

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

ORDER NO. R9-2016-0183

**MASTER RECYCLING PERMIT FOR CARLSBAD MUNICIPAL WATER DISTRICT,
CARLSBAD WATER RECYCLING FACILITY,
SAN DIEGO COUNTY**

Carlsbad Municipal Water District is subject to waste discharge requirements as set forth in this Order.

Table 1. Discharger Information

| | |
|--|---|
| Discharger | Carlsbad Municipal Water District |
| Name of Facility | Carlsbad Water Recycling Facility |
| Facility Address | 6220 Avenida Encinas |
| | Carlsbad, CA 92011 |
| | San Diego County |
| Facility Contact, Title and Phone | Ms. Wendy Chambers, (760) 438-2722 |
| Mailing Address | 1635 Faraday Avenue, Carlsbad, CA 92008 |
| Type of Facility | Wastewater Treatment Plant |
| Facility Design Flow | 7.0 million gallons per day (mgd) |


Table 2. Discharge Location

| Discharge Point | Effluent Description | Hydrologic Area/Subarea of Discharges |
|-----------------------------------|-------------------------------------|---|
| Various recycled water use sites. | Disinfected Tertiary Recycled Water | El Salto HSA (904.21), Los Monos HSA (904.31), Encinas HA (904.4), Batiquitos HSA (904.51), Richland HSA (904.52) |

Table 3. Effective Date

| | |
|--|-------------------|
| This Order was adopted by the California Regional Water Quality Control Board, San Diego Region and is effective on: | December 14, 2016 |
|--|-------------------|

I, David W. Gibson, Executive Officer, do hereby certify that this Order with all attachments is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Diego Region, on December 14, 2016.



 David W. Gibson, Executive Officer

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I. FINDINGS

The California Regional Water Quality Control Board, San Diego Region (San Diego Water Board), finds:

- A. **Background.** Carlsbad Municipal Water District (hereinafter Discharger) submitted a Report of Waste Discharge (ROWD), dated May 23, 2016, which describes proposed upgrades to expand the capacity of the CWRP from 4 mgd to 7 mgd. Upon adoption, Order No. R9-2016-0183 (Order) will supersede and replace the Discharger's Master Reclamation Permit¹ except for enforcement purposes. The Order increases the permitted flowrate from 4 mgd to 7 mgd, revises some of the discharge specifications, adds requirements of the State *Recycled Water Policy*,² and adds requirements for recycled water fill stations.

The Discharger intends to purchase and use up to 5.0 mgd of recycled water from the Vallecitos Water District Meadowlark Water Reclamation Plant and up to 2.0 mgd of recycled water from the Leucadia Wastewater District Gafner Water Reclamation Plant. Recycled water quality and production at the Meadowlark and Gafner facilities are regulated by separate waste discharge requirements established by the San Diego Water Board. The use of this water within the Discharger's service area is regulated by this Order.

- B. **Legal Authorities.** This Order is issued pursuant to sections 13263 and 13523.1 of the Water Code. This Order serves as a Master Recycling Permit, which also includes Waste Discharge Requirements (WDRs) issued pursuant to article 4, chapter 4, division 7 of the Water Code.
- C. **Background and Rationale for Requirements.** The San Diego Water Board developed the requirements in this Order based on information in the ROWD, self-monitoring reports, water quality control plans and policies, observations made during compliance inspections and site visits, and other available information. An Information Sheet (Attachment C) was prepared for this Order, which contains background information and rationale for Order requirements. The Information Sheet is hereby incorporated into and constitutes findings for this Order.
- D. **Antidegradation Policy.** The State Water Resources Control Board (State Water Board) established California's Antidegradation Policy in Resolution No. 68-16, the Statement of Policy with Respect to Maintaining High Quality of Waters in California. Resolution No. 68-16 requires that existing quality of waters be maintained unless degradation is justified based on specific findings. The San Diego Water Board's Basin Plan implements and incorporates by reference both the State and federal antidegradation policies. As discussed in Section V of the Information Sheet, the discharge regulated by this Order is consistent with the Antidegradation Policy.

¹ Order No. R9-2001-352 as amended by Order No. R9-2012-0027, *Master Reclamation Permit with Waste Discharge Requirements for the Production and Purveyance of Recycled Water for Carlsbad Municipal Water District, Carlsbad Water Recycling Facility, San Diego County*

² State Water Board *Recycled Water Policy* (2009 as modified in 2013):
http://www.waterboards.ca.gov/water_issues/programs/water_recycling_policy/draft_amendment_to_policy.shtml

- E. **Notification of Interested Persons.** The San Diego Water Board has notified the Discharger and interested agencies and persons of its intent to adopt a Master Recycling Permit that also prescribes WDRs in this Order. The San Diego Water Board also provided stakeholders with an opportunity to submit their written comments and recommendations. Details of the notification are provided in Section IX of the Information Sheet.
- F. **Consideration of Public Comment.** The San Diego Water Board, in a public meeting, heard and considered all comments pertaining to the discharge. Details of the scheduling for the Public Hearing are provided in Section IX of the Information Sheet.
- G. **California Environmental Quality Act.** As a responsible agency under the California Environmental Quality Act, the San Diego Water Board considered the mitigated negative declaration prepared by the Discharger, who is the lead agency for the project. The Board concurs that the project will not have a significant impact on the environment.

THEREFORE, IT IS HEREBY ORDERED, that this Order supersedes Order No. 2001-352 as amended by Order No. R9-2012-0027 upon the effective date of this Order except for enforcement purposes. In order to meet the provisions contained in division 7 of the Water Code (commencing with section 13000) and applicable regulations, it is further ordered that the Discharger comply with the requirements in this Order. If any part of this Order is subject to a temporary stay of enforcement, unless otherwise specified in the order granting stay, the Discharger shall comply with the analogous portions of the previous Order. This action does not prevent the San Diego Water Board from taking enforcement actions for past violations of Order No. R9-2001-352.

II. DISCHARGE PROHIBITIONS

- A. Discharge of waste, other than incidental runoff, to lands which have not been specifically described in this Order or in the Report of Waste Discharge, and for which valid waste discharge requirements are not in force are prohibited.
- B. Discharges of treated or untreated solid or liquid waste to waters of the United States are prohibited unless as authorized by a National Discharge Pollution Discharge Elimination System permit issued by the San Diego Water Board.
- C. Discharges of treated or untreated solid or liquid waste directly or indirectly to any surface waters of the State (including ephemeral streams and vernal pools) are prohibited.
- D. The treatment, storage, or disposal of waste in a manner that creates pollution, contamination, or nuisance, as defined by Water Code section 13050, is prohibited.

III. DISCHARGE SPECIFICATIONS

- A. The daily flow from the CWRP shall not exceed 7 mgd.
- B. Recycled water discharged from the CWRP shall not contain constituents in excess of discharge specifications listed in Table 4.

Table 4. Discharge Specifications

| Constituent | Units | Daily Maximum ¹ | Monthly Average ² | Annual Average ³ |
|--|----------|---|------------------------------|-----------------------------|
| Biological Oxygen Demand (BOD ₅ @ 20°C) | mg/L | 45 | 30 | |
| Total Suspended Solids (TSS) | mg/L | 45 | 30 | |
| pH | pH units | Within the limits of 6.5-8.5 at all times | | |
| Total Dissolved Solids (TDS) | mg/L | - | - | 1,100 |
| Chloride (Cl) | mg/L | - | - | 350 |
| Sulfate (SO ₄) | mg/L | - | - | 350 |
| Percent Sodium (% Na) | % | - | - | 60% |
| Iron (Fe) | mg/L | - | - | 0.3 |
| Manganese (Mn) | mg/L | - | - | 0.1 |
| Methylene Blue- Activated Substances (MBAS) | mg/L | - | - | 0.5 |
| Boron (B) | mg/L | - | - | 0.75 |
| Fluoride (F) | mg/L | - | - | 1.0 |
| Aluminum | mg/L | - | - | 1.0 |
| Arsenic | mg/L | - | - | 0.05 |
| Antimony | mg/L | - | - | 0.006 |
| Barium | mg/L | - | - | 1.0 |
| Beryllium | mg/L | - | - | 0.004 |
| Cadmium | mg/L | - | - | 0.005 |
| Cyanide | mg/L | - | - | 0.2 |
| Mercury | mg/L | - | - | 0.002 |
| Nickel | mg/L | - | - | 0.1 |
| Perchlorate | mg/L | - | - | 0.006 |
| Selenium | mg/L | - | - | 0.05 |
| Thallium | mg/L | - | - | 0.002 |

¹The daily maximum discharge specification shall apply to the results of a single composite or grab sample representing non-overlapping 24 hour periods.

²The monthly average discharge specification shall apply to the arithmetic mean of the results of all samples collected during each calendar month.

³The annual average discharge specification shall apply to the arithmetic mean of the results of all samples collected during a calendar year period.

- C. Recycled water discharged from the CWRf shall comply with the following requirements:
1. The chlorine disinfection process must provide a chlorine contact time (or CT)³ value of not less than 450 milligram-minutes per liter at all times with a modal contact time of at least 90 minutes, based on peak dry weather design flow.
 2. The median density of total coliform bacteria measured in the disinfected recycled water effluent from the CWRf shall not exceed a Most Probable Number (MPN) of 2.2 organisms per 100 milliliters, utilizing the bacteriological results of the last seven days for which analyses have been completed; and the number of total coliform bacteria shall not exceed a MPN of 23 organisms per 100 milliliters in more than one sample in any 30-day period. No sample shall exceed an MPN of 240 total coliform bacteria per 100 milliliters.
- D. Turbidity in effluent from the granular media filtration units shall not exceed a daily average value of 2 Nephelometric Turbidity Units (NTU), shall not exceed 5 NTU more than 5 percent of the time during a 24-hour period, and shall not exceed 10 NTU at any time. Coagulation need not be used as part of the granular media filtration treatment process provided that the filter effluent turbidity does not exceed 2 NTU, the turbidity of the influent to the filters is continuously measured, the influent turbidity does not exceed 5 NTU for more than 15 minutes and never exceeds 10 NTU, and that there is the capability to automatically activate chemical addition or divert the wastewater should the filter influent turbidity exceed 5 NTU for more than 15 minutes as specified in title 22 sections 60304 and 60307.
- E. Turbidity in effluent from the microfiltration or ultrafiltration units shall not exceed 0.2 NTU more than 5 percent of the time within a 24-hour period and 0.5 NTU at any time.

IV. WATER RECYCLING REQUIREMENTS

- A. The Discharger must maintain and submit the following to the San Diego Water Board, State Water Board Division of Drinking Water (DDW) and County of San Diego Department of Environmental Health (County DEH) upon request.
1. *Rules and Regulations for Recycled Water Users* governing the design and construction of recycled water use facilities and the use of recycled water. Rules and regulations for purveyance of recycled water shall, at a minimum, include the requirements which are contained in Attachment B to this Order.
 2. A program to conduct compliance inspections of recycled water reuse sites. The program shall be adequate to determine the status of compliance with the Discharger's approved rules and regulations for recycled water users.
 3. A report containing the information listed below. The Discharger may submit a report that covers more than one reuse site. The report shall include a detailed description of each reuse site identifying all of the information below:

³ Defined as the product of total chlorine residual and modal contact time measured at the same point.

- a. The number, location, and type of facilities within the use area proposing to use domestic and recycled water. "Facility" means any type of building or structure, or defined area of specific public use that utilizes or proposes to utilize a dual plumbed system.
 - b. The specific boundaries of the proposed use site area including a map showing the location of each facility, drinking water fountain and impoundment to be served.
 - c. The person or persons responsible for operation of the recycled water system at each use area.
 - d. The specific use to be made of the recycled water at each use area.
 - e. The methods to be used by the Discharger to assure that the installation and operation of the recycled system will not result in cross connections between the recycled water piping system and the potable water piping system. This shall include a description of pressure, dye, or other test methods to be used to test the system.
 - f. Plans and specifications. These shall include the following and shall be submitted to the DDW and County DEH:
 - i. Proposed piping system to be used.
 - ii. Pipe locations of both the recycled and potable systems.
 - iii. Type and location of the outlets and plumbing fixtures that will be accessible to the public.
 - iv. The methods and devices to be used to prevent backflow of recycled water into the public water system.
 - v. Plan notes relating to recycled water specific installation and use requirements.
- B. Prior to providing recycled water to a new use site, the Discharger shall do the following:
- 1. Submit for review and approval a letter certifying that the project conforms to all criteria described in Water Recycling Requirements IV.A.3. The letter shall document that all criteria described in Water Recycling Requirements IV.A.3 has been submitted to and approved by the appropriate regulatory agency. Information submitted as a supplement to this letter shall document compliance with any criteria, as described by Water Recycling Requirements IV.A.3, not met through submittal of the initial report.
 - 2. Ensure that any dual plumbed system within each facility and use area is inspected for possible cross connections with the potable water system. The recycled water

system shall also be tested for possible cross connections at least once every four years. The testing shall be conducted in accordance with the method described in the report submitted pursuant to title 22, California Code of Regulations,⁴ section 60314. The inspections and the testing shall be performed by a cross connection control specialist certified by the California-Nevada section of the American Water Works Association or an organization with equivalent certification requirements. The County DEH shall be notified at least 30 days prior to any cross connection test, or per notification requirements within the Recycled Water Oversight Consent Agreement between the Discharger and the County DEH.⁵ A written report documenting the result of the inspection or testing for the prior year shall be submitted to the County DEH within 30 days following completion of the inspection or testing, or per notification requirements within the Recycled Water Oversight Consent Agreement between the Discharger and the County DEH.

