

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

**EXECUTIVE OFFICER SUMMARY REPORT
September 13, 2023**

ITEM 5

SUBJECT

NPDES Permit Amendment: An addendum proposing to amend the National Pollutant Discharge Elimination System (NPDES) Permit for the Poseidon Claude “Bud” Lewis Carlsbad Desalination Plant (Tentative Order No. R9-2023-0137, Addendum No. 1 to Order No. R9-2019-0003, NPDES No. CA0109223) (*Fisayo Osibodu*).

STAFF RECOMMENDATION

Adoption of the Tentative Order No. R9-2023-0137, Addendum No. 1 to Order No. R9-2019-0003 is recommended (Tentative Order; **Supporting Document No. 1**).

KEY ISSUES

The State Water Resources Control Board (State Water Board) Executive Director issued a temporary conditional waiver of the application of certain provisions of the *Water Quality Control Plan Ocean Waters of California* (Ocean Plan) (Conditional Waiver) to Poseidon Resources (Channelside) LP (Discharger or Poseidon). The Tentative Order implements the Conditional Waiver to enable the Claude “Bud” Lewis Carlsbad Desalination Plant (Facility) to continue to operate as a critical water supply source.

PRACTICAL VISION

Chapter 6 of the San Diego Water Board Practical Vision, *Strategize to Achieve Resilient Local Water Supply*,¹ identifies efficiently permitting desalination projects that minimize impacts to aquatic habitats through protective intake and brine discharge measures as one of the approaches for achieving a resilient local water supply. Seawater desalination also plays a key role in the maintaining a diverse water supply portfolio for the San Diego Region as it reduces the Region’s dependence on imported water supplies that may be vulnerable to droughts, natural disasters, and regulatory restrictions. Adoption of the Tentative Order is consistent with the Practical Vision because it would enable the Facility to continue to operate as a critical water supply source.

DISCUSSION

Poseidon Resources (Channelside) LP (Discharger) owns and operates the Facility. The Facility is located in the City of Carlsbad on the shores of the Agua Hedionda Lagoon. (See **Supporting Document No. 2.**) The Facility treats seawater to produce up to 54 million gallons per day of potable water for the San Diego County Water Authority (Water Authority). The Facility is currently regulated under NPDES Permit Order No. R9-2019-0003, which establishes requirements for the discharge of reverse osmosis concentrate (brine), filter backwash, and bypassed seawater to the Pacific Ocean. The Tentative Order

¹ Practical Vision:

https://www.waterboards.ca.gov/sandiego/water_issues/programs/practical_vision/docs/practicalvision_2021_final_09082021.pdf

proposes to modify the NPDES Permit to implement the Conditional Waiver.

The Facility was located adjacent to the Encina Power Station (EPS), which ceased power generating operations on December 11, 2018. The Facility currently draws in up to 299 million gallons per day (MGD) of seawater from Agua Hedionda Lagoon for desalination and flow augmentation using the existing intake structure and screens for the EPS. The NPDES Permit establishes a compliance schedule which allows the Discharger five years from the date the EPS permanently ceased operations to complete design and construction of a new intake structure. The compliance schedule specifies tasks and deadlines for completion of each task related to design and construction of the new intake structure.

In November and December 2022, the Discharger and the Water Authority requested a temporary waiver of chapter III.M of the Ocean Plan from the State Water Board. The Discharger stated in its request that the waiver was necessary due to supply chain issues related to the COVID-19 pandemic, the Russia-Ukraine war, global labor shortages, and decreased equipment availability, which resulted in procurement delays of specialized materials and components for the new intake structure. The procurement delays have negatively impacted the construction schedule. On March 27, 2023, the State Water Board Executive Director issued the Conditional Waiver, which temporarily waives the application of Ocean Plan chapter III.M.2.a.(5)(b) for the requirements of chapter III.M.2.d.(1)(c)ii. and iv. until construction of the Facility's new intake infrastructure is completed and no later than December 11, 2024.

