CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION

EXECUTIVE OFFICER SUMMARY REPORT
May 13, 2020

ITEM 5

SUBJECT

NPDES Permit Issuance: Waste Discharge Requirements for the City of San Diego, North City Water Reclamation Plant and Pure Water Facility, Indirect Potable Reuse Reservoir Augmentation Discharge to Miramar Reservoir, San Diego County (Tentative Order No. R9-2020-0001, NPDES No. CA0109398) (*Fisayo Osibodu*).

STAFF RECOMMENDATION

Adoption of Tentative Order No. R9-2020-0001 (Tentative Order) is recommended (**Supporting Document No. 1**).

KEY ISSUES

1. The Tentative Order establishes requirements allowing for use of advanced treated recycled water to directly augment the City of San Diego's Miramar Reservoir, an important regional source of domestic drinking water supply. The Tentative Order, if adopted, will be the first National Pollutant Discharge Elimination System (NPDES) permit issued for a reservoir water augmentation project in the State of California.
2. The Tentative Order includes operation, treatment, design, and monitoring requirements based in part on recommendations from the State Water Board Division of Drinking Water (DDW) for the protection of public health. These requirements implement recycled water criteria specified in Title 22 of the California Code of Regulations (Title 22).
3. The Tentative Order includes effluent limitations based on Maximum Contaminant Levels (MCLs) and Basin Plan water quality objectives to protect the municipal and domestic supply beneficial use of Miramar Reservoir, as well as other aquatic life habitat beneficial uses to ensure a healthy ecosystem is maintained in the Reservoir.

PRACTICAL VISION

Adoption of the Tentative Order is consistent with the goals of the Sustainable Local Water Supply chapter of the Practical Vision[1] to permit indirect potable reuse projects. The use of sustainable local water supply sources helps reduce the San Diego Region's dependence on imported water and increases the reliability of water supplies. The Tentative Order is also consistent with the mission of the Strategy for Healthy Waters chapter of the Practical Vision as it integrates all applicable technology-based requirements, water quality-based effluent limitations, and receiving water quality standards to optimize protection of water quality and beneficial uses of Miramar Reservoir. Additionally, the monitoring and reporting program of the Tentative Order is designed to answer specific questions as recommended by the San Diego Water Board Resolution No. R9-2012-0069, *Resolution in Support of a Regional Monitoring Framework*.

[1] The San Diego Water Board's Practical Vision is available at this website: https://www.waterboards.ca.gov/sandiego/water_issues/Practical_Vision/index.shtml

DISCUSSION

The Tentative Order represents a major step forward in the City of San Diego's (City) Pure Water Program to reduce the region's reliance on imported water and to provide one-third of San Diego's water supply locally by 2035. The Tentative Order will regulate the City's discharge of advanced treated recycled water to Miramar Reservoir, thereby creating a new, reliable, and locally controlled source of water supply. The North City Pure Water Project, the first of several projects planned for construction in multiple phases under the City's Pure Water Program, uses advanced wastewater treatment process technology to produce recycled water to augment drinking water supplies in Miramar Reservoir pursuant to the Tentative Order. The advanced treated recycled water stored in Miramar Reservoir will ultimately be withdrawn, further treated at the City's existing Miramar Drinking Water Treatment Plant (DWTP), and delivered to the drinking water distribution system serving approximately 500,000 customers in the northern portions of the City and the City of Del Mar. Additional details on the North City Pure Water Project, a description of key requirements in the Tentative Order, and a description of the public comment process on the Tentative Order are provided below.

North City Pure Water Project

The North City Pure Water Project (also referred to as the Phase 1 Project) consists of the following components to deliver up to 30 million gallons per day (MGD) of advanced treated recycled water to Miramar Reservoir pursuant to the terms and conditions of the Tentative Order: (1) construction of a new Morena Pump Station and pipelines that will pump and convey additional wastewater to the North City Water Reclamation Plant (NCWRP) for treatment; (2) expansion of the NCWRP; (3) construction of a new North City Pure Water Facility (NCPWF) that will produce advanced treated recycled water to meet drinking water standards; and (4) construction of a new North City Pure Water Pump Station and Pipeline that will convey the advance treated recycled water to Miramar Reservoir. The Phase 1 Project is estimated to become operational in the 2022-2023 time frame.

The City's NCWRP and NCPWF are both located east of interstate 805 on Eastgate Mall, San Diego in between the communities of University City and Miramar (see **Supporting Document No. 2**). The NCWRP produces tertiary treated recycled water and is being expanded from its current 32 MGD capacity to a peak capacity of 56.7 MGD. The NCWRP will treat wastewater from the City of San Diego communities of Mission Beach, Pacific Beach, La Jolla, Clairemont, Kearny Mesa, Mission Valley/Mission Gorge, East San Diego; and the service areas of the Padre Dam Municipal Water District, Alpine Sanitation District, and Winter Gardens Sanitation District. Tertiary treated recycled water from the NCWRP will serve as the source water for the NCPWF. The City also distributes tertiary treated recycled water from the NCWRP to its non-potable customers through an extensive "purple pipe" distribution system.