- C. The Discharger shall ensure the following requirements are met for all reuse sites:
1. Enforce recycled water rules and regulations.
 2. Conduct recycled water reuse site compliance inspections in accordance with the program submitted in compliance with Section IV.A.2 of this Order.
 3. Notify the DDW and the County DEH of any incidence of recycled water backflow into the potable water system as soon as possible, but in no case later than 24 hours after finding the incident.
 4. Maintain a current list of all on-site recycled water supervisors.

V. PROVISIONS

- A. The Discharger shall comply with all of the following Standard Provisions:
1. The Discharger must comply with all conditions of this Order. Any noncompliance with this Order constitutes a violation of the Water Code and is grounds for (a) enforcement action; (b) termination, revocation and reissuance, or modification of this Order; or (c) denial of a report of waste discharge in application for new or revised waste discharge requirements.
 2. The Discharger shall allow the San Diego Water Board, or an authorized representative, upon the presentation of credentials and other documents as may be required by law to do the following:
 - a. Enter upon the Discharger's premises where a regulated facility or activity is located or conducted or where records must be kept under the conditions of this Order,

⁴ In this Order, Monitoring and Reporting Program, and Information Sheet, the terms titles 17, 22, and 23 are understood to refer to the California Code of Regulations from this point forward.

⁵ The Consent Agreement establishes notification and requirements for the County DEH regulation of the Discharger's recycled water use.

- b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order,
 - c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices or operations regulated or required under this Order, and
 - d. Sample or monitor, at reasonable times for the purposes of assuring compliance with this Order or as otherwise authorized by the Water Code, any substances or parameters at any location.
- B. The Discharger shall report any noncompliance that may endanger health or the environment. Pursuant to section 5411.5 of the Health and Safety Code, any overflow or spill which results in a discharge of treated or untreated wastewater, or waste to waters of the state shall be immediately reported to the County DEH. In addition, any such information shall be reported to the California Office of Emergency Services and provided orally to the San Diego Water Board within 24 hours from the time the Discharger becomes aware of the circumstances. A written report shall also be provided to the San Diego Water Board within 5 days of the time the Discharger becomes aware of the circumstances. The written report shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected; the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance. The San Diego Water Board may waive the written report on a case-by-case basis if the oral report has been received within 24 hours. The following occurrence(s) must be reported to the San Diego Water Board within 24 hours:
- 1. Any bypass from any portion of the treatment facility.
 - 2. Any discharge of treated or untreated wastewater that occurs downstream of the plant headworks resulting from pipeline breaks, obstruction, surcharge, or any other circumstances.
 - 3. Any treatment plant upset which causes the discharge specifications of this Order to be exceeded.
 - 4. Failure of the disinfection system.
 - 5. Disinfected tertiary effluent total coliform bacteria greater than 240 MPN/ 100mL.
- C. The Discharger shall report all overflow events that occur at the CWRF. For purposes of this reporting requirement, an overflow event is defined as a discharge of treated or untreated wastewater at a location onsite or other lands owned by the Discharger not authorized by waste discharge requirements which results from a pump station failure, line break, obstruction, surcharge, or any other operational dysfunction. This reporting requirement applies to all overflow events other than those events subject to regulation under the State Board Order No. 2006-0003-DWQ and San Diego Water Board Order No. R9-2007-0005. Overflows of the kind identified under this provision shall be reported to the San Diego Water Board with the monthly monitoring report in

which the overflow occurs.

- D. If the Discharger or end user, without regard to intent or negligence, causes or permits an unauthorized discharge of 50,000 gallons or more of recycled water that has been treated to at least disinfected tertiary recycled water⁶ or 1,000 gallons or more of recycled water that is treated at a level less than disinfected tertiary recycled water in or on any waters of the State, or causes or permits such unauthorized discharge to be discharged where it is, or probably will be, discharged in or on any waters of the State, shall, as soon as (1) that person has knowledge of the discharge, (2) notification is possible, and (3) notification can be provided without substantially impeding cleanup or other emergency measures, immediately notify the San Diego Water Board and submit a written report within 5 days containing information described in Provision V.B.
- E. The incidental discharge of recycled water to waters of the State is not a violation of these requirements if the incidental discharge does not unreasonably affect the beneficial uses of the water, and does not result in the receiving water exceeding an applicable water quality objective.
- F. If a need for a discharge bypass is known in advance, the Discharger shall submit prior notice (stating, at a minimum, the purpose, anticipated dates, duration, level of treatment, and volume of bypass) and, if at all possible, the San Diego Water Board shall be made aware of such notice at least 10 days prior to the date of the bypass. "Bypass" means the intentional diversion of waste streams from any portion of the treatment facility other than a sewer system.
- G. The Discharger shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with this Order, including such accelerated or additional monitoring as may be necessary to determine the nature and impact of the noncompliance.
- H. Upon reduction, loss, or failure of the treatment facility the Discharger shall, to the extent necessary to maintain compliance with this Order, control production or all discharges, or both, until the facility is restored or an alternative method of treatment is provided. This provision applies for example, when the primary source of power of the treatment facility has failed, is reduced, or is lost.
- I. Except for a discharge which is in compliance with this Order, any person who, without regard to intent or negligence, causes or permits any hazardous substance or sewage to be discharged in or on any waters of the State, shall as soon as (a) that person has knowledge of the discharge, (b) notification is possible, and (c) notification can be provided without substantially impeding cleanup or other emergency measures, immediately notify the County DEH in accordance with Health and Safety Code section 5411.5 and the California Office of Emergency Services of the discharge in accordance with the spill reporting provision of the State toxic disaster contingency plan adopted pursuant to Government Code title 2, division 1, chapter 7, article 3.7 (commencing with section 8574.17), and immediately notify the State Water Board or the San Diego Water Board of the discharge. This provision does not require

⁶ Disinfected tertiary recycled water is defined in title 22, section 60301.230

reporting of any discharge of less than a reportable quantity as provided for under subdivisions (f) and (g) of section 13271 of the Water Code unless the Discharger is in violation of a prohibition in the *Water Quality Control Plan for the San Diego Basin* (Basin Plan).

- J. Except for a discharge which is in compliance with this Order, any person who without regard to intent or negligence, causes or permits any oil or petroleum product to be discharged in or on any waters of the State, or discharged or deposited where it is, or probably will be, discharged in or on any waters of the State, shall, as soon as (a) such person has knowledge of the discharge, (b) notification is possible, and (c) notification can be provided without substantially impeding cleanup or other emergency measures, immediately notify the California Office of Emergency Services of the discharge in accordance with the spill reporting provision of the State oil spill contingency plan adopted pursuant to Government Code title 2, division 1, chapter 7, article 3.7 (commencing with section 8574.1). This requirement does not require reporting of any discharge of less than 42 gallons unless the discharge is also required to be reported pursuant to Clean Water Act section 311, or the discharge is in violation of a Basin Plan prohibition.
- K. A copy of this Order shall be maintained at the CWRP and shall be available to operating personnel at all times.
- L. The Discharger shall furnish to the San Diego Water Board, within a reasonable time, any information which the San Diego Water Board may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order. The Discharger shall also furnish to the San Diego Water Board, upon request, copies of records required to be kept by this Order.
- M. This Order may be modified, revoked and reissued, or terminated for cause including, but not limited to, the following:
 - 1. Violation of any terms or conditions of this Order.
 - 2. Obtaining this Order by misrepresentation or failure to disclose fully all relevant facts.
 - 3. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.
- N. The filing of a request by the Discharger for the modification, revocation, reissuance, or termination of this Order, or notification of planned changes or anticipated noncompliance does not stay any condition of this Order.
- O. The Discharger shall file a new Report of Waste Discharge, stamped and signed by a licensed professional,⁷ at least 120 days prior to the following:

⁷ All reports, plans, and documents required under this Order must be prepared under the direction of appropriately qualified professionals. California Business and Professions Code sections 6735, 7835, and 7835.1 require that engineering and geologic evaluations and judgments be performed by or under the direction

1. Addition of a major industrial waste discharge to a discharge of essentially domestic sewage, or the addition of a new process or product by an industrial facility resulting in a change in the character of the wastes.
 2. Significant change in the treatment or disposal method (e.g., change in the method of treatment which would significantly alter the nature of the waste).
 3. Change in the disposal area from that described in the findings of this Order.
 4. Increase in flow beyond that specified in this Order.
 5. Other circumstances that result in a material change in character, amount, or location of the waste discharge.
 6. Any planned change in the regulated facility or activity which may result in noncompliance with this Order.
- P. This Order is not transferable to any person except after notice to the San Diego Water Board. This notice must be in writing and received by the San Diego Water Board at least 30 days in advance of any proposed transfer. The notice must include a written agreement between the existing and new Discharger containing a specific date for the transfer of this Order's responsibility and coverage between the current Discharger and the new discharger. This agreement shall include an acknowledgement that the existing Discharger is liable for violations up to the transfer date and that the new discharger is liable from the transfer date on and forward. The San Diego Water Board may require modification or revocation and reissuance of this Order to change the name of the Discharger and incorporate such other requirements as may be necessary under the Water Code.
- Q. Where the Discharger becomes aware that it failed to submit any relevant facts in a Report of Waste Discharge or submitted incorrect information in a Report of Waste Discharge or in any report to the San Diego Water Board, it shall promptly submit such facts or information.
- R. All applications, reports, or information submitted to the San Diego Water Board shall be signed and certified as follows:
1. The Report of Waste Discharge shall be signed as follows:
 - a. For a corporation by either a principal executive officer or ranking elected official;
 - b. For a municipality, State, federal, or other public agency by either a public Executive Officer or ranking official
 - c. By direction of the person designated in paragraph "a" or "b" of this provision, only if:

of licensed professionals. The lead professional shall sign and affix their license stamp to the report, plan, or document.

- i. The authorization is made in writing by a person described in paragraph R.1.a or R1.b of this provision;
 - ii. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity; and
2. All other reports required by this Order and other information required by the San Diego Water Board shall be signed by a person designated in paragraph (R.1) of this provision or a duly authorized representative of that person. An individual is a duly authorized representative only if all of the following are true:
 - a. The authorization is made in writing by a person described in paragraph R.1.a. or R.1.b. of this provision.
 - b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity.
 - c. The written authorization is submitted to the San Diego Water Board.
3. Any person signing a document under this section shall make the following certification:

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of a fine and imprisonment."

- S. The Discharger shall submit reports required under this Order in text searchable PDF format to the San Diego Water Board via email. The email submittals must include a signed cover/transmittal letter (with the facility name, facility contact information, and reference code), and, unless directed otherwise by the Executive Officer, be sent via email to sandiego@waterboards.ca.gov.

VI. SPECIAL PROVISIONS: FACILITY DESIGN AND OPERATION SPECIFICATIONS.

- A. The Discharger shall, at all times, properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Discharger to achieve compliance with conditions of this Order. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls including appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of this Order.

- B. The Discharger must implement the following to ensure that recycled water and fertilizer are applied in use sites at agronomic rates:⁸
1. Monitor nutrient concentrations in recycled water supplies and notify recycled water site supervisors of the nutrient concentrations of recycled water. In the case of recycled water fill stations, customers must be notified of the nutrient concentrations in the recycled water.
 2. Conduct periodic inspections of end use sites to verify the agronomic application rates of fertilizer and recycled water to the landscape.
- C. The Discharger shall conduct a nitrate study to verify that the use of recycled water from the CWRP for landscape irrigation does not cause groundwater to exceed the groundwater quality objective for nitrate of 45 mg/L nitrate as NO₃ in areas with applicable groundwater quality objectives. The nitrate study must evaluate factors such as existing nitrogen removal achieved at the plant, need for additional treatment processes to remove nitrate, fate and transport of nitrogen in the groundwater, groundwater monitoring, application of recycled water and fertilizer at agronomic rates, nitrogen uptake by turfgrass or other vegetation, and other best management practices. A workplan for the nitrate study must be received by the San Diego Water by 5:00 p.m. on September 15, 2017, which identifies proposed tasks and milestones for completing the nitrate study, and a schedule for completing study activities. A nitrate study report documenting the results of the study must be received by the San Diego Water Board by 5:00 p.m. on June 15, 2018.
- D. Recycled water treatment, distribution, and use shall comply with all applicable sections of titles 17 and 22.
- E. Recycled water shall be treated, distributed, and used as described in an approved Engineering Report pursuant to title 22, section 60323 that demonstrates compliance with the Uniform Statewide Recycling criteria (and amendments). Prior to any changes in the treatment facilities, the Discharger shall prepare an amended or new Engineering Report. The Engineering Report shall be submitted to the DDW, County DEH, and San Diego Water Board.
- F. A copy of the facility operations manual shall be maintained at the plant and shall be available to operation personnel and San Diego Water Board staff at all times. The following portions of the operations manual shall be posted at the treatment plant as a quick reference for treatment plant operators.
1. Alarm set points for secondary turbidity, tertiary turbidity, and chlorine residual.
 2. Levels at which flow will be diverted for secondary turbidity, tertiary turbidity, and chlorine residual.

