REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION

EXECUTIVE OFFICER SUMMARY REPORT

March 9, 2022

ITEM NO. 8

SUBJECT

NPDES Permit Reissuance: Waste Discharge Requirements for the South Orange County Wastewater Authority Discharge to the Pacific Ocean through the San Juan Creek Ocean Outfall (Tentative Order No. R9-2022-0005, NPDES No. CA0107417). (*Joann Lim and Keith Yaeger*)

STAFF RECOMMENDATION

Adoption of Tentative Order No. R9-2022-0005 (Tentative Order) is recommended.

KEY ISSUES

1. The Tentative Order (**Supporting Document No. 1**) incorporates the proposed South Coast Water District's Doheny Desalination Project. Once constructed and fully operational, the Doheny Desalination Project will produce up to 5 million gallons per day (MGD) of potable drinking water.

2. The Tentative Order includes a California Water Code Section 13142.5(b)[1] Conditional Determination (Tentative Determination) for the Doheny Desalination Project in accordance with chapter III.M of the *Water Quality Control Plan for Ocean Waters of California* (Ocean Plan). The Tentative Determination concludes that the Doheny Desalination Project will use 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 Ocean Plan requirements.

3. The Tentative Determination is conditioned in part on 1) the submission and approval by the San Diego Water Board of the Mitigation Area of Production Forgone (APF) Re-Evaluation Study, the Larval Study, and the Final Marine Life Mitigation Plan; 2) the mitigation requirements in the Tentative Order being sufficient to fully compensate for the mortality of all forms of marine life associated with the Doheny Desalination Project; and 3) the San Juan Creek Ocean Outfall (SJCOO) plume being positively buoyant at least 95% of the time over a 6-month period.

4. The Tentative Order includes a requirement to investigate alternatives for tracking the location and movement of the SJCOO wastewater plume and its potential encroachment on shoreline water contact recreational areas. The San Diego Water Board included similar plume tracking investigative requirements in the National

[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."

Pollutant Discharge Elimination System (NPDES) permits for the Point Loma Ocean Outfall, South Bay Ocean Outfall, San Elijo Ocean Outfall, Encina Ocean Outfall, and Oceanside Ocean Outfall.

PRACTICAL VISION

The Tentative Order incorporates brine discharges from the proposed Doheny Desalination Project to produce potable drinking water, which is consistent with Chapter 6 of the Practical Vision[2], *Strategize to Achieve Resilient Local Water Supply*. Chapter 6 provides that the San Diego Water Board use its authority to help achieve a resilient local water supply, and to advance water security by using local water sources in a manner that improves water quality and reduces greenhouse emissions associated with water transport. The Tentative Order continues 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 and lessening reliance on imported water for drinking water supplies.

Consistent with the mission of Chapter 1 of the Practical Vision, *Strategize for Healthy Waters*, the Tentative Order also integrates all applicable technology-based requirements, water quality-based effluent limitations, and receiving water quality standards to assure protection of the water quality and beneficial uses in the receiving waters of the Pacific Ocean. Additionally, the Tentative Order has provisions allowing for participation in regional monitoring and assessment programs in keeping with San Diego Water Board Resolution No. R9-2012-0069, *Resolution in Support of a Regional Monitoring Framework*.

DISCUSSION

The South Orange County Wastewater Authority (SOCWA) is a public joint powers authority established pursuant to California Government Code section 6500 et seq. and is responsible for the treatment of wastewater and the disposal of treated effluent in a 200-square mile service area in south Orange County. SOCWA is comprised of the following member agencies: the City of Laguna Beach, the City of San Clemente, the City of San Juan Capistrano, El Toro Water District, Emerald Bay Service District, Irvine Ranch Water District, Moulton Niguel Water District (MNWD), Santa Margarita Water District (SMWD), South Coast Water District (SCWD), and Trabuco Canyon Water District.