The Tentative Order makes the following modifications to the NPDES Permit to implement the Conditional Waiver:

- Amends the compliance schedule in the NPDES Permit;
- Requires the Discharger to provide an additional 0.132 acres of mitigation;
- Requires the Discharger to submit revised mitigation-related reports; and
- Requires the Discharger to submit quarterly status reports describing progress towards meeting the compliance schedule and mitigation requirements.

California Water Code (Water Code) section 13142.5(b) and the Ocean Plan require mitigation to replace all forms of marine life or habitat lost due to construction and operation of a desalination facility after minimizing intake and mortality of all forms of marine life through use of the best available site, design, and technology. Consistent with Water Code section 13142.5(b) and the Ocean Plan, the NPDES Permit requires the Discharger to provide 68.3 acres of functional mitigation. The Discharger did not begin construction of its mitigation project by Fall of 2021, as specified in its Marine Life Mitigation Plan. Construction of the mitigation project commenced in October 2022. The impacts from the Facility have been unmitigated for 7 years and it is unclear when the mitigation project will meet performance metrics. As a result, additional information is needed regarding the status of the mitigation project and the performance metrics to determine the adequacy of the mitigation in replacing all forms of marine life or habitat lost due to construction of the Facility. The Facility is also currently not using Ocean Plan-complaint intakes screens. Additional mitigation is required to compensate for the period in which Ocean Plan-complaint screens were not in use. Consequently, the Conditional Waiver requires the Discharger to provide an additional 0.132 acres of mitigation, submit revised mitigation-related reports, and submit quarterly status reports describing progress

towards meeting the compliance schedule and mitigation requirements.

Adoption of the Tentative Order and extension of the compliance schedule until December 11, 2024, will enable the Facility to continue providing potable water for San Diego County.

The San Diego Water Board received a timely comment letter from San Diego Coastkeeper (Coastkeeper) during the comment period. (See **Supporting Document No. 3.**) Coastkeeper also submitted an untimely attachment to their comment letter. The untimely attachment is a copy of their March 23, 2023 comment letter to the State Water Board on the Conditional Waiver. The San Diego Water Board Chair refused to admit the untimely attachment into the record for this matter. (Cal. Code Regs., tit. 23, § 648.4(e).) Thus, Supporting Document No. 3 only includes Coastkeeper's comments on the Tentative Order and does not include the attachment. However, San Diego Water Board staff previously received a copy of Coastkeeper's March 23, 2023 comment letter from State Water Board staff in March 2023. Thus, Coastkeeper's March 2023 comment letter is already in the record for this matter. The Response to Comments Report (**Supporting Document No. 4**) contains the San Diego Water Board's responses to the comments and when applicable describes actions taken to revise the Tentative Order. A copy of the Response to Comments Report and the Revised Tentative Order were provided to Coastkeeper and to the Discharger.

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

1. *The cost of desalinated water from the Facility has increased significantly above the maximum cost projected by the Discharger, and is projected by the Water Authority to continue to increase. The Facility is a significant factor in San Diego County's water rates being higher than that of Metropolitan Water District.*

The cost of desalinated water is outside the scope of the Tentative Order. Written comments are only being received on Tentative Order and revised portions of the 2019 Order.

2. *Desalination remains the most energy intensive water supply and will exacerbate the climate crisis. The Facility relies on a renewable energy credits (RECs) scheme to claim the facility is carbon neutral, however, RECs purchased were from an out of state project which uses landfill gas thereby limiting greenhouse gas reductions.*

Consideration of energy and climate change impacts from desalination is outside the scope of the Tentative Order. Written comments are only being received on Tentative Order and revised portions of revised portions of the 2019 Order. The purpose of the Tentative Order is to implement the Conditional Waiver and not to reassess impacts considered during development of the 2019 Order.