⁸ Agronomic rates refers to rate of application of recycled water to plants necessary to satisfy the plants' evapotranspiration requirements, considering allowances for supplemental water (e.g., effective precipitation), irrigation distribution uniformity, and leaching requirement, thus minimizing the movement of nutrients below the plants' root zone.

3. When to divert flow for high daily and weekly median total coliform.
 4. When the authorities (DDW, County DEH, San Diego Water Board) will be notified of a diversion.
 5. Names and numbers of those authorities to be notified in case of a diversion.
 6. Frequency of calibration for turbidity meters and chlorine residual analyzers.
- G. The CWRP shall be supervised and operated by persons possessing certificates of appropriate grade pursuant to title 23, chapter 3, subchapter 14.
- H. All waste treatment, storage and distribution facilities shall be protected against 100-year peak stream flows as defined by the San Diego County flood control agency.
- I. All wastewater and recycled water storage facilities, shall be protected against erosion, overland runoff, and other impacts resulting from a 100-year, 24-hour frequency storm. The recycled water storage ponds at the North La Costa Golf Course are exempt from this requirement. These ponds shall be operated to prevent discharges of recycled water from the ponds to San Marcos Creek and Batiquitos Lagoon. Delivery of recycled water to the ponds shall be terminated at all times when there is a potential for precipitation to cause the ponds to overflow.
- J. The Discharger shall comply with the Monitoring and Reporting Program (Attachment D to Order No. R9-2016-0183) and future revisions thereto as specified by the San Diego Water Board. Monitoring results shall be reported at the frequency specified in Monitoring and Reporting Program No. R9-2016-0183.

VII. NOTIFICATIONS

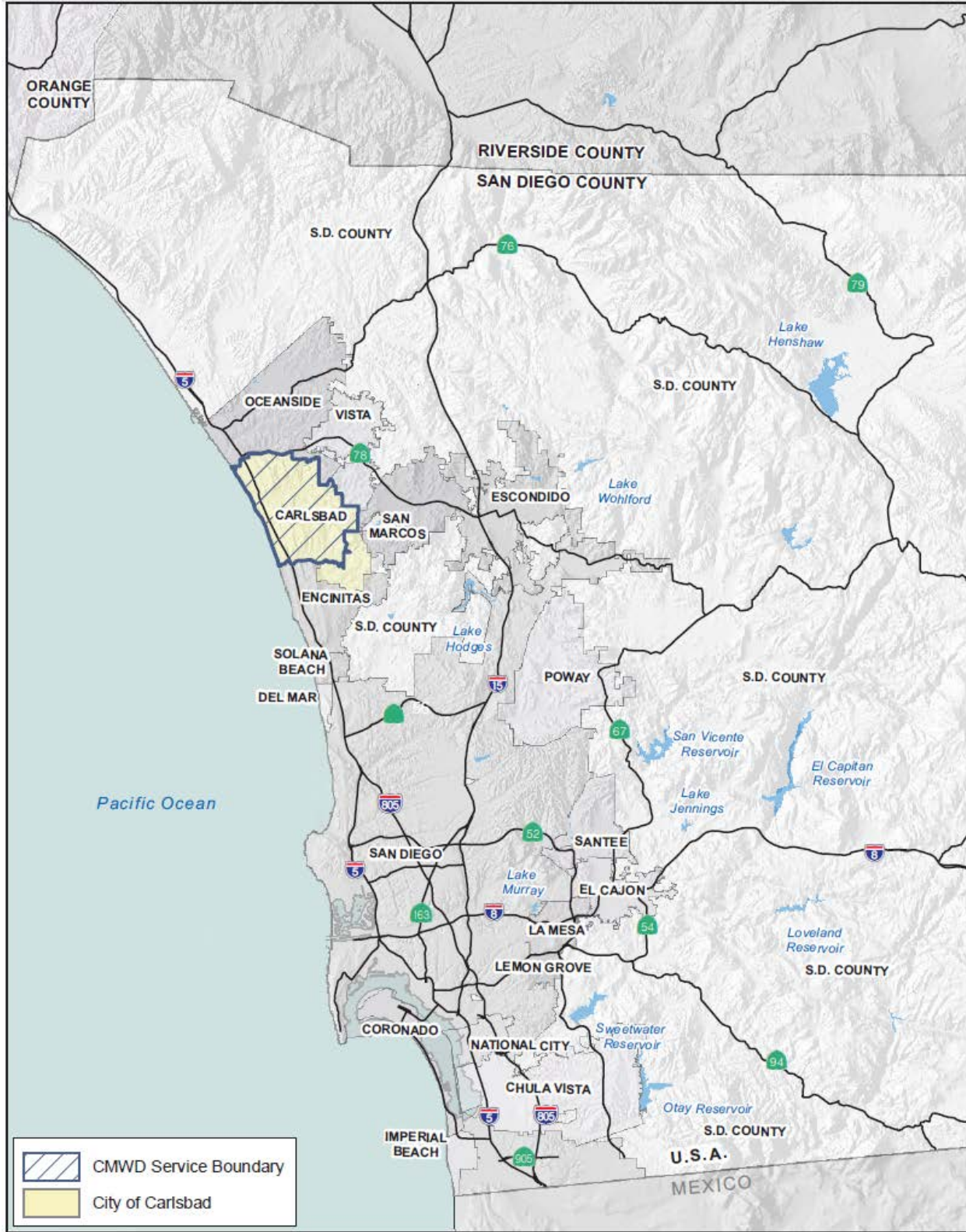
- A. The San Diego Water Board may initiate enforcement action against the Discharger, which may result in the termination of the recycled water discharge, if any person uses, transports, or stores such water in a manner which creates, or threatens to create conditions of pollution, contamination, or nuisance, as defined in Water Code section 13050.
- B. This Order does not convey any property rights of any sort or any exclusive privileges. The requirements prescribed herein do not authorize the commission of any act causing injury to persons or property, nor protect the Discharger from liability under federal, State or local laws, nor create a vested right for the Discharger to continue the waste discharge.
- C. These requirements have not been officially reviewed by the United States Environmental Protection Agency and are not issued pursuant to Clean Water Act section 402.
- D. Any person aggrieved by this action of the San Diego Water Board may petition the State Water Board to review the action in accordance with Water Code section 13320 and title 23, sections 2050 and following. The State Water Board must receive the petition by 5:00 p.m., 30 days after the date of this Order, except that if the thirtieth

day following the date of this Order falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filing petitions may be found on the Internet at: http://www.waterboards.ca.gov/public_notices/petitions/water_quality or will be provided upon request. The provisions of this Order are severable, and if any provision of this Order, or the application of any provision of this Order to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this Order, shall not be affected thereby.

- E. This Order becomes effective on the date of adoption by the San Diego Water Board.

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ATTACHMENT A – REGIONAL LOCATION MAP



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ATTACHMENT B - RULES AND REGULATIONS FOR RECYCLED WATER USE

Pursuant to Water Code Section 13523.1(b) (3), this Order requires the Discharger to establish and to enforce rules and regulations governing the design, construction and use of recycled water distribution and disposal systems by its customers. The rules and regulations shall be consistent with the following criteria:

- Title 22, division 4, chapter 3 (Water Recycling Criteria)
- Title 17, division 1, chapter 5, group 4, article 1 and 2;
- The State Water Board Division of Drinking Water (DDW) *Guidelines For Use of Recycled Water, Guidelines for Use of Recycled Water for Construction*; and
- Any measures that are deemed necessary for protection of public health, such as the American Water Works Association (AWWA) California/Nevada Section, *Guidelines for the Distribution of Non-Potable Water and Guidelines for Retrofitting to Recycled Water* or alternate measures that are acceptable to the DDW.

I. STANDARD RULES AND REGULATIONS

At a minimum, the rules and regulations shall notify the users that:

- A. The use of recycled water shall not cause a condition of pollution, contamination or nuisance, as defined by Water Code section 13050. The Discharger, the San Diego Water Board, the DDW, and the County Department of Environmental Health (County DEH), or an authorized representative of these parties, upon presentation of proper credentials, shall have the right to enter upon the recycled water use site during reasonable hours, to verify that the user is complying with the Discharger's rules and regulations.
- B. The recycled water user shall provide written notification, in a timely manner, to the Discharger of any material change or proposed change in the character of the use of recycled water.
- C. Prior to the initiation of recycled water service, the recycled water user shall submit to the Discharger plans and specifications for recycled water distribution facilities.
- D. The recycled water user shall designate an on-site recycled water supervisor who is responsible for the recycled water system at each use area under the user's control. Specific responsibilities of the recycled water supervisor include the proper installation, operation, and maintenance of the irrigation system; compliance of the project with the Discharger's rules and regulations, prevention of potential hazards and preservation of the recycled water distribution system plans in "as built" form. Designated recycled water supervisors shall obtain instruction in the use of recycled water from an institution approved by the DDW and County DEH, as required.
- E. The Discharger may terminate service to a recycled water user who uses, transports, or stores such water in violation of the Discharger's rules and regulations.

- F. All recycled water storage facilities owned and/or operated by recycled water users shall be protected against erosion, overland runoff, and other impacts resulting from a 100-year, 24 hour frequency storm unless the San Diego Water Board approves relaxed storm protection measures for the facility.
- G. All recycled water storage facilities owned and/or operated by recycled water users shall be protected against 100-year frequency peak stream flows as defined by the San Diego County flood control agency unless the San Diego Water Board approves relaxed storm protection measures for the facility.
- H. The San Diego Water Board may initiate enforcement action against any recycled water user who discharges recycled water in violation of any applicable discharge requirement prescribed by the San Diego Water Board or in a manner which creates or threatens to create conditions of pollution, contamination or nuisance, as defined in Water Code section 13050.
- I. A copy of the recycled water rules and regulations, irrigation system layout map, and a recycled water system operations manual shall be maintained at the use area. These documents shall be available to operating personnel at all times.
- J. Irrigation with disinfected tertiary recycled water shall not take place within 50 feet of any domestic water supply well unless all of the following conditions have been met:
 - 1. A geological investigation demonstrates that an aquitard exists at the well between the uppermost aquifer being drawn from and the ground surface.
 - 2. The well contains an annular seal that extends from the surface into the aquitard.
 - 3. The well is housed to prevent any recycled water spray from coming into contact with the wellhead facilities.
 - 4. The ground surface immediately around the wellhead is contoured to allow surface water to drain away from the well.
 - 5. The owner of the well approves of the elimination of the buffer zone requirement.
- K. Impoundment of disinfected tertiary recycled water shall not occur within 100 feet of any domestic water supply well.
- L. Irrigation with, or impoundment of, disinfected secondary-2.2¹ or disinfected secondary - 23² recycled water shall not take place within 100 feet of any domestic water supply well.
- M. Irrigation with, or impoundment of, undisinfected secondary recycled water shall not take place within 150 feet of any domestic water supply well.

¹ Disinfected secondary-2.2 recycled water is defined in title 22, section 60301.220

² Disinfected secondary-23 recycled water is defined in title 22, section 60301.225

- N. Recycled water facilities shall be operated in accordance with best management practices (BMPs) to prevent direct human consumption of reclaimed water and to minimize misting, ponding, and runoff. BMPs shall be implemented that will minimize both public contact and discharge onto areas not under customer control.
- O. Irrigation with recycled water shall be during periods of minimal human use of the service area. Consideration shall be given to allow a maximum dry-out time before the irrigated area will be used by the public.
- P. All drinking fountains located within the approved use area shall be protected by location and/or structure from contact with recycled water spray, mist, or runoff. Protection shall be by design, construction practice, or system operation.
- Q. Facilities that may be used by the public, including but not limited to eating surfaces and playground equipment and located within the approved use areas, shall be protected to the maximum extent possible by siting and/or structure from contact by irrigation with recycled water spray, mist, or runoff. Protection shall be by design, construction practice or system operation.
- R. Spray irrigation with recycled water, other than disinfected tertiary recycled water, shall not take place within 100 feet of the property line of a residence or a place where public exposure could be similar to that of a park, playground, or school yard.
- S. All use areas where recycled water is used and that are accessible to the public shall be posted with conspicuous signs, in a size no less than 4 inches by 8 inches, that include the following wording in a size no less than 4 inches high by 8 inches wide: "RECYCLED WATER - DO NOT DRINK". The sign(s) shall be of a size easily readable by the public.
- T. No physical connection shall be made or allowed to exist between any recycled water system and any separate system conveying potable water.
- U. The recycled water piping system shall not include any hose bibs. Quick couplers that are different from that used on the potable water system may be used.
- V. The public water supply shall not be used as a backup or supplemental source of water for a recycled water system unless the connection between the two systems is protected by an air gap separation which complies with the requirements of title 17, sections 7602(a) and 7603(a) and the approval of the public water system has been obtained. If a "Swivel-ell" type connection is used it must be used in accordance with conditions specified by DDW. Approved backflow prevention devices shall be provided, installed, tested, and maintained by the recycled water user in accordance with the applicable provisions of title 17, division 1, chapter 5, group 4, article 2.
- W. No person other than the Discharger shall make a connection to the recycled water distribution system.