SOCWA owns and operates the SJCOO, which currently receives treated effluent from four publicly owned treatment works (POTWs), one urban runoff treatment facility, and two groundwater desalination facilities. The J.B. Latham Wastewater Treatment Plant (owned and operated by SOCWA), Chiquita Water Reclamation Plant and San Juan Capistrano Groundwater Treatment Plant (both owned and operated by SMWD), 3A Water Reclamation Plant (owned and operated by SMWD/MNWD), San Clemente Water Reclamation Plant and Segunda Deshecha Runoff Plant (both owned and operated by City of San Clemente), and South Coast Water District Groundwater

[2] https://www.waterboards.ca.gov/sandiego/water_issues/programs/practical_vision/

Recovery Facility (owned and operated by SCWD) discharge wastewater, waste brine, or treated urban runoff to the Pacific Ocean through the SJCOO under the waste discharge requirements of Order No. R9-2012-0012 (Current Order). The Oso Creek Water Reclamation Plant (owned and operated by SMWD) is also regulated by the Current Order but is not permitted to discharge to the SJCOO. If adopted, the Tentative Order will supersede the Current Order. The Tentative Order also incorporates the proposed SCWD's Doheny Desalination Project. A description of these facilities is in Attachment F, section 2.1 of the Tentative Order. The locations of these facilities are in **Supporting Document No. 2**.

SOCWA and SCWD are requesting authorization for an increase in the total effluent flow through the SJCOO from the current limitation of 38.78 MGD to 43.78 MGD to accommodate 5 MGD of waste brine from the proposed Doheny Desalination Project. For the Doheny Desalination Project, SCWD plans to withdraw and desalinate 10 MGD of seawater collected from subsurface slant well water intakes located at Doheny State Beach. The raw seawater will undergo desalination and treatment at the Doheny Desalination Project facility to produce 5 MGD of potable drinking water and 5 MGD of waste brine. The waste brine and backwash waste byproduct from the Doheny Desalination Project facility will be blended and diluted with other SOCWA member agency discharges to the SJCOO to meet salinity requirements before discharging to the Pacific Ocean. The location of the proposed intake system is shown in Attachment B, Map 3 of the Tentative Order. For more information about the treatment system, see Tentative Order Attachment C, Flow Schematic 8 and Attachment F, section 2.1.8.

The Tentative Order includes a Tentative Determination that is applicable to the Doheny Desalination Project. Because the design of the facility has not been finalized, the Tentative Order and Tentative Determination are based on the following assumptions: an average seawater intake of 10.0 MGD, a reverse osmosis recovery rate of 50%, a drinking water production rate of 5 MGD, a baseline wastewater flow of 13 MGD to blend and dilute the brine from the Doheny Desalination Project, maintenance of a positive buoyant plume for the SJCOO discharge 95% of the time, a 10-day larval duration, and a presumption of certain habitat types for species present in the source waterbody. Based on these assumptions, the Tentative Order requires 7.45 acres of mitigation to compensate for the marine life mortality associated with the additional brine waste discharge from the Doheny Desalination Project facility. The Tentative Order requires a Mitigation APF Re-Evaluation Study and a Larval Study to verify the assumptions used to determine the required mitigation. The Tentative Order also requires a Final Marine Life Mitigation Plan to detail the specific steps and methods necessary to provide 7.45 acres of mitigation in the South Los Cerritos Wetlands Restoration Project to compensate for the marine life mortality impacts associated with the construction and operation of the Doheny Desalination Project. The Tentative Determination is conditioned in part on the above assumptions, calculated mitigation requirement, and required studies. For more information on these requirements and the Tentative Determination, see sections 2.4, 6.3.2.3, 6.3.2.4, and 6.3.2.5 and Attachment H of the Tentative Order.

California Environmental Quality Act
The Tentative Determination set forth in Attachment H of the Tentative Order is issued under State law authority only and a discretionary action by the San Diego Water Board subject to compliance with the California Environmental Quality Act (CEQA). In June 2019, SCWD certified the *Doheny Ocean Desalination Plant Project Final Environmental Impact Report* (State Clearinghouse No. 2016031038) (Final EIR). The San Diego Water Board independently considered the environmental effects of the project as described in the Final EIR and addendums. The Final EIR is available on the SCWD website at https://onedrive.live.com/?authkey=%21ALfIIrNEliAfNS8&cid=5A921130DC2CE990&id=5A921130DC2CE990%21110&parId=5A921130DC2CE990%21106&o=OneUp.

