

State of California
California Regional Water Quality Control Board
Santa Ana Region

December 12, 2014

STAFF REPORT

ITEM: *9

SUBJECT: Amendment of Order No. R8-2004-0002, Producer/User Water Recycling Requirements for Orange County Water District's Interim Water Factory 21 and Groundwater Replenishment System – Order No. R8-20014-0054

DISCUSSION:

On March 12, 2004, the California Regional Water Quality Control Board, Santa Ana Region (Regional Board), adopted Order No. R8-2004-0002, prescribing Producer/User Water Recycling Requirements for the Orange County Water District (OCWD) for the operation of Interim Water Factory 21 and the Groundwater Replenishment System (GWRS) for groundwater recharge. On July 18, 2008, the Regional Board adopted Order No. R8-2008-0058, which amended Order No. R8-2004-0002 to modify findings and provisions regarding tracer studies and monitoring wells associated with GWRS.

OCWD operated Interim Water Factory 21 until it was secured and demolished in 2006. OCWD expanded its groundwater recharge operations and now operates GWRS, which began operations in 2008. GWRS includes the advanced water purification facility (AWPF), the Talbert Gap Seawater Intrusion Barrier and Kraemer/Miller Recharge Basins. The permitted recycled water production capacity of AWPF is 70 million-gallons-per-day (MGD). The AWPF currently produces a monthly average of 67 MGD of recycled water for direct aquifer injection and recharge at OCWD's spreading basins located at the Anaheim Forebay.

OCWD proposes to expand the recycled water production capacity of the AWPF from 70 MGD to 100 MGD. The 30 MGD expansion includes the additions of two reservoirs, a new screening unit, microfiltration cells, cartridge filters, RO membrane cells, ultraviolet irradiation reactors, decarbonation towers, lime saturator unit, Forebay pump unit and other ancillary equipment. OCWD is in the process of building the 30-MGD recycled water production capacity expansion and plans to complete the construction phase and commence startup activities by the first quarter of 2015.

OCWD documented the expansion plans in a report entitled, "Title 22 Engineering Report for the GWRS", dated May 2011. In addition, the report includes a proposal to begin the use of the new Miraloma recharge basin located in the Anaheim Forebay. This basin is adjacent to the existing Kraemer/Miller Recharge Basins. Also, as required under Order No. R8-2004-0002, the report proposed a modified six-month retention time buffer zone associated with the operation of the Kraemer/Miller/Miraloma Recharge Basins that does not affect domestic drinking water wells. This proposed modified buffer zone for the Kraemer/Miller/Miraloma Recharge Basins was adopted by the OCWD Board of Directors as an official resolution in July 2012. To prevent the

construction of new drinking water wells within the modified buffer zone, the resolution was then transmitted to the local well permitting authorities: the Orange County Well Standards Advisory Board, the City of Anaheim and the Orange County Health Care Agency.

In a letter dated May 11, 2012, staff of the California Department of Public Health (CDPH) did not object to OCWD's 30-MGD recycled water production capacity expansion of their AWPf and to the use of the Miraloma recharge basin for recycled water spreading operations. Also, CDPH staff accepted the proposed modified buffer zone for the Kraemer/Miller/Miraloma Recharge Basins. Regional Board staff concurred with CDPH staff findings and issued a letter to OCWD, dated May 31, 2012, to document the decision.

It is appropriate to modify Order No. R8-2004-0002, as amended by Order No. R8-2008-0058, and the monitoring and reporting program to allow OCWD to operate at a recycled water production capacity of up to 100 MGD and use the Miraloma recharge basin for recycled water spreading operations.

The proposed amendment will also change any references to the *Kraemer/Miller* basins throughout the Order and the Monitoring and Reporting Program to the *Kraemer/Miller/Miraloma* basins. In addition, the following shows the other proposed changes to the Order. Additions are **bold and highlighted**. Deletions are shown in ~~strike-out type~~.