- X. All recycled water piping and appurtenances in new installations and appurtenances in retrofit installations shall be colored purple or distinctively wrapped with purple tape in accordance with the Health and Safety Code, chapter 7.9, section 4049.54.
- Y. Reuse site shut down tests and inspections shall be monitored by the DDW.
- Z. Customer complaints concerning recycled water use that may involve public illness shall be reported to the County DEH, the DDW, and to the Discharger who shall maintain a log of all customer complaints regarding recycled water.
- AA. Any backflow prevention device installed to protect the public water system shall be inspected and maintained in accordance with title 17, section 7605.
- BB. Recycled water and fertilizer shall be applied to landscapes at agronomic rates.
- CC. Overwatering of landscapes and runoff shall be avoided.
- DD. Recycled water supervisors shall be responsible for determining onsite fertilizer needs to ensure that recycled water is applied to landscapes at agronomic rates, and shall complete training and education in compliance with recycled water agency rules and regulations to: (1) Minimize the potential for runoff or over-irrigation and, (2) Determine the fertilizer needs of the landscape taking into account the nutrient value of recycled water.

II. General Requirements for Hauling or Transportation of Recycled Water Using Vehicles

The Discharger's and Regulations for Recycled Water Use must include requirements that will be implemented to ensure use and transport of recycled water from the fill stations will be protective of public health and the environment. At a minimum the Rules and Regulations must include the requirements below. The Discharger or hauler must comply with the following requirements in sections II-IV of Attachment B to this Order, unless the DDW or the County of San Diego Department of Environmental Health (County DEH) determine that alternative criteria provide equivalent or better protection of public health and the environment.

- A. Haulers interested in participating in this program must apply for a Recycled Water Use Permit issued by the Discharger.
- B. Use areas receiving hauled recycled water must follow the same title 17 and title 22, requirements as a similar use area receiving traditionally piped recycled water. These requirements must be addressed in the Discharger's permitting process.
- C. Before trucks or containers can be filled for the first time, all haulers are required to attend a brief on-site orientation or training in order to learn about using the filling station and the proper handling and safe use of recycled water. Annual refresher training should be required. Records of training should be maintained by the Discharger.
- D. Once the hauler completes the on-site orientation or training and a MRP Recycled Water Program inspector verifies the tanker truck or containers meet the recycled water use

requirements, the inspector will issue a signed Recycled Water Use Permit. The Recycled Water Use Permit must be available for inspection at all times. The hauler must carry a copy in the vehicle at all times while hauling recycled water.

- E. Recycled water must not be introduced into any potable water piping system and no connection shall be made between the tank and any part of a potable water system.
- F. If the hauler requests to supply recycled water to a use area that uses any plumbed potable or recycled water distribution systems, the Discharger must follow all applicable title 17 and title 22 requirements, including cross connection control testing and backflow prevention device installation prior to allowing pick up of recycled water. Dual plumbed use areas can only receive recycled water from a recycled water agency as specified in title 22, section 60313(a).
- G. The hauler must keep a log book for each vehicle, tank, or container used to transport recycled water. The log book must be available for inspection at all times. The hauler must carry a copy in the vehicle at all times while hauling recycled water. The log book should include:
 - 1. Date of delivery/use,
 - 2. Volume of water delivered/used,
 - 3. Intended use of water,
 - 4. Name and address of the recipient/customer.
- H. The hauler or Recycled Water Site Supervisor must notify workers and the public recycled water is used at a site and inform workers and the public not to drink recycled water or use it for food preparation.
- I. Precautions should be taken to avoid food coming in contact with recycled water while the use site is wet.
- J. No irrigation or impoundment of recycled water is allowed within a minimum of 50 feet of any domestic drinking water well.
- K. The haulers shall take adequate measures to prevent overspray, ponding, or run off of recycled water from the authorized recycled water use area.
- L. The Recycled Water Use Permit issued by the Discharger must be available for inspection at all times.
- M. Recycled water must not be introduced into any potable water piping system and no connection shall be made between the tank and any part of a potable water system.
- N. Tank trucks, containers, and appurtenances must be clearly identified as “non-potable”, equipped with a legally sized air gap, and must not be used to provide potable water.

Containers and hoses associated with hauling recycled water must not be used for potable water. Commercial hauling trucks that may be filled with potable water for non-potable uses must have two separate filling systems, one dedicated to potable water and one dedicated to recycled water. When the truck is filled from a potable water source, there must be a water agency or municipality provided meter and backflow device between the truck fill line and the potable source.

- O. Vehicles, tanks, and containers must have water-tight valves and fittings, must not leak or spill contents during transport, and are cleaned of contaminants. This must be checked by the hauler before each use. Water-containing vessels that are open to the atmosphere during hauling are not acceptable for use.
- P. Haulers should not overfill containers or trucks.
- Q. Hoses used for the application of recycled water shall be removable and shall be stored in a disconnected condition during transport. Hoses should be inspected prior to filling to ensure that they are in serviceable condition and free from leaks.
- R. In the event of an emergency concerning the recycled water hydrant, meter, fill pipe or hose (spillage, leaks, etc.), the hauler should call the emergency contact number listed on the filling station sign for further instructions.
- S. The Discharger may conduct use area visits to ensure proper use of recycled water according to all applicable requirements of titles 17 and 22 and Recycled Water Use Permit conditions. This may include follow up phone calls or surveys of end users about completion of the hauling process and recycled water application.
- T. Conditions under which haulers may lose their permits should be clarified. Including failure to follow program requirements and/or adhere to applicable State, County or local codes will result in suspension of the haulers permit. Violations of such codes may also result in fines and applicable administrative fees.
- U. Residential hauling programs shall have fill stations staffed at all times by a representative from the Discharger. This is to ensure proper handling and filling procedures are being conducted at the fill stations.
- V. Residential hauling programs must limit onetime hauls to 300 gallons.
- W. The permitted hauler shall notify the Discharger prior to using recycled water for a use not approved by the Discharger.
- X. The Discharger, San Diego Water Board, DDW, and County DEH will have the right to enter any recycled water use site during reasonable hours to ensure the user is complying with these requirements and the Discharger's Rules and Regulations for Recycled Water Use.

III. Rules and Regulations for Hauling or Transportation of Recycled Water From Commercial Vehicle Fill Stations

- A. Trucks hauling recycled water that may also be filled with potable supplies for non-potable purposes shall have a dedicated potable use fill line through an air gap separation. The fill lines shall be properly labeled as potable or recycled water. As an alternative, the water supplier may install a reduced pressure principle backflow device on the potable system for filling trucks with potable water. Vehicles used to transport recycled water shall not be used to carry water for potable purposes.
- B. The risers, hoses, and fittings for each supply shall be color coded (painted), blue for potable and purple for recycled water.
- C. The hoses, hydrants and risers for each supply shall have separate and unique fittings (e.g., 2-1/2 inch diameter on the potable system and 2 inch diameter on the recycled water system) such that the potable system cannot accidentally be used on the recycled system and vice versa.
- D. All vehicles used in transporting recycled water must be clearly marked with typical signage that reads: "CAUTION: RECYCLED WATER - DO NOT DRINK" in English and Spanish. The Discharger shall conduct annual inspections of the trucks to assure that all requirements in this Order are being met and that recycled water is being used in compliance with the requirements of this Order.
- E. Vehicles used for transportation or distribution of recycled water, or for street sweeping must be equipped with an air gap to ensure backflow protection.
- F. The use of recycled water for street sweeping or construction shall comply with the appropriate local storm water ordinance. Typical compliance measures include preventing overspray, ponding, or runoff of recycled water from the use area.
- G. Haulers shall be required to enter the date and amount collected on the fill station log sheet during each visit. Include locations the recycled water will be used and approximate amounts.
- H. For Hydrant Meter Filling Stations ensure the meter is shut off before disconnecting the fill line and make sure no water is leaking from the meter or hydrant.
- I. For Gate Access Filling Stations ensure no water is leaking from the fill pipe or hose and securely re-lock the gate after leaving the filling station.
- J. A truck or tank that has contained material from a septic tank or cesspool shall not be used to contain or distribute recycled water.

IV. Rules and Regulations for Use of Recycled Water for Fire Fighting

- A. Unused recycled water must not be released into streams, rivers, or waterways.
- B. Fire hydrants supplied with recycled water must be clearly identified by purple paints, signs, tags, stencils, or other such labeling, in order to notify firefighters that the fire hydrants are supplied with recycled water.
- C. Fire truck tanks must be disinfected following the use of recycled water for firefighting since fire trucks could be used to distribute drinking water during civil emergencies.
- D. Firefighting personnel must be adequately trained in safe use of recycled water. New and current firefighting personnel must receive periodic refresher courses regarding proper handling and use of recycled water.

ATTACHMENT C
INFORMATION SHEET
ORDER NO. R9-2016-0183
MASTER RECYCLING PERMIT
FOR THE CARLSBAD MUNICIPAL WATER DISTRICT,
CARLSBAD WATER RECYLING FACILITY, SAN DIEGO COUNTY

This Information Sheet includes the legal requirements and technical rationale that serve as the basis for the waste discharge requirements (WDRs) in Order No. R9-2016-0183 (Order), and directives in Monitoring and Report Program No. R9-2016-0183 (MRP). The Information Sheet contains background information and rationale for MRP directives. The Information Sheet is hereby incorporated into and constitutes findings for this MRP.

I. INTRODUCTION

The Order establishes WDRs for the production, distribution, and use of recycled water from the Carlsbad Water Recycling Facility (CWRF), and serves as a Master Recycling Permit. The CWRF has been regulated under Order No. R9-2001-352 as amended by Order No. R9-2012-0027, *Master Reclamation Permit with Waste Discharge Requirements for the Production and Purveyance of Recycled Water for Carlsbad Municipal Water District, Carlsbad Water Recycling Facility, San Diego County*. The Order is an updated Master Recycling Permit for the CWRF. The Order increases the permitted flowrate from 4 million gallons per day (mgd) to 7mgd, revises some of the discharge specifications, adds requirements of the State *Recycled Water Policy*,¹ and adds requirements for recycled water fill stations.

The Discharger intends to purchase and use up to 5.0 mgd of recycled water from the Vallecitos Water District Meadowlark Water Reclamation Plant and up to 2.0 mgd of recycled water from the Leucadia Wastewater District Gafner Water Reclamation Plant. Recycled water quality and production at the Meadowlark and Gafner facilities are regulated by separate waste discharge requirements established by the San Diego Water Board. The use of this water within the Discharger's service area is regulated by this Order.

The MRP (Attachment D) requires the Discharger to furnish monitoring reports to demonstrate compliance with the WDRs in the Order. The San Diego Water Board developed the WDRs in the Order and directives in the MRP based on information in the report of waste discharge, monitoring reports, water quality control plans and policies, and other available information. The Information Sheet is hereby incorporated as findings for the Order and MRP.

¹ State Water Board's Recycled Water Policy (2009 as modified in 2013):
http://www.waterboards.ca.gov/water_issues/programs/water_recycling_policy/draft_amendment_to_policy.shtml

For the purposes of this Order and MRP, references to the “discharger” in applicable State laws, regulations, plans, or policy are held to be equivalent to references to the Discharger herein.

- A. On January 17, 2014, California’s Governor proclaimed a [Drought State of Emergency](#) and directed state officials to take all necessary actions to prepare for drought conditions. The California Legislature has declared that a substantial portion of the future water requirements of the State may be economically met by beneficial use of recycled water (Water Code, section 13511). The Legislature also expressed its intent that the State under take all possible steps to encourage development of water recycling facilities so that recycled water may be made available to help meet the growing water requirements of the State (Water Code, section 13512). The Order is consistent with the legislature’s declaration because it encourages the increased use of recycled water in place of potable water supplies.
- B. On February 3, 2009, the State Water Resources Control Board (State Water Board) adopted Resolution No. 2009-0011, *Adoption of a Policy for Water Quality Control for Recycled Water* (Recycled Water Policy, revised January 22, 2013 and effective April 25, 2013).² The Recycled Water Policy promotes the use of recycled water to achieve sustainable local water supplies and reduce greenhouse gas emissions. This Order is consistent with the Recycled Water Policy because it requires the Discharger to conduct priority pollutant monitoring and implement nutrient management measures.

Recycled water use can help to reduce the scarcity of local water supplies. It is not the only option for bringing supply and demand into a better balance, but it is a viable cost effective solution that is appropriate in many cases. The feasibility of recycled water use depends on local circumstances, which affect the balance of costs and benefits. In drought conditions, recycled water can be particularly valuable given the scarcity of alternative potable water supplies. In normal precipitation years recycled water use may reduce groundwater extraction. Broader and more effective uses of recycled water are consistent with the goals and objectives of the Recycled Water Policy and the San Diego Water Board’s Practical Vision strategy for achieving a sustainable local water supply.³

- C. The Order adds new provisions for the safe transport and use of recycled water from possible future recycled water fill stations. If the Discharger chooses to establish recycled water fill stations, the Order requires the Discharger to amend its *Rules and Regulations for Recycled Water Use* and implement measures to ensure that the use and transport of recycled water from the fill stations complies with the Uniform Statewide Recycling Criteria, and is protective of public health and the environment.

² http://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2013/rs2013_0003_a.pdf

³ See Practical Vision for “Strategy for Achieving a Sustainable Local Water Supply”
http://www.waterboards.ca.gov/sandiego/water_issues/Practical_Vision/index.shtml

II. FACILITY DESCRIPTION

- A. **Description of the Carlsbad Water Recycling Facility.** The CWRP receives secondary treated effluent from the Encina Water Pollution Control Facility (EWPCF). The EWPCF is owned and operated by Encina Wastewater Authority, which consists of six member agencies including the Discharger.