Public Notification and Comments on Tentative Order
The Tentative Order and Tentative Determination were noticed and released for public review and comment for a 30-day period on January 4, 2022. The comment period closed on February 3, 2022. The San Diego Water Board received 18 comment letters (**Supporting Document Nos. 3.i - 3.xviii**). The Response to Comments Report (**Supporting Document No. 4**) includes detailed responses to the comments received and any actions taken to modify the Tentative Order and Tentative Determination in response to comments. A copy of the Response to Comments Report and the Revised Tentative Order (Supporting Document No. 1) was provided to the Discharger.

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

1. *The Doheny Desalination Project will increase seawater intrusion and draw down the groundwater and lagoon. (See Supporting Document No. 4, Comment No. 3.2.)*

   Response: According to the *Draft Environmental Impact Report State Clearinghouse No. 2016031038 Doheny Ocean Desalination Project* (Draft EIR), modeling indicates that the installation of slant wells at Doheny State Beach will benefit the groundwater in the San Juan Basin by reducing seawater intrusion into the basin. Monitoring wells will continuously record the water level and the salinity of the groundwater.

2. *Slant wells are unpredictable and risky new technology. (See Supporting Document No. 4, Comment Nos. 3.4, 3.8, 3.14, 3.19, 3.20, 4.3, and 4.15.)*

   Response: Slant wells are a tested reliable technology and have been installed and operated effectively as intakes for potable water supply projects throughout the United States in freshwater rivers and lake environments. The subsurface slant wells eliminate the adverse impacts from entrainment and impingement to marine life. SCWD operated the slant test well continuously in a pilot study for 18 months from December 28, 2010 to April 24, 2012 (Pilot Study). Based on the Pilot Study, SCWD determined that construction and operation of subsurface intakes using slant wells along Doheny State Beach is feasible. Slant well

technology has also been tested successfully for ocean desalination use at the Monterey Peninsula Water Supply Project Test Slant Well in Marina, California for approximately 3 years from April 2015 to February 2018 at an average daily production capacity of 3 MGD.

3. *Potential billing rate impacts resulting from the Doheny Desalination Project to SCWD residential customers are unreasonable and not affordable. (See Supporting Document No. 4, Comment No. 3.5.)*

   Response: The San Diego Water Board is required to consider economic and social factors of the Doheny Desalination Project as they relate to the minimization of intake and mortality of all forms of marine life. The San Diego Water Board's role is to ensure that the project's site, design, technology, and mitigation are feasible to minimize intake and mortality of all forms of marine life. The SCWD provides water and wastewater services to approximately 35,000 residents, 1,000 businesses, and 2 million visitors per year in the south coastal area of Orange County. The SCWD's service area includes the communities of Dana Point and South Laguna, and areas within San Clemente and San Juan Capistrano. It is anticipated that the Doheny Desalination Project will not make residential water bills in SCWD's service area unaffordable. SCWD projects that the Doheny Desalination Project will increase the residential water bill for their customers by approximately $2.38/month for the 5-MGD project.

The Revised Tentative Order (Supporting Document No. 1) displays the changes made after the January 4, 2022 public release in red-underline for added text and ~~red-strikeout~~ for deleted text. Some changes have been made in response to the comment received, and other changes were made to correct minor editorial errors.

SIGNIFICANT CHANGES

The following are significant differences between the Tentative Order (Supporting Document No. 1) and the Current Order (Order No. R9-2012-0012):

1. The Tentative Order adds the discharge from the Doheny Desalination Project and the associated Tentative Determination.

2. The Tentative Order increases the permitted flow to the SJCOO from 38.78 MGD to 43.78 MGD; however, the Tentative Order maintains the 38.78 MGD flowrate for calculating mass-based effluent limitations.