3. *Desalination kills a large amount of marine life via impingement and entrainment and from discharge of brine. The Discharger has operated since 2015 without mitigation and missed deadlines for beginning construction of its mitigation project, and did not begin construction of the mitigation project until 6 months after receiving a violation letter from the California Coastal Commission.*

The 2019 Order includes a Water Code section 13142.5(b) determination. In the Water Code section 13142.5(b) determination, the San Diego Water Board

independently analyzed a range of feasible alternatives for 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 also analyzed and considered all four factors collectively to determine the best combination of feasible alternatives to minimize intake and mortality of all forms of marine life.

The San Diego Water Board's Water Code section 13142.5(b) analysis includes an analysis of different intake alternatives and discharge technology combinations. The San Diego Water Board approved an intake alternative and discharge technology in the 2019 Order that is considered to be the best intake alternative to minimize intake and mortality of all forms of marine life. A different intake alternative (referred to as the modified intake design) has since been approved by the San Diego Water Board which will not result in an increase in intake and mortality of marine life beyond that which was originally approved in the 2019 Order and its Water Code section 13142.5(b) determination. In addition, the modified intake design complies with Ocean Plan requirements to minimize entrainment through use of 1 millimeter traveling screens and minimizing impingement through maintaining intake water velocity below 0.5 feet/second.

The San Diego Water Board is aware that the Discharger failed to begin construction of its mitigation project within the required timeframe. The Tentative Order addresses these delays by requiring an additional 0.132 acres of mitigation for the temporal loss of resources, a revised Marine Life Mitigation Plan and revised Marine Life Mitigation Report, quarterly status reports that describe progress towards meeting mitigation requirements, and an updated schedule for completing the approved mitigation project.

4. *Coastkeeper expressed concerns with the Order's reliance on the Proclamation of a State of Emergency statewide due to severe drought conditions, the San Diego Water Board's finding that the 2004 Encina impingement and entrainment data is still representative of current operating conditions, and the Order's statements that the Facility provides ten percent of the region's supply.*

First, the Tentative Order implements the Conditional Waiver issued by the State Water Board Executive Director. The Tentative Order appropriately references the Governor's drought proclamation which was in effect when the Conditional Waiver was issued. Second, entrainment and impingement impacts from the Facility were estimated in the Tenera Environmental *2008 Encina Power Station Clean Water Act Section 316(b) Impingement Mortality and Entrainment Characterization Study* (EPS Study) which used data collected in 2004/2005. Comments regarding the use of the data from the 2008 EPS Study were addressed by the San Diego Water Board prior to adoption of the 2019 Order.² Lastly, the Tentative Order and the 2019 Order do not require the Discharger to deliver a specified quantity of desalinated water. Applicable sections of the Tentative Order have been modified

² See response to comment 17 on pages 52 and 53 of the San Diego Water Board's Response to Comments Report prepared for Tentative Order No. R9-2019-0003: https://www.waterboards.ca.gov/sandiego/board_info/agendas/2019/may/item10/04_Response_to_Comments-with%20Attachment.pdf

to reflect that the Facility may not consistently provide ten percent of local water supplies.

The Revised Tentative Order (**Supporting Document No. 1**) displays changes made to the Tentative Order after the July 10, 2023 public release in red-underline for added text and ~~red-strikeout~~ for deleted text.

PUBLIC NOTICE

The Tentative Order was noticed and released for public review and comment on July 10, 2023, with comments due by August 9, 2023. The Notice of Public Hearing and Comment Period was posted on the San Diego Water Board website for the duration of the comment period and sent to all interested parties. The Notice announced a public hearing to be held on September 13, 2023, availability of the Tentative Order for review, and provided instructions for submitting written comments. A copy of the Notice is provided as **Supporting Document No. 5**. Notice of the public hearing on the Tentative Order was also provided in the Meeting Notice and Agenda for the September 13, 2023 San Diego Water Board meeting, which is posted on the San Diego Water Board website.

SUPPORTING DOCUMENTS

1. Revised Tentative Order
2. Location Map
3. Comment Letter from Coastkeeper
4. Response to Comments Report
5. Notice of Public Hearing