The existing CWRP has a treatment capacity of 4 mgd and features two treatment trains. One treatment train is comprised of in-line coagulation/flocculation followed by continuous backwash granular media filtration (GMF). The second treatment train consists of prescreening with a 500-micron wedge wire screen and automatic strainers, microfiltration (MF), and reverse osmosis (RO) treatment. Product water from the two treatment trains are blended and chlorinated using sodium hypochlorite. Recycled water TDS concentrations can fluctuate based on TDS levels in secondary effluent received from the EWPCF and TDS levels in Encina Wastewater Authority's potable water supply. Therefore, the coagulation/flocculation/GMF train is sized to produce up to 4.0 mgd of filtered recycled water during times when MF/RO is not required to reduce concentrations of total dissolved solids (TDS) in the recycled water. When recycled water TDS concentrations need to be controlled, the second MF/RO train can produce up to 0.69 mgd that is blended with water from the GMF train. Both treatment trains are designed to comply with reliability and redundancy criteria established within the California Code of Regulations, title 22⁴ sections 60333 through 60533. When the MF/RO treatment train is operated, flows through the coagulation/flocculation/GMF train are regulated to ensure that CWRP product water flows are equal to or less than 4.0 mgd.

The Discharger is not making significant changes to the GMF and MF treatment systems as part of the CWRP expansion. A third treatment train, however, is being added to the CWRP as part of the plant expansion. This third treatment train will include a new set of pretreatment strainers followed by ultrafiltration (UF) treatment. The UF units are sized to produce up to 3.8 mgd of product water during peak production times (when no backwashing is occurring). Average daily production capacity of the UF units will be 3.38 mgd. The three treatment trains will be operated to produce up to 7.0 mgd of disinfected tertiary recycled water.

Product water from the three treatment trains will be combined and disinfected. New disinfection facilities to be included as part of the expansion project include a third metering pump, an upgraded rapid mixer, and a new chlorine contact basin. In addition to the third treatment train, several improvements and upgrades are being implemented within the existing two treatment trains.

- B. **Recycled Water Use and Discharge.** Recycled water produced from the CWRP will be used mainly for landscape irrigation at end use sites. The Discharger's recycled

⁴ In this Information Sheet, the terms titles 17, 22, and 23 are understood to refer to the California Code of Regulations from this point forward.

water distribution area is within the El Salto Hydrologic Sub Area (HSA), Los Monos HSA, Encinas Hydrologic Area (HA), Batiqitos HSA, and Richland HSA.

The Order also includes requirements for the transport and use of water from recycled water fill stations. Recycled water transported from fill stations may be used for the following purposes:

- Street sweeping and cleaning of sidewalks and outdoor work areas.
- Dust control, soil compaction, and construction.
- Sewer flushing and pressure testing of newly constructed tertiary recycled water pipelines, sewer force main pipelines, and gas pipelines.
- Irrigation of commercial and residential landscapes, crops, and nursery stock.
- Fire protection.
- Other uses approved in title 22 upon receiving approval from the State Water Resources Control Board Division of Drinking Water (DDW).

C. **Recycled Water Quality.** Table 1 below provides a summary of recycled water quality from 2010-2015 for various chemical constituents.

Table 1. Recycled Water Quality from the CWRP (units in milligrams per liter, mg/L)

| Constituent | Units | 2010 | | 2011 | | 2012 | | 2013 | | 2014 | | 2015 | |
|-------------|----------|------|------|------|------|------|-------|------|------|------|------|------|------|
| | | Ave | Max | Ave | Max | Ave | Max | Ave | Max | Ave | Max | Ave | Max |
| BOD | mg/L | 3.22 | 5.40 | 4.04 | 5.80 | 6.72 | 11.20 | 5.79 | 6.60 | 5.39 | 8.50 | 4.69 | 6.00 |
| pH | pH units | 7.16 | 7.80 | 7.39 | 7.67 | 7.43 | 7.51 | 7.52 | 7.75 | 7.56 | 7.97 | 7.46 | 7.74 |
| TSS | mg/L | 2.2 | 5.6 | 2.9 | 5.0 | 2.8 | 5.0 | 1.8 | 3.1 | 1.7 | 4.1 | 1.9 | 3.8 |
| MBAS | mg/L | 0.05 | 0.05 | 0.10 | 0.10 | 0.11 | 0.15 | 0.11 | 0.11 | 0.14 | 0.14 | NA | NA |
| Alkalinity | mg/L | 174 | 317 | 292 | 331 | 288 | 325 | 291 | 315 | 291 | 331 | 289 | 291 |
| Boron | mg/L | 0.32 | 0.43 | 0.35 | 0.36 | 0.36 | 0.38 | 0.35 | 0.37 | 0.35 | 0.41 | 0.37 | 0.42 |
| Calcium | mg/L | 42 | 72 | 65 | 73 | 63 | 66 | 72 | 81 | 87 | 93 | 89 | 94 |
| Chloride | mg/L | 191 | 286 | 271 | 310 | 279 | 330 | 276 | 303 | 275 | 303 | 288 | 342 |
| Fluoride | mg/L | NA | NA | 0.65 | 0.65 | 0.81 | 0.72 | 0.81 | 0.81 | 0.70 | 0.70 | NA | NA |
| Iron | mg/L | 0.20 | 0.41 | 0.27 | 0.70 | 0.28 | 1.00 | 0.28 | 0.46 | 0.17 | 0.29 | 0.16 | 0.21 |
| Manganese | mg/L | 0.06 | 0.08 | 0.08 | 0.15 | 0.07 | 0.15 | 0.08 | 0.09 | 0.08 | 0.09 | 0.08 | 0.09 |

| Constituent | Units | 2010 | | 2011 | | 2012 | | 2013 | | 2014 | | 2015 | |
|-------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | | Ave | Max | Ave | Max | Ave | Max | Ave | Max | Ave | Max | Ave | Max |
| Magnesium | mg/L | 13.00 | 28.70 | 28.39 | 38.28 | 27.27 | 28.90 | 28.57 | 34.00 | 31.86 | 34.00 | 34.86 | 35.42 |
| Percent Sodium | % | NA | NA | NA | NA | NA | NA | NA | 55 | 53 | 56 | 53 | 54 |
| Sodium Adsorption Ratio (SAR) | % | 4.22 | 6.22 | 5.91 | 6.16 | 6.02 | 6.68 | 5.94 | 6.18 | 5.30 | 5.73 | 5.68 | 5.68 |
| Sulfate | mg/L | 147 | 254 | 178 | 222 | 176 | 194 | 221 | 253 | 208 | 264 | 267 | 288 |
| TDS | mg/L | 970 | 994 | 927 | 1,019 | 941 | 1,042 | 980 | 1,055 | 970 | 1,055 | 1,037 | 1,139 |

End notes for Table 1: mg/L= milligrams per liter, BOD = Biological Oxygen Demand, TSS = Total Suspended Solids, TDS = Total Dissolved Solids, % = Percent

D. Proposed Changes in Master Recycling Permit. The Order increases the permitted flow capacity of the CWRP from 4.0 to 7.0 mgd. The Order also includes requirements for Rules and Regulations for hauling and transporting recycled water, includes updated effluent monitoring requirements, establishes annual average discharge specifications as a calendar average,⁵ and requires the Discharger to conduct a nitrate study. In addition, the Order also eliminates daily maximum and 30-day discharge specifications and establishes discharge specifications based on calendar averages for the following constituents:

- Boron
- Chloride
- Iron
- Manganese
- Sulfate; and
- TDS.

The use of annual average discharge specifications is appropriate for regulating mineral concentrations in recycled water applications to land, as groundwater quality is not discernibly impacted by short-term differences in the quality of applied water, but can be influenced by long-term trends.

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

The requirements contained in the Order are based on the requirements and authorities described in this section.

⁵ The annual average discharge specifications from Order No. 2001-352 as amended by Order No. R9-2012-0027 have been retained in this Order. However, the annual average discharge specifications in this Order are expressed as calendar averages rather than running averages.

- A. **Legal Authorities.** This Order is issued pursuant to Water Code sections 13263 and 13523.1. This Order serves as a Master Recycling Permit, which also includes Waste Discharge Requirements (WDRs) issued pursuant to article 4, chapter 4, division 7 of the Water Code.
- B. **California Environmental Quality Act.** The discretionary decision to adopt a Master Recycling Permit and MRP is a project under the California Environmental Quality Act (CEQA).⁶ As the lead agency for the project, the Discharger prepared a Mitigated Negative Declaration for the project pursuant to the requirements of CEQA. The Mitigated Negative Declaration concludes that the project will not have a significant impact on the environment because mitigation measures have been included as part of the project. The San Diego Water Board is a responsible agency under CEQA. As such, the Board considered the Negative Declaration, and the project’s environmental effects as described in that document. The Board concurs that the project will not have a significant impact on the environment.
- C. **Water Quality Control Plans.** The *Water Quality Control Plan for the San Diego Basin* (Basin Plan) designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. In addition, the Basin Plan implements State Water Board Resolution No. 88-63, which established State policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply. The beneficial uses of groundwater in the HA/HSAs in which recycled water from the CWRP is used are shown in Table 2:

Table 2. Beneficial Uses

| Beneficial Uses | Hydrologic Area or Sub Area |
|--|---|
| Municipal supply, Agricultural supply, Industrial supply | El Salto HSA, ¹ Los Monos HSA, ^{1,2,3} Batiquitos HSA, ^{1,4,5} Richland HSA ^{1,4} |
| Excepted from Municipal supply | Encinas HA |

End notes for Table 2

1. These beneficial uses do not apply westerly of the easterly boundary of the right-of-way of Interstate 5 and this area is excepted from the sources of drinking water policy. The beneficial uses for the remainder of the hydrologic area are as shown.
2. These beneficial uses designations apply to the portion of HSA 4.31 bounded on the west by the easterly boundary of Interstate Highway 5 right-of-way; on the east by the easterly boundary of El Camino Real; and on the north by a line extending along the southerly edge of Agua Hedionda Lagoon to the easterly end of the lagoon, thence in an easterly direction to Evans Point, thence easterly to El Camino Real along the ridge lines separating Letterbox Canyon and the area draining to the Marcario Canyon.
3. These beneficial uses apply to the portion of HSA 4.31 tributary to Agua Hedionda Creek downstream from the El Camino Real crossing, except lands tributary to Marcario Canyon (located directly southerly of Evans Point, land directly south of Agua Hedionda Lagoon, and areas west of Interstate Highway 5).

⁶ Pub. Resources Code section 21000 et seq.

4. These beneficial uses do not apply to HSA 4.51 and HSA 4.52 between Highway 78 and El Camino Real and to all lands which drain to Moonlight Creek, Cottonwood Creek and to Encinitas Creek and this area is excepted from the sources of drinking water policy. The beneficial uses for the remainder of the subarea are as shown.
5. These beneficial uses apply to the portion of HSA 4.51 bounded on the south by the north shore of Batiquitos Lagoon, on the west by the easterly boundary of the Interstate Highway 5 right-of-way, on the north by the subarea boundary and on the east by the easterly boundary of El Camino Real.

This Order implements the Basin Plan by prescribing requirements for the production, reuse, and disposal of recycled water that will not adversely impact water quality, beneficial uses, human health, or the environment.

- D. **Recycled Water Policy.** The Recycled Water Policy establishes criteria for recycled water projects, recycling requirements, and WDRs. The intent of the Policy is to fully implement State and federal water quality laws and regulations while increasing recycled water use, allowing for streamlined permitting for appropriate landscape irrigation projects, and allowing basin-wide management of salts and nutrients.

The Recycled Water Policy states that the appropriate way to address salts and nutrients is through development of regional and sub-regional salt and nutrient management plans (SNMPs). The Guidelines for Salinity/Nutrient Management Planning in the San Diego Region (guidelines)⁷ outline a prioritization approach for developing SNMPs. Under this approach, the groundwater basins are grouped into five tiers (A through E). Criteria used for grouping the basins are storage volumes and yield, level of municipal water supply use, availability of information on water resources in the basins, and water quality considerations. The highest level of effort is required in developing the SNMPs for the Tier A basins, while the guidelines recommend that SNMPs not be required for the Tier D and E basins. This approach is consistent with the Recycled Water Policy which recognizes that the degree of specificity of the SNMPs should be dependent on factors such as size and complexity of the basin, source water quality, aquifer water quality, etc. The tiered approach also ensures a level of consistency in salt and nutrient management planning efforts within individual groundwater basins of the San Diego Region.

A large portion of the Discharger's service area is within basins designated as low priority Tier D basins in the guidelines. Tier D basins have high concentrations of TDS in the groundwater and have TDS groundwater quality objectives that exceed 1,200 mg/L. The guidelines conclude that SNMPs should not be required within Tier D basins, as recycled water compliance with existing Basin Plan salinity objectives is not a concern within the Tier D basins.

Rather than ignore Tier D and E basins, the San Diego Water Board worked with the San Diego County Water Authority to include salt and nutrient management planning elements for Tier D and E basins in the 2013 Integrated Regional Water Management Plan (IRWM Plan) that covers the San Diego Region. Attachment B to the Order

⁷The guidelines were endorsed by the San Diego Water Board on November 10, 2010 with adoption of Resolution No. R9-2010-0125.

requires the Discharger to implement the elements in the IRWM Plan for salt and nutrient management in its Rules and Regulations for Recycled Water Use. These measures include ensuring recycled water and fertilizer are applied in end use areas at agronomic rates, avoiding overwatering of landscapes, and training and education of recycled water site supervisors.