3. The Tentative Order includes a new requirement to develop a Plume Tracking Study to determine if the plume is moving towards the shore or surfacing where it may encroach upon water recreation areas and to evaluate whether the monitoring methods and locations established in previous orders and reinstated in the Tentative Order are still appropriate and applicable.

4. The Tentative Order adds receiving water monitoring requirements to better understand the characteristics of the wastewater plume and to be consistent with the Ocean Plan.

5. To help offset the cost of additional monitoring requirements, the Tentative Order reduces the monitoring frequency at nearshore and offshore stations from monthly to quarterly.

6. The Tentative Order adds a requirement to develop and implement an Asset Management Plan. The Asset Management Plan will provide a framework for setting operational quality assurance procedures, identifying projects needed for the rehabilitation or replacement of Discharger infrastructure and the required budget, and ensuring the Dischargers have sufficient financial and technical resources to continually maintain compliance with the Tentative Order.

7. The Tentative Order adds a requirement to prepare and submit a Climate Change Action Plan within three years of the effective date of the Order.

8. The Tentative Order requires the Dischargers to monitor the receiving water for human marker HF183 when the overall compliance rate for bacteria receiving water limitations specified in the Order is below 90 percent within a rolling one-year period at a single monitoring location, or when bacteria receiving water limitations are exceeded more than 50 percent of the time within a rolling quarterly period for kelp/nearshore monitoring locations.

9. The Tentative Order proposes new requirements to investigate repeated performance goal exceedances and submit a Performance Goal Exceedance Report that includes the results of the investigation. These proposed requirements are proactive measures to prevent the combined SJCOO discharge from causing or contributing to an exceedance (i.e., violation) of the receiving water limitations and water quality objectives described in section 5 of the Tentative Order.

COMPLIANCE RECORD

From January 2017 to December 2021, SOCWA reported 16 effluent violations, 17 deficient monitoring violations, four deficient reporting violations, nine late report violations, and two plant spills. Details regarding these violations are included in the compliance summary provided in the Fact Sheet of the Tentative Order (Attachment F, section 2.4). To address these violations, the San Diego Water Board issued SOCWA three staff enforcement letters, one notice of violation, and two administrative civil liabilities (Settlement Offer No. R9-2018-0020 for $12,000 and Settlement Offer No. R9-2020-0014 for $27,000).

PUBLIC NOTICE

On January 4, 2022, the San Diego Water Board provided public notice of the release of the Tentative Order for public review and comment and today's public hearing. The Notice of Public Hearing and Comment Period (Notice) and the Tentative Order were posted on the San Diego Water Board website for the duration of the 30-day comment

period and sent to all interested parties. The Notice announced a public hearing would be held on March 9, 2022; the availability of the Tentative Order for review; and provided instructions for submittal of written comments. A copy of the Notice is included as **Supporting Document No. 5**. Notice of the public hearing regarding the Tentative Order was also provided in the Meeting Notice and Agenda for the March 9, 2022 San Diego Water Board meeting, which is posted on the Board website.

SUPPORTING DOCUMENTS

1. Revised Tentative Order
2. Location Map
3. Comment Letters
   i. South Orange County Wastewater Authority
   ii. South Coast Water District
   iii. Roger E. Bütow, Founder & Executive Director, Clean Water Now
   iv. Capo Cares
   v. Penny Elia
   vi. Cynthia Love
   vii. Orange County Coastkeeper
   viii. Miller Marine Science & Consulting, Inc.
   ix. South Laguna Civic Association
   x. Los Angeles/Orange Counties Building and Construction Trades Council
   xi. CalDesal
   xii. Dana Point Chamber of Commerce
   xiii. Kar W. Seckel, P.E., Municipal Water District of Orange County
   xiv. Robert J. Hunter, Municipal Water District of Orange County
   xv. Susan Hinman
   xvi. Mesa Water District
   xvii. Local Union 652
   xviii. Laguna Bluebelt
4. Response to Comments Report
5. Notice of Public Hearing and Comment Period