the Facility.*

Poseidon's comment on this issue is summarized and responded to in Comment No. 9 of the Response to Comments Report. The Tentative Determination, once adopted, may not be reopened except under specific circumstances. However, the San Diego Water Board modified the applicable reopener provision in section VI.C.1 of the Tentative Order to provide that the Order may be reopened to modify provisions governing compliance with Water Code section 13142.5(b) and the Ocean Plan if a new Water Code determination is required consistent with Ocean Plan chapter III.M.2.a.(5) or if the Discharger proposes a change in design or operation of the Facility in a manner that could increase the intake or mortality of all forms of marine life, consistent with the Ocean Plan definition of an expanded facility, beyond that which is approved in the Tentative Determination. Such a proposed change will require a new Water Code section 13142.5(b) determination for an expanded facility as required by the Ocean Plan chapter III.M.1.b.(3). The revised reopener provision would allow Poseidon to seek a new Water Code section 13142.5(b) determination if, based upon the results of its pilot scale intake project, it proposes a change to its facility design or operation that could increase intake or mortality of all forms of marine life beyond that approved in this Tentative Order.

The California Coastal Commission requested additional mitigation to compensate for the increased seawater intake flowrate of the existing intake pumps until the new intake pumps are operational.

The Coastal Commission's comment on this issue is summarized and responded to in Comment No. 15 of the Response to Comments Report. The Tentative Order in Attachment H.1, Finding 42 specifies a total mitigation acreage of 68.3 acres of wetland habitat to compensate for the Facility's impacts to marine life based on an intake flowrate of 299 MGD. However, until Poseidon constructs and operates new intake pumps, Poseidon will rely on the existing EPS pumps that have a minimum flowrate capacity of 330 MGD. The additional 31 MGD was not contemplated in the mitigation acreage calculation provided in Attachment H.1, Finding 42.

The San Diego Water Board agrees with Coastal Commission's comment that Poseidon must provide appropriate mitigation for marine life impacts attributable to the interim

operations of the existing intake pumps at an allowable rate of 330 MGD. The San Diego Water Board modified the Tentative Order in section VI.C.2.c.i.(f) to require Poseidon to mitigate for the increased intake flowrate during the interim period until the new intake pumps are operational. The San Diego Water Board also modified Attachment H.1, Finding 53 to acknowledge the increased seawater intake flowrate during interim operations and that Poseidon would be required to mitigate for the additional impacts from the additional intake of seawater during the interim operations period.

The Revised Tentative Order (**Supporting Document No. 1**) displays the changes made after the December 21, 2018 public release in red-underline for added text and ~~red-strikeout~~ for deleted text.

SIGNIFICANT CHANGES

The following are the significant differences between the Tentative Order (**Supporting Document No. 1**) and the Current Order:

1. The Tentative Order in section III.D increases the permitted discharge flowrate of combined reverse osmosis concentrate and media filtration backwash from a daily maximum of 60.3 MGD to 67 MGD.
2. Based upon an analysis of the discharge's potential to cause or contribute to an exceedance of applicable water quality standards (a reasonable potential analysis), the Tentative Order at section IV.A.1 includes an effluent limitation for the discharge of tetra chlorinated dibenzodioxins and tetra chlorinated dibenzofurans (TCDD equivalents).
3. The Tentative Order requires the Discharger to evaluate the chronic toxicity in the discharge using the United States Environmental Protection Agency's (USEPA's) 2010 Test of Significant Toxicity (TST) hypotheses testing approach at the discharge "in-stream" waste concentration (IWC), as described in the Tentative Order, Attachment E, section III.C. Monitoring for chronic toxicity is required at Monitoring Locations M-001 and M-002.
4. The Tentative Order includes a Tentative Determination for the Facility's stand-alone operations. To implement the Tentative Determination, the Tentative Order includes the following changes:
 - a. The Tentative Order at section IV.C includes intake specifications limiting the intake of seawater to 330 MGD with the existing intake pumps and 299 MGD with the new intake pumps. The intake specifications also require minimum measures to minimize the intake and mortality of all forms of marine life.
 - b. The Tentative Order at section VI.C.2.a requires the Discharger to complete a Multiport Diffuser Analysis requiring the collection of additional data to 1) confirm the conclusion that flow augmentation and a multiport diffuser provide comparable levels of in intake and mortality of all forms of marine life in accordance with the Ocean Plan and 2) establish the mortality of all forms of marine life for a multiport diffuser for purposes of the comparison to flow augmentation in the Brine Discharge Technology Empirical Study.
 - c. The Tentative Order at section VI.C.2.b requires the Discharger to conduct a Brine Discharge Technology Empirical Study to assess the intake and mortality of all forms of marine life associated with the flow-augmentation choice of brine discharge technology.
 - d. The Tentative Order at section VI.C.2.c requires the Discharger to update the