- E. **Antidegradation Policy.** The Basin Plan implements and incorporates by reference both the State⁸ and federal antidegradation policies. The State policy requires that existing quality of waters be maintained unless degradation is justified based on specific findings. As discussed in Section V of this Information Sheet, regulation of the discharges of recycled water from the CWRP will result in receiving water quality that is consistent with the State and federal antidegradation policies.

IV. RATIONALE FOR DISCHARGE SPECIFICATIONS

The Order establishes technology and water quality based discharge specifications, and discharge specifications based on title 22, for the discharge of recycled water from the CWRP.

- A. **Technology-based Discharge Specifications.** The Order establishes technology based effluent specifications for biological oxygen demand, total suspended solids, and pH. These discharge specifications are based on design criteria for removal of these constituents by secondary wastewater treatment technology.
- B. **Water Quality-based Discharge Specifications.** The Order establishes water quality-based discharge specifications derived from the water quality objectives needed to support the beneficial uses of groundwater in the HA/HSAs in which recycled water from the CWRP is used, and on basin-specific objectives in Table 3 below (from Table 3-3 of the Basin Plan).

Table 3. Basin-Specific Groundwater Water Quality Objectives

| HYDROLOGIC AREA | CONSTITUENT (mg/L or as noted) | | | | | | | | | | | | |
|-------------------------------------|--|-----------------|-----------------|-----|------------------------------|-----|------|------|-----|------|------------|---------------|----------------|
| | (Concentrations not to be exceeded more than 10% of the time during any one year period) | | | | | | | | | | | | |
| | TDS | Cl ⁻ | SO ₄ | %Na | NO ₃ ⁻ | Fe | Mn | MBAS | B | ODOR | TURB (NTU) | COLOR (UNITS) | F ⁻ |
| El Salto HSA 904.21 ^a | 3,500 | 800 | 500 | 60 | 45 | 0.3 | 0.05 | 0.5 | 2.0 | None | 5 | 15 | 1.0 |
| Los Monos HSA 904.31 ^{a,c} | 3,500 | 800 | 500 | 60 | 45 | 0.3 | 0.05 | 0.5 | 2.0 | none | 5 | 15 | 1.0 |

⁸ State Water Board Resolution No. 68-16, *Policy with Respect to Maintaining High Quality of Waters in California.*

| HYDROLOGIC AREA | CONSTITUENT (mg/L or as noted) | | | | | | | | | | | | |
|--|--|------------------|-----------------|-----|------------------------------|------------------|-------------------|------|------------------|------|------------|---------------|----------------|
| | (Concentrations not to be exceeded more than 10% of the time during any one year period) | | | | | | | | | | | | |
| | TDS | Cl ⁻ | SO ₄ | %Na | NO ₃ ⁻ | Fe | Mn | MBAS | B | ODOR | TURB (NTU) | COLOR (UNITS) | F ⁻ |
| Encinas HA 904.4 ^a | 3,500 ^b | 800 ^b | 500 | 60 | 45 ^b | 0.3 ^b | 0.05 ^b | 0.5 | 2.0 ^b | none | 5 | 15 | 1.0 |
| Batiquitos HSA 904.51 ^{a,b,d} | 3,500 | 800 | 500 | 60 | 45 | 0.3 | 0.05 | 0.5 | 0.75 | none | 5 | 15 | 1.0 |
| Richland HSA 904.52 ^{a,b} | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |

Endnotes for Table 3

- a. The water quality objectives do not apply westerly of the easterly boundary of Interstate Highway 5. The objectives for the remainder of the Hydrologic Area (Subarea) are as shown.
- b. The water quality objectives do not apply to hydrologic subareas 4.51 and 4.52 between Highway 78 and El Camino Real and to all lands which drain to Moonlight Creek, Cottonwood Creek and Encinitas Creek. The objectives for the remainder of the Hydrologic Area are as shown.
- c. The water quality objectives apply to the portion of Subarea 4.31 bounded on the west by the easterly boundary of the Interstate 5 right-of-way and on the east by the easterly boundary of El Camino Real.
- d. The water quality objectives apply to the portion of Subarea 4.51 bounded on the south by the north shore of Batiquitos Lagoon, on the west by the easterly boundary of the Interstate 5 right-of-way and on the east by the easterly boundary of El Camino Real.

mg/L = milligrams per liter, TDS = Total Dissolved Solids, Cl⁻ = Chloride, SO₄ = Sulfate, % Na = Percent Sodium, NO₃⁻ = Nitrate, Fe = Iron, Mn = Manganese, MBAS = Methylene Blue Activated Substances, B = Boron, TURB = Turbidity, NTU = Nephelometric Turbidity Units, F⁻ = Fluoride

The Order eliminates the daily maximum and 30-day average discharge specifications for chloride and boron, and eliminates the daily maximum discharge specifications for TDS and sulfate. The Order also retains the annual average discharge specifications from the previous Order, and establishes new annual average discharge specifications for selected constituents. Compliance with the annual average discharge specifications for all constituents in the Order is based upon the calendar year rather than the running average of the previous 12 months. This change is appropriate because short-term fluctuations in recycled water quality may cause a running average discharge specification to be exceeded, but not adversely impact receiving groundwater quality in the long term. The use of annual average discharge specifications is appropriate for regulating mineral concentrations in recycled water

applications to land, as groundwater quality is not discernibly impacted by short-term differences in the quality of applied water, but can be influenced by long-term trends.

- C. **Title 22 Specifications.** This Order contains discharge specifications for chlorine residual, turbidity, chlorine contact time, and total coliform bacteria. These specifications are based upon concentration limits found in title 22 and recommendations from the DDW for the protection of human health at use sites. Recycled water from the CWRF discharged to reuse sites must meet the definition of “disinfected tertiary recycled water” in title 22 section 60301.230 and by reference “filtered wastewater” in title 22 section 60301.320, including future changes to the incorporated provisions as the changes take effect. The turbidity discharge specification in the Order is based on title 22 section 6031.320 (b) and requires that the turbidity of effluent from the microfiltration and ultrafiltration units not exceed 0.2 NTU more than 5 percent of the time within a 24-hour period and 0.5 NTU at any time.
- D. **Discharge Specifications for Order No. R9-2016-0183.** The discharge specifications contained in the Order are shown in Table 4.

Table 4. Discharge Specifications

| Constituent | Units | Daily Maximum ¹ | Monthly Average ² | Annual Average ³ |
|--|----------|---|------------------------------|-----------------------------|
| Biological Oxygen Demand (BOD ₅ @ 20°C) | mg/L | 45 | 30 | |
| Total Suspended Solids (TSS) | mg/L | 45 | 30 | |
| pH | pH units | Within the limits of 6.5-8.5 at all times | | |
| Total Dissolved Solids (TDS) | mg/L | - | - | 1,100 |
| Chloride (Cl) | mg/L | - | - | 350 |
| Sulfate (SO ₄) | mg/L | - | - | 350 |
| Percent Sodium (% Na) | % | - | - | 60% |
| Iron (Fe) | mg/L | - | - | 0.3 |
| Manganese (Mn) | mg/L | - | - | 0.1 |
| Methylene Blue- Activated Substances (MBAS) | mg/L | - | - | 0.5 |
| Boron (B) | mg/L | - | - | 0.75 |
| Fluoride (F) | mg/L | - | - | 1.0 |
| Aluminum | mg/L | - | - | 1.0 |
| Arsenic | mg/L | - | - | 0.05 |
| Antimony | mg/L | - | - | 0.006 |
| Barium | mg/L | - | - | 1.0 |
| Beryllium | mg/L | - | - | 0.004 |
| Cadmium | mg/L | - | - | 0.005 |
| Cyanide | mg/L | - | - | 0.2 |
| Mercury | mg/L | - | - | 0.002 |

| Constituent | Units | Daily Maximum ¹ | Monthly Average ² | Annual Average ³ |
|-------------|-------|----------------------------|------------------------------|-----------------------------|
| Nickel | mg/L | - | - | 0.1 |
| Perchlorate | mg/L | - | - | 0.006 |
| Selenium | mg/L | - | - | 0.05 |
| Thallium | mg/L | - | - | 0.002 |

¹The daily maximum discharge specification shall apply to the results of a single composite or grab sample representing non-overlapping 24 hour periods.

²The monthly average discharge specification shall apply to the arithmetic mean of the results of all samples collected during each calendar month.

³The annual average discharge specification shall apply to the arithmetic mean of the results of all samples collected during a calendar year period in accordance with the Monitoring and Reporting Program.

V. COMPLIANCE WITH THE ANTIDegradation POLICY

State Water Board Resolution No. 68-16, the *Statement of Policy with Respect to Maintaining High Quality of Waters in California* (the Antidegradation Policy) requires that disposal of waste into the waters of the State be regulated to achieve the highest water quality consistent with the maximum benefit to the people of the State. The quality of some waters is higher than established by adopted policies and that higher quality water must be maintained to the maximum extent possible consistent with the Antidegradation Policy. The Antidegradation Policy requires the following.

- Higher quality water will be maintained until it has been demonstrated to the State that any change will be consistent with the maximum benefit to the people of the State, will not unreasonably affect present and anticipated beneficial use of the water, and will not result in water quality less than that prescribed in the Basin Plan.
- Any activity that produces waste or may produce waste or increased volume or concentration of waste, and discharges to existing high quality waters will be required to meet waste discharge requirements that will result in the best practicable treatment or control of the discharge necessary to assure pollution or nuisance will not occur, and the highest water quality consistent with the maximum benefit to the people of the State will be maintained.

A. **Maximum Benefit to the People of the State.** In a semi-arid climate, such as that of the San Diego Region, the maximum benefit to the people of the State can only be achieved by ensuring long and short-term protection of economic opportunities, human health, and environmental protection. In order to do that, water uses must be better matched to water quality, and use of local supplies must be encouraged to the extent possible, including reusing treated wastewater that would otherwise flow to the ocean or

other salt sinks without supporting beneficial uses during transmission.⁹ The use of recycled water in place of both raw and potable water supplies for the non-potable uses allowed under this Order improves water supply availability and helps to ensure that higher quality water will continue to be available for human uses and for in stream uses for fish and wildlife. The limited degradation of receiving groundwater that may occur as the result of recycling under the conditions of the Order provides maximum benefit to the people of the State, provided recycled water treatment and use are managed to ensure long-term reasonable protection of beneficial uses of waters of the State.

B. Present and Anticipated Uses of Water and Water Quality Prescribed in the Basin Plan. Constituents associated with recycled water that have the potential to degrade groundwater quality include Total Dissolved Solids (TDS or salts), nutrients, pathogens (represented by coliform bacteria), disinfection by-products (DBPs), and other mineral constituents. The use of recycled water permitted under the Order will not unreasonably affect present and anticipated beneficial uses or result in water quality that is less than that prescribed in the Basin Plan because of the following characteristics of the discharge and Order requirements associated with each of the recycled water constituents of concern. Each of the recycled water constituents are discussed below.

1. The TDS groundwater quality objective for the HA/HSAs in which recycled water from the CWRP is used is 3,500 mg/L. Some portions of the HAs/HSAs have no designated beneficial uses for groundwater, thus no groundwater quality objectives apply in these areas. Average annual TDS concentrations in recycled water between 2010-2015 ranged from 927-1037 mg/L, which is well below the TDS groundwater quality objective of 3,500 mg/L. As a result, the use of recycled water from the CWRP is not expected to cause the concentration of TDS in groundwater to exceed the TDS groundwater quality objective nor to further degrade the TDS quality of the groundwater.
2. Nitrogen is a nutrient that may be present in recycled water at a concentration that can degrade groundwater quality. This Order requires end users to take into consideration nutrient levels in recycled water and nutrient demand by plants when using recycled water for landscape irrigation. Application of recycled water at agronomic rates considers nutrient and water demand, and minimizes the movement of nutrients below the plant's root zone. When applied to cropped or landscaped areas, some of the nitrogen in recycled water will be taken up by the plants, and lost to the atmosphere through volatilization of ammonia or denitrification. The Rules and Regulations for Recycled Water Use (Attachment B) require recycled water supervisors to ensure that recycled water and fertilizer are applied to landscapes at agronomic rates in end use areas, and to avoid overwatering. Furthermore, supervisors are required to receive the training needed to manage fertilizer and recycled water applications to achieve agronomic rates. The Discharger is required to inform the recycled water supervisors of the nitrogen

⁹ The Legislature also expressed its intent that the State undertake all possible steps to encourage development of water recycling facilities so that recycled water may be made available to help meet the growing water requirements of the state (Water Code section 13512).

content of the recycled water supplied for irrigation. These requirements are expected to prevent the use of recycled water from impairing an existing or potential beneficial use of groundwater. Nonetheless, the Order includes a special provision that the Discharger conduct a nitrate study to verify that the discharge of recycled water will not cause receiving groundwater to exceed 45 mg/L in areas with nitrate groundwater quality objectives where recycled water is applied to the landscape. The result of the study will enable the San Diego Water Board to determine if a discharge specification for total nitrogen should be added to the Order in the future.