Once construction of the NCPWF is completed, it will produce up to 32.8 MGD of advanced treated recycled water. Treatment processes at the NCPWF will consist of ozone disinfection, biological activated carbon, membrane filtration, reverse osmosis treatment, ultraviolet light/advanced oxidation using sodium hypochlorite as an oxidant, product-water conditioning, and chlorination. Advanced treated recycled water produced at the NCPWF will be dechlorinated prior to being discharged to Miramar Reservoir. An annual average of 30 MGD of advanced treated recycled water will be discharged to

Miramar Reservoir, and approximately 2.8 MGD of advanced treated recycled water will be blended with tertiary treated recycled water from the NCWRP to reduced salinity levels in the NCWRP non-potable recycled water supplies.

Miramar Reservoir is a water supply reservoir and serves as the raw water source for the Miramar DWTP. Advanced treated recycled water from the NCPWF will replace imported water which is currently used to fill Miramar Reservoir. At an average reservoir withdrawal rate of 30 MGD (to match the average advanced treated recycled water inflows), and at a typical reservoir volume of 5,800 acre-feet, the theoretical average recycled water retention time in Miramar Reservoir will be greater than 60 days. Thus, Miramar Reservoir provides an important environmental buffer for providing public health protection benefits, such as contaminant attenuation, dilution, and time to detect and respond to failures before final treatment at the Miramar DWTP and release to the drinking water distribution system.

Tentative Order Key Requirements
The Tentative Order establishes technology-based effluent limitations for the advanced recycled water discharge based on secondary wastewater treatment standards specified in federal USEPA regulations. The Tentative Order also includes water quality-based effluent limitations based on MCLs for chemicals in drinking water specified in Title 22 of the California Code of Regulations and Basin Plan water quality objectives. The San Diego Water Board conducted a reasonable potential analysis of the projected effluent quality for all chemical constituents with MCLs for which data was available. Although none of the constituents with MCLs were deemed to have the reasonable potential to cause or contribute to an exceedance of applicable MCLs, effluent limitations for all chemical constituents with MCLs are included in the Tentative Order to ensure the protection of the municipal and domestic supply beneficial use of Miramar Reservoir. Additional effluent limitations are also incorporated in the Tentative Order to ensure a healthy ecosystem is maintained in Miramar Reservoir.

The Title 22 regulations also contain criteria governing planned placement of recycled water into surface water reservoirs (reservoir water augmentation projects) to ensure the protection of public health. The City prepared a Title 22 Engineering Report for the project which was reviewed by the DDW to ensure the project complies with criteria specified in Title 22. The DDW prepared a conditional acceptance letter after reviewing the Discharger's Title 22 Engineering Report. The Tentative Order includes treatment, design, operation, and monitoring requirements from Title 22 and the DDW's acceptance letter.

Public Comments on Tentative Order
The public comment period on the Tentative Order closed on February 26, 2020. The San Diego Water Board received one comment from the City on the Tentative Order (**Supporting Document No. 3**) and three comment letters from interested parties in support of the Tentative Order (**Supporting Document Nos. 4, 5, and 6**).

The City commented on the Tentative Order requirement to install permanent monitoring systems at the west and east ends of the reservoir (monitoring locations RSW-001 and RSW-003 respectively) to continuously measure dissolved oxygen, temperature, pH, and turbidity (**Supporting Document No. 3**). The City requested that this requirement be modified to require deployment of a moored sensor string that will continuously monitor

dissolved oxygen, temperature, pH, and electrical conductivity at different elevations at only the west end of Miramar Reservoir. The City explained that there would be little value in installing permanent monitoring systems at two locations in the Reservoir to measure these parameters since the parameters are not expected to change significantly across the horizontal profile of the Reservoir, and that there is little benefit to measuring these parameters at the east end of the Reservoir. The San Diego Water Board modified the Tentative Order in response to the City's comment.

The other three comment letters expressed support for the Tentative Order (**Supporting Document Nos. 4, 5, and 6**). Citizens Coordinate for Century 3 submitted its comment letter after the public comment period deadline (**Supporting Document No. 6**). The San Diego Water Board Chair has concluded that acceptance of this letter into the record for this matter will not prejudice any party or the Board because there is ample time for its review and parties and interested persons can comment on it during the public hearing. Accordingly, this letter is included in the record as Supporting Document No. 6.

The April 8, 2020 Response to Comments Report (**Supporting Document No. 7**) contains the San Diego Water Board responses to the comments received during the public comment period and describes any actions taken to revise the Tentative Order in response to the comments. The Tentative Order also includes non-substantive revisions made after the January 2020 public release to correct some of the mass emission limits and footnotes in the Tentative Order to accurately reflect the NCWRP and NCPWF design flows. All changes are shown in the Revised Tentative Order (**Supporting Document No. 1**) in red-underline for added text and red-strikeout for deleted text.

PUBLIC NOTICE

The Tentative Order was noticed and released for public review on January 27, 2020, with comments due on February 26, 2020. 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 known interested persons by email on January 27, 2020. A copy of the Notice is included as **Supporting Document No. 8**. A subsequent Notice of Public Hearing (**Supporting Document No. 9**) was sent to all known interested persons and posted on the San Diego Water Board website to inform the public that the hearing was rescheduled for the May 13, 2020, Board meeting. A Meeting Notice and Agenda for the May 2020 Board meeting was also posted on the San Diego Water Board website.

SUPPORTING DOCUMENTS

1. Revised Tentative Order
2. Location Map
3. City of San Diego Comment Letter
4. Building Industry Association Comment Letter
5. Water Tech Alliance Comment Letter
6. Citizens Coordinate for Century 3 Comment Letter
7. Response to Comments Report
8. Notice of Public Hearing and Comment Period
9. Notice of Rescheduled Public Hearing