Marine Life Mitigation Plan to provide for up to 68.3 acres of mitigation that offsets impacts to marine life caused by the construction and operation of the Facility.

- e. The Tentative Order at section VI.C.7 includes a compliance schedule providing the Discharger with approximately 4.5 years to finalize design and construct an improved intake structure in Agua Hedionda Lagoon that will minimize the intake and mortality of all forms of marine life. The new intake structure will include 1-millimeter slot size wedgewire screens and a 0.5 foot per second through-screen velocity at the onset of source water intake.
5. The Tentative Order at section VI.C.2.e requires the Discharger to develop a Climate Change Action Plan to address causes and impacts due to climate change. The Climate Change Action Plan implements San Diego Water Board Resolution No. R9-2018-0051 *Addressing Threats to Beneficial Uses from Climate Change*.
6. The Tentative Order requires the Discharger to participate in the Southern California Bight Regional Monitoring Program coordinated by the Southern California Coastal Water Research Project. Implementation of this requirement would be subject to consultation between the San Diego Water Board and the Discharger.

COMPLIANCE RECORD

According to the Discharger's self-monitoring reports, there were 86 non-compliance incidents between beginning operations in September 2015 and December 2018. These noncompliance incidents are generally classified as follows:

- 2 unauthorized discharges,
- 11 deficient monitoring violations,
- 9 deficient reporting violations,
- 1 receiving water limitation exceedance,
- 1 exceedance of the total suspended solids effluent limitation, and
- 62 exceedances of the chronic toxicity effluent limitation (routine and accelerated monitoring).

Notice of Violation No. R9-2016-0112 was issued on April 7, 2016, and staff enforcement letters were sent on December 9, 2016 and January 28, 2019, requiring that steps be taken to correct and prevent the recurrence of such violations. The Discharger has taken corrective actions to address these violations.

PUBLIC NOTICE

The Tentative Order and Tentative Determination were noticed and released for public review and comment on December 21, 2018, with comments due January 28, 2019. The San Diego Water Board published a Notice of Public Hearing in the San Diego Union Tribune and the Orange County Register on December 21, 2018, which announced a March 13, 2019 public hearing and availability of the Tentative Order and Tentative Determination and provided instructions on submittal of comments on the Tentative Order and Tentative Determination. The March 13, 2019 public hearing was postponed and rescheduled for the May 8, 2019 San Diego Water Board meeting. On April 5, 2019, notice of the May public hearing was emailed to all interested parties and posted on the San Diego Water Board website. Notice of the May public hearing on the Tentative Order and Tentative Determination was also provided in the Meeting Notice and Agenda for the May 8, 2019 San Diego Water Board meeting, which was posted on the San Diego Water Board website. Notice of the availability of the Tentative Order and Tentative Determination for public review and comment was sent to all known interested parties by email on December 21,

2018 and posted on the San Diego Water Board website. A copy of the public notice is provided in **Supporting Document No. 5.**

SUPPORTING DOCUMENTS

1. Revised Tentative Order No. R9-2019-0003
2. Location Map
3. Comment letters, dated January 28, 2019:
 - a. Poseidon Resources (Channelside) LP
 - b. California Coastal Commission
 - c. San Diego County Water Authority
 - d. Coastal Environmental Rights Foundation
 - e. Surfrider Foundation and Orange County Coastkeeper
 - f. NRG, Cabrillo Power LLC
 - g. Supplemental late comments from Surfrider Foundation and Orange County Coastkeeper received on February 20, 2019
 - h. Supplemental late comments from the San Diego County Water Authority received on March 21, 2019
4. Response to Comment Report
5. Notice of Public Hearing and Comment Period