3. Pathogens and other microorganisms may be present in recycled water depending upon the disinfection status of the recycled water. Recycled water from the CWRP has been treated to levels that comply with discharge specifications contained in the Order pursuant to the Basin Plan and title 22 requirements. Treatment technologies required under title 22 include secondary treatment, tertiary treatment, and disinfection for pathogen removal. Title 22 imposes limitations on the uses of recycled water based on the level of treatment and the specific uses in order to protect human health. This Order restricts the uses of recycled water to be consistent with title 22 requirements ensuring that recycled water is used safely.

Coliform bacteria are used as a surrogate (indicator) for pathogens because they are present in untreated wastewater, survive in the environment similar to pathogenic bacteria, and are easy to detect and quantify. Pathogens are generally limited in their environmental mobility when applied to land.

Setbacks from recycled water use areas are required in, title 22 as a means of reducing pathogenic risks by coupling pathogen inactivation rates with groundwater travel time to a well or other potential exposure route such as water contact activities. In general, a substantial unsaturated zone reduces pathogen survival compared to saturated soil conditions. Fine grained soil particles, like silt or clay, reduce the rate of groundwater transport and therefore are generally less likely to allow transport of pathogens in groundwater. Setbacks also provide attenuation of other recycled water constituents through physical, chemical, and biological processes. Attachment B of the Order requires the Discharger to include requirements for implementing and maintaining adequate setback distances in the end use areas from drinking water wells. These requirements must be specified in the Discharger's Rules and Regulations for Recycled Water Use. This Order also requires the Discharger to treat recycled water to meet disinfection requirements for pathogens for tertiary treated recycled water as specified in title 22.

4. Disinfection by-products consisting of organic and inorganic substances may be present in recycled water. These by-products may be produced by the interaction of chemical disinfectants with naturally occurring substances in the water source. Common disinfection by-products (DBPs) include trihalomethanes, haloacetic acids, bromate, and chlorite. DBPs present in recycled water receive additional treatment when applied to land. Biodegradation, adsorption, volatilization, and other attenuative processes that occur naturally in soil will reduce the concentrations and retard migration of DBPs in the subsurface.

5. Average annual concentrations for manganese in recycled water from 2011-2015 ranged from 0.06-0.08 mg/L which exceeds the groundwater quality objective for manganese of 0.05 mg/L. The annual average discharge specification for manganese specified in the Order is 0.1 mg/L, which also exceeds the groundwater quality objective for manganese. This discharge specification is carried over from the previous Order as explained below.

Manganese is an essential nutrient for plant growth. Uptake of manganese by vegetation irrigated with recycled water will reduce the potential for manganese to affect groundwater quality or impact beneficial uses. The discharge specification for manganese in the Discharger's previous Order was raised to 0.1 mg/L based on a Report of Waste Discharge (ROWD) submitted by the Discharger in June 2011. The Discharger reported in the aforementioned ROWD that most of the use areas are planted in turf grass. The annual mass of manganese in recycled water applied to irrigated areas from applied water containing manganese at a concentration of 0.1 mg/L is 0.65 pounds/acre (lbs/ac), while typical annual manganese demand of turf grass is estimated to be in the range of 0.5-1lb/ac. As a result, uptake of manganese by vegetation in the end use areas is expected to prevent the use of recycled water from causing manganese concentrations in groundwater to exceed 0.05 mg/L.

In addition, the groundwater quality objective of 0.05 mg/L is also the secondary drinking water standard for manganese. Elevated levels of manganese in water supplies can cause unpleasant tastes, deposits on food during cooking, stains and discolors laundry and plumbing fixtures, but is not expected to cause adverse human health effects.

VI. RATIONALE FOR WATER RECYCLING REQUIREMENTS

Water recycling requirements are included in this Order pursuant to Water Code section 13523 and are based on recommendations from the DDW. In accordance with title 22, the DDW reviews Engineering Reports for the production, distribution, and use of recycled water. The San Diego Water Board relies on the expertise of the DDW and includes recommendations from DDW in WDRs to ensure recycled water is treated and used in a manner that protects human health. The Discharger has prepared an Engineering Report pursuant to title 22, section 60323. The Engineering Report identifies the means of compliance with the applicable sections of title 22, and has been reviewed by the DDW. The Order also requires the Discharger to maintain Rules and Regulations for Recycled Water Use (Attachment B) that comply with DDW's requirements. The Rules and Regulations must include an inspection and cross-connection testing program.

VII. RATIONALE FOR STANDARD PROVISIONS, SPECIAL PROVISIONS, AND NOTIFICATIONS

A. Standard Provisions

The standard provisions contain language that allows the San Diego Water Board to enforce Order No. R9-2016-0183. Provisions include need for inspection, spill and

emergency reporting, records maintenance, and reporting of changes. Standard provisions apply to all WDRs and are consistent with San Diego Water Board findings.

B. Special Provisions- Facility Design and Operation Specifications

The CWRP was designed and constructed in accordance with an Engineering Report which was reviewed by the DDW. The Design and Operation Specifications in the Order require that the CWRP be operated and recycled water be distributed in accordance with the Engineering Report; and require the Discharger to comply with all applicable sections of titles 17 and 22 to ensure recycled water is treated and distributed in a manner that is protective of public health. The Design and Operation Specifications in the Order also require that the plant be operated by appropriately certified wastewater operators, require application of recycled water and fertilizer in end use sites at agronomic rates, require maintenance of a facility operation manual and appropriate references, and require implementation of best management practices for protection of human health.

As previously mentioned, this Order includes a special provision that the Discharger conduct a nitrate study to verify that the use of recycled water for landscape irrigation will not cause receiving groundwater to exceed 45 mg/L. If not, the San Diego Water Board will amend the Order to add a discharge specification for total nitrogen.

C. Notifications

Notifications are included in the Order to inform the Discharger of administrative issues regarding this Order.

VIII. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

The purpose of Monitoring and Reporting Program (MRP) No. R9-2016-0183 (the MRP) is to determine and ensure compliance with discharge specifications and other requirements established in this Order, assess treatment efficiency, and characterize effluents to evaluate the potential effects of the discharge on the receiving water. The MRP also specifies requirements concerning the proper use, maintenance, and installation of monitoring equipment and methods, and the monitoring type intervals and frequency necessary to yield data that are representative of the activities and discharges regulated under this Order.

The MRP is issued pursuant to Water Code section 13267, which authorizes the San Diego Water Board to require the Discharger to furnish technical and monitoring reports. The use of laboratories evaluated and accredited under the DDW's Environmental Laboratory Accreditation Program, and implementation of proper quality assurance and control procedures ensures the reliability and validity of the data as well as consistency and comparability with regulations.

Consistent with the Framework for Monitoring and Assessment in the San Diego Region,¹⁰ which requires that all monitoring be question driven, the monitoring required by the MRP is designed to answer the two overarching questions below.

- Will the production, conveyance, and end use of recycled water regulated by this Order be done in a manner that protects public health and the environment?
- Is groundwater designated for municipal and domestic use safe to drink in irrigation end use areas regulated by this Order?

The MRP has two basic components; effluent quality monitoring, and recycled water production and distribution monitoring. Monitoring required by the MRP for these two components is designed to answer the following specific monitoring questions that relate to the overarching questions.

1. Effluent monitoring consists of the basic site-specific monitoring necessary to measure compliance with individual effluent discharge specifications and/or assess potential impacts to groundwater water quality. Monitoring is typically conducted at the end of the treatment process and prior to distribution of recycled water to use sites. Effluent monitoring will answer the following questions.
 - a. Does the effluent comply with permit discharge specifications and other requirements of this Order, thereby ensuring that water quality objectives are achieved in the groundwater?
 - b. Does the effluent comply with the statewide treatment standards for recycled water, as required by title 22?
 - c. Is the Facility being properly operated and maintained to ensure compliance with the conditions of the Order?
2. Recycled water distribution monitoring provides information necessary to track the distribution of recycled water in the San Diego Region. This information provides an essential part of a cumulative picture of the distribution and use of recycled water within the San Diego Region.

Collection and analysis of recycled water production and use site data will help answer the following questions.

- a. What is the total volume of recycled water produced from the CWRP?
- b. Where are the recycled water use sites located?
- c. What is the volume of recycled water delivered to each use site?
- d. What is the level of compliance with Rules and Regulations at recycled water reuse sites?

¹⁰ California Regional Water Quality Control Board, San Diego Region, Staff Report, November 2012.

IX. PUBLIC PARTICIPATION

Two of the four values of the San Diego Water Board espoused in its Practical Vision are communication and transparency. Participation of the public in the decision making process of the Board is a hallmark of the board governmental structure in California and essential to this Board's success. The San Diego Water Board has taken the following steps to encourage public participation in the adoption process for this Master Recycling Permit and Monitoring and Reporting Program.

A. Notification of Interested Parties

Consistent with Water Code section 13167.5, the San Diego Water Board notified the Discharger and interested agencies and persons of its intent to adopt a Master Recycling Permit and Monitoring and Reporting Program for the discharge and made Order No. R9-2016-0183 available on its website. Furthermore, the San Diego Water Board provided the public with an opportunity to submit their written comments and recommendations. Notification was provided through the San Diego Water Board website and board meeting agenda publication.

B. Written Comments

Interested parties and persons were invited to submit written comments concerning Order No. R9-2016-0183. Comments were submitted either in person, in writing, or by email including a signed cover/transmittal letter sent via email to sandiego@waterboards.ca.gov. Written comments were received before the **November 15, 2016** due date.

C. Public Hearing

The San Diego Water Board held a public hearing to consider adoption of Order No. R9-2016-0183 during its regular Board meeting on the following date and time, and at the following location:

Date: **December 14, 2016**
Time: **9:00 am**
Location: **2375 Northside Drive, Suite 100**
San Diego, CA 92108

D. Waste Discharge Requirements Petitions

Any aggrieved person may petition the State Water Resources Control Board to review the decision of the San Diego Water Board regarding the final WDRs. The petition must be submitted within 30 days of the San Diego Water Board's action to the following address:

State Water Resources Control Board
Office of Chief Counsel
P.O. Box 100, 1001 I Street
Sacramento, CA 95812-0100

E. Information and Copying

This Order, the Report of Waste Discharge (ROWD), related documents, comments received, and other information are on file and may be inspected at the address above at any time between 8:30 a.m. and 4:45 p.m., Monday through Friday. Copying of documents may be arranged through the San Diego Water Board by calling 619-516-1990.

F. Register of Interested Persons

Any person interested in being placed on the mailing list for information regarding the Order should contact Mr. Fisayo Osibodu at (619) 521-8036 or at Olufisayo.Osibodu@waterboards.ca.gov reference this facility, and provide a name, address, phone number, and email address.

G. Additional Information

Requests for additional information or questions regarding this order should be directed to Mr. Fisayo Osibodu at (619) 521-8036 or at Olufisayo.Osibodu@waterboards.ca.gov.

ATTACHMENT D

MONITORING AND REPORTING PROGRAM NO. R9-2016-0183

FOR CARLSBAD MUNICIPAL WATER DISTRICT CARLSBAD WATER RECYCLING FACILITY, SAN DIEGO COUNTY

This Monitoring and Reporting Program (MRP) is issued to the Carlsbad Municipal Water District (Discharger) pursuant to Water Code section 13267, which authorizes the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) to require the Discharger to furnish technical and monitoring reports. The San Diego Water Board Executive Officer has the authority to modify this MRP as appropriate. Monitoring in accordance with this MRP shall begin on January 1, 2017.

I. GENERAL MONITORING PROVISIONS

- A. Samples and measurements collected as required herein shall be representative of the volume and nature of the monitored discharge. All samples shall be collected at the monitoring points specified in this MRP and, unless otherwise specified, before the effluent joins or is diluted by any other waste stream, body of water or substance. Monitoring points shall not be changed without notifying, and receiving approval from the San Diego Water Board for the proposed monitoring location change.
- B. Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. The devices shall be installed, calibrated, and maintained to ensure that the accuracy of the measurements is consistent with the accepted capability of that type of device. Devices selected shall be capable of measuring flows with a maximum deviation of less than 10 percent from true discharge rates throughout the range of expected discharge volumes.
- C. Monitoring must be conducted according to United States Environmental Protection Agency (USEPA) test procedures approved under 40, Code of Federal Regulations (CFR), part 136, *Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act* (USEPA Guidelines) as amended, unless other test procedures have been specified in this MRP.
- D. Unless otherwise permitted by the San Diego Water Board, all analyses shall be conducted at a laboratory certified to perform such analyses by the State Water Resources Control Board Division of Drinking Water (DDW). The Discharger must use a laboratory capable of producing and providing quality assurance/quality control (QA/QC) records for San Diego Water Board review. The director of the laboratory whose name appears on the certification must supervise all analytical work in his/her laboratory and must sign all reports submitted to the San Diego Water Board.
- E. Any report presenting new analytical data is required to include the complete laboratory and analytical report(s). The laboratory analytical report must be signed by the laboratory director and contain:

1. A complete sample analytical report.
 2. A complete laboratory quality assurance/quality control (QA/QC) report.
 3. A discussion of the QA/QC data.
 4. A transmittal letter indicating whether or not all the analytical work was supervised by the director of the laboratory. The transmittal laboratory must contain the following statement, "All analyses were conducted at a laboratory certified for such analyses by the DDW in accordance with current USEPA procedures."
- F. Specific methods of analysis must be identified in the Discharger's monitoring reports. If the Discharger proposes to use methods or test procedures other than those included in the most current version of the USEPA Guidelines, the exact methodology must be submitted for review and must be approved by the San Diego Water Board prior to use.
- G. The Discharger shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation and copies of all reports required by this MRP, and records of all data used to complete the Report of Waste Discharge (ROWD) for Order No. R9-2016-0183 and any subsequent ROWDs. Records shall be maintained for a minimum of five years from the date of the sample, measurement, report or ROWD. This period may be extended during the course of any unresolved litigation regarding this discharge or when required by the San Diego Water Board. Records of monitoring information shall include the following:
1. The date, exact place, and time of sampling or measurements.
 2. The individual(s) who performed the sampling or measurements.
 3. The date(s) analyses were performed.
 4. The individual(s) who performed the analyses.
 5. The analytical techniques or methods used.
 6. The results of such analyses.
- H. All monitoring instruments and devices that are used by the Discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary to ensure their continued accuracy.
- I. All applications, reports, or information submitted to the San Diego Water Board shall be signed and certified as follows:
1. The Report of Waste Discharge shall be signed as follows.

- a. For a corporation- by a principal Executive Officer of at least the level of Vice President.
 - b. For a partnership or sole proprietorship- by a general partner or the proprietor, respectively.
 - c. For a municipality, State, federal or other public agency- by either a public Executive Officer or ranking elected officials.
2. All other reports required by Order No. R9-2016-0183 and other information required by the San Diego Water Board shall be signed by a person designated in Section I.1 or a duly authorized representative of that person. An individual is duly authorized representative only if the following are true:
- a. The authorization is made in writing by a person described in Section I.1;
 - b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity; and
 - c. The written authorization is submitted to the San Diego Water Board.
3. Any person signing a document under this section shall make the following certification:
- "I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."
- J. A composite sample is defined as a combination of at least eight sample aliquots of at least 100 milliliters, collected at periodic intervals during the operating hours of a facility over a 24-hour period. For volatile pollutants, aliquots must be combined in the laboratory immediately before analysis. The composite must be flow proportional; either the time interval between each aliquot or the volume of each aliquot must be proportional to either the stream flow at the time of sampling or the total stream flow since the collection of the previous aliquot. Aliquots may be collected manually or automatically.
- K. A grab sample is an individual sample of at least 100 milliliters collected at a randomly selected time over a period not exceeding 15 minutes.
- L. The Discharger shall identify all missing or non-valid monitoring or sampling results in monitoring reports submitted. All instances of missing or non-valid results must be accompanied by an explanation of their root cause and the steps the Discharger has or will take to prevent future instances. Missing or non-valid results may be considered violations of Order No. R9-2016-0183 that could result in enforcement action depending

on the frequency of such instances and efforts by the Discharger to prevent such failures.

II. DISCHARGE MONITORING REQUIREMENTS

A. Effluent Monitoring Requirements

1. Effluent that will be discharged to landscape irrigation sites or reuse sites subject to Water Recycling Criteria specified in title 22, shall be monitored downstream from the chlorine contact basin. Required effluent monitoring is shown in Table 1. Required monitoring for constituents specified in Table 1 shall begin on January 1, 2017.
2. Effluent samples collected to determine turbidity (when required) shall be collected after the media filters. Effluent tertiary turbidity analyses shall be conducted continuously using a continuous monitoring and recording turbidity meter. Compliance with the daily average operating filter effluent turbidity limit of 2 NTU shall be determined using levels of recorded turbidity taken at a minimum of four-hour intervals over a 24-hour period. Compliance with the turbidity standard of not exceeding 0.2 NTU from the microfiltration or ultrafiltration or 5 NTU more than 5 percent of the time from the granular media filters over a 24-hour period shall be determined using the levels of recorded turbidity taken at intervals of no more than 1.2 hours over a 24-hour period. Should the continuous turbidity meter and/or recorder fail, grab sampling at a minimum frequency of 1.2 hours may be substituted for a period of up to 24 hours. The Discharger shall report monthly results of four-hour turbidity readings, average effluent turbidity (24-hours), 95 percentile effluent turbidity (24-hours), and daily maximum turbidity readings.
3. Turbidity of the combined microfiltration and ultrafiltration units effluent shall be measured prior to the break tank to demonstrate compliance with section 60301.32 (b) of title 22, and section III.E of Order No. R9-2016-0183. Turbidity of the granular media filters shall be measured from each individual unit or from the combined effluent of the two units.

Table 1. Effluent Monitoring

| Parameter | Units | Sample Type | Minimum Sampling Frequency ^{a,b} | Reporting Frequency |
|--|------------|-------------|---|---------------------|
| Flow Rate | mgd | Continuous | Continuous | Monthly |
| Chlorine Residual ^c | mg/L | Continuous | Continuous | Monthly |
| Chlorine-Contact Time (CT) ^c | mg-min/L | Continuous | Continuous | Monthly |
| Total Coliform Bacteria ^d | MPN/100 mL | Grab | Daily | Monthly |
| Turbidity ^e | NTU | Continuous | Continuous | Monthly |
| Biological Oxygen Demand (BOD ₅ @ 20°C) | mg/L | Composite | Weekly | Monthly |
| Total Suspended Solids | mg/L | Composite | Weekly | Monthly |
| pH | pH units | Grab | Weekly | Monthly |

| Parameter | Units | Sample Type | Minimum Sampling Frequency ^{a,b} | Reporting Frequency |
|--|-------|-------------|---|---------------------|
| Chloride (Cl) | mg/L | Composite | Quarterly | Quarterly |
| Sulfate (SO ₄) | mg/L | Composite | Quarterly | Quarterly |
| Percent Sodium (% Na) | % | Composite | Quarterly | Quarterly |
| Nitrate (NO ₃) | mg/L | Composite | Quarterly | Quarterly |
| Total Nitrogen | mg/L | Composite | Quarterly | Quarterly |
| Iron (Fe) | mg/L | Composite | Quarterly | Quarterly |
| Manganese (Mn) | mg/L | Composite | Quarterly | Quarterly |
| Methylene Blue-Activated Substances (MBAS) | mg/L | Composite | Quarterly | Quarterly |
| Boron (B) | mg/L | Composite | Quarterly | Quarterly |
| Fluoride (F) | mg/L | Composite | Quarterly | Quarterly |
| Total Dissolved Solids (TDS) | mg/L | Composite | Quarterly | Quarterly |
| Aluminum | mg/L | Composite | Annually | Annually |
| Barium | mg/L | Composite | Annually | Annually |
| Perchlorate | mg/L | Composite | Annually | Annually |
| Priority Pollutants ^f | mg/L | Composite | Annually | Annually |

- a. The Discharger shall increase the sampling frequency from weekly to daily, from quarterly to monthly, and from annually to quarterly for any constituent that exceeds the discharge specifications of this Order. The increased frequency of monitoring shall continue until the Discharger achieves compliance with the specification for three consecutive periods, at which point the Discharger shall resume sampling at the specified frequency.
- b. Weekly is defined as a calendar week (Sunday through Saturday). Monthly is defined as a calendar month. Quarterly is defined as a period of three consecutive calendar months beginning on January 1, April 1, July 1, or October 1. Annually is defined as a period of 12 consecutive calendar months beginning on January 1.
- c. Calculated CT (chlorine concentration multiplied by modal contact time) values shall be determined and recorded continuously. The daily minimum CT value shall be reported monthly. The Discharger shall report monthly the date(s), value(s), time and duration when the CT value falls below 450 mg-min/L, and/or the modal contact time falls below 90 minutes.
- d. Samples for total coliform bacteria shall be collected at least daily and at a time when wastewater characteristics are most demanding on the treatment facilities and disinfection procedures. Results of daily coliform bacteria monitoring, running 7-day median determination shall be reported monthly.
- e. See Sections II. A. 2 and II.A.3 of this MRP.
- f. Priority pollutant monitoring is required by Section 7.b.4 of the State Water Board *Recycled Water Policy*. Priority pollutants are constituents listed in Appendix A to the 40 Code of Federal Regulations part 423.

III. RECYCLED WATER REPORTS

- A. The Discharger shall submit quarterly recycled water users' summary reports containing the following information.
 - 1. Total volume of recycled water supplied to all recycled water users for each month of the reporting period.

2. Total number of recycled water use sites receiving recycled water.
 3. Address of the recycled water use site.
 4. Basin Plan name and number of hydrologic subarea underlying the recycled water use sites.
- B. The Discharger shall submit annual recycled water users' compliance reports containing the following information:
1. Recycled water use site summary report
 - a. Name of each recycled water reuse site.
 - b. Owner of each recycled water use facility.
 - c. Address of each reuse site.
 - d. Name of the recycled water on-site user supervisor.
 - e. Phone number of the on-site user supervisor.
 - f. Mailing address of the recycled water on-site use supervisor, if different from site address.
 - g. Volume of reclaimed water delivered to each reuse site for each of the 12 months in a calendar year.
 - h. Total area (in acres) of each landscape irrigation site.
 - i. The amount of nitrogen (in pounds per acre per year) applied in recycled water on each landscape irrigation site.

2. Recycled water user site inspections.

The Discharger shall report the number of recycled water reuse site inspections conducted by its staff and identify the sites inspected for the reporting period.

3. Recycled water user violations of the Discharger's rules and regulations.

The Discharger shall identify all recycled water users known to be in violation of its rules and regulations for recycled water users. The report shall include a description of the noncompliance and its cause, including the period of noncompliance, and if the noncompliance has not been corrected; the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.

- C. If the Discharger establishes recycled water fill stations, then the following information shall also be included in the annual recycled water compliance report.
1. A list of all approved residential and commercial recycled water haulers. The Discharger's annual list must indicate any new recycled water haulers that were approved during the calendar year.
 2. A list of users receiving or proposing to receive recycled water from the fill stations (including a list of uses of recycled water for each user).
 3. A list of recycled water end use sites outside the Discharger's recycled water service area.
 4. A summary of the volume of recycled water used (in acre feet) from the fill stations each quarter during the calendar year.
 5. A summary table of all inspections conducted of recycled water use sites which received water from the fill stations during the calendar year, and enforcement and corrective actions initiated by the Discharger during the calendar year. Include a discussion of compliance and the corrective action taken, as well as any planned or proposed actions needed to bring the discharge into compliance with the Order. Copies of any enforcement actions taken by the Discharger shall be provided to DDW, the San Diego Water Board, and County DEH.
 6. An evaluation of the performance of the recycled water treatment facility, including discussion of capacity issues, system problems, and a forecast of the flows anticipated in the next year.
 7. The name and contact information for the recycled water operator/staff responsible for overseeing operation, maintenance, and system monitoring of the fill stations.
- D The Discharger shall submit results of a nitrate study by June 15, 2018 which demonstrates whether or not the discharge from the plant will cause groundwater to exceed the proposed groundwater quality objective for nitrate of 45 mg/L as nitrate (in areas with applicable numerical groundwater quality objectives). The nitrate study must evaluate factors such as existing nitrogen removal achieved at the plant, need for additional treatment processes to remove nitrate, fate and transport of nitrogen in the groundwater, nitrate uptake rates by vegetation in the use sites, groundwater monitoring, application of recycled water and fertilizer at agronomic rates, and other best management practices. A workplan for the nitrate study must be submitted by September 15, 2017 which identifies proposed tasks and milestones for completing the nitrate study.

IV. REPORTING REQUIREMENTS

- A. The Discharger shall prepare Self-Monitoring Reports (SMR) that include the results of all monitoring specified in Section II (Discharge Monitoring Requirements) of this MRP. If the Discharger monitors any pollutant more frequently than required by this Order, the results of this monitoring shall be included in the calculations and reporting of the data submitted in the SMR.
- B. Monitoring periods and reporting for all required monitoring shall be completed according to the schedule in Table 2:


Table 2. Monitoring Periods and Reporting Schedule

| Sampling Frequency | Monitoring Period | SMR Due Date |
|---------------------------|---|---|
| Continuous | All | Submit with monthly SMR |
| Daily | Daily | Submit with monthly SMR |
| Monthly | January, February, March, April, May, June, July, August, September, October, November, December | By the first day of the second month following sampling (i.e March 1 for January) |
| Quarterly | January 1 through March 30 April 1 through June 30 July 1 through September 30 October 1 through December 31 | May 1 August 1 November 1 February 1 |
| Annually | January 1 through December 31 | February 1 |

Laboratory reporting limits shall be lower than or equal to the discharge specifications. Constituents not detected below the method detection limit shall be reported as non-detect with the applicable value (e.g. ND<0.05 mg/L). Constituents detected between the laboratory reporting limit and method detection limit shall be reported as “estimated concentrations” or noted with appropriate laboratory flags.

- C. The Discharger shall furnish SMRs in accordance with the following requirements:
 - 1. The Discharger shall arrange all reported data in a tabular format. The data shall be summarized to clearly illustrate whether the facility is operating in compliance with discharge specifications.
 - 2. The Discharger shall attach a cover letter to the SMR. The information contained in the cover letter shall clearly identify violations of the Master Recycling Permit; discuss corrective actions taken or planned; and the proposed time schedule for corrective actions. For identified violations, the letter must include a description of the requirement that was violated and a description of the violation.

3. SMRs must be submitted in text searchable PDF format to the San Diego Water Board via email. The email submittals must include a signed cover/transmittal letter (with the facility name, facility contact information, and reference code), and, unless directed otherwise by the Executive Officer, be sent via email to sandiego@waterboards.ca.gov.

Ordered by: 
David W. Gibson
Executive Officer
DATE: December 14, 2016