1. Order No. R8-2004-0002, Finding 12, page 5:
12. In September 2000, OCWD submitted to the California State Department of Health Services (CDHS) a Title 22 Engineering Report for the GWRS. In August 2001, OCWD submitted to the CDHS Addenda Nos. 1, 2, 3, and 4 to the GWRS Engineering Report to provide responses to CDHS' comments on the Engineering Report. In March 2003, OCWD submitted to the CDHS responses to CDHS' comments on the Addenda.

In May 2011, OCWD submitted to the California Department of Public Health (formerly CDHS) a Title 22 Engineering Report Update for GWRS, which included a proposal to expand the recycled water production capacity of the AWPf from 70 MGD to 100 MGD and the use of the Miraloma recharge basin for recycled water spreading operations. Also, the May 2011 Title 22 Engineering Report Update contained a proposal to replace the 6-month retention time buffer zone for the operations of the Kraemer/Miller Recharge Basins with a modified buffer zone for the operation of Kraemer/Miller/Miraloma Recharge Basins.

2. Order No. R8-2004-0002, Finding 13, page 5:

13. The CDHS conducted multiple meetings and discussions with OCWD about the GWRS. On February 4, 2003, CDHS held a public hearing in Fountain Valley, California, to consider the GWRS. A summary of that public hearing is included in this Order as Attachment A. This summary includes "Findings of Fact" and "Conditions". CDHS found that the proposed project complies with Section 60320 of Article 5.1, entitled "Groundwater Recharge" of the California Code of Regulations, Title 22, Division 4, Chapter 3, entitled "Water Recycling Criteria". CDHS found further that the GWRS AWTF processes are considered to be the best available advanced wastewater and recycled water treatment technology at this time. CDHS also found that the proposed operation of the Interim WF 21 and GWRS would not degrade the quality of the water in the receiving aquifers as a source of domestic water supply provided that OCWD meets the "Conditions" stipulated in the "Summary of Public Hearing⁴". CDHS recommended that the Regional Board incorporate all of the "Findings of Fact" and "Conditions" contained in the "Summary of Public Hearing" into the water reclamation requirements for OCWD for the Interim WF 21 and GWRS. This Order implements that recommendation. The "Findings of Fact" are herein incorporated in Attachment A. The Order requires the producer to satisfy the Conditions outlined in Findings of Fact by CDHS, with certain modifications based on discussions with CDHS and the producer. To the extent of any conflict between this Order and the CDHS "Conditions", the requirements of this Order shall govern.

In a letter dated May 11, 2012, CDPH staff did not object to OCWD's 30-MGD treatment expansion of the AWPf or to the use of the Miraloma recharge basin for recycled water spreading operations. Also, CDPH staff accepted the proposed modified buffer zone for the Kraemer/Miller/Miraloma Recharge Basins outlined in the report. Regional Board staff concurred with CDPH staff findings and issued a letter to OCWD, dated May 31, 2012, to document the decision.

3. Order No. R8-2004-0002, Recycled Water Quality Specifications, Section A.3., page 15:

3. The total volume of recycled water generated from GWRS for injection and/or recharge at surface spreading basins shall not exceed ~~70~~**100** mgd based on a monthly average flow (up to ~~78,400~~ **112,015** acre-feet per year (afy)).

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All other conditions and requirements of Order No. R8-2004-0002, as amended by Order No. R8-2008-0058, shall remain unchanged.

RECOMMENDATION:

Adopt Order No. R8-2014-0054, as presented.

COMMENT SOLICITATION:

Comments were solicited from OCWD and the following persons and agencies:

State Water Resources Control Board, Office of the Chief Counsel – David Rice
State Water Resources Control Board, Division of Drinking Water, Santa Ana Office –
Oliver Pacifico
Orange County Sanitation District - Robert P. Ghirelli
Orange County Sanitation District – Jim Colston
Orange County Health Care Agency, Santa Ana - Larry Honeybourne
DDB Engineering - Debbie Burris
Orange County Coastkeeper – Garry Brown
SPON, Newport Beach - Jack Skinner

State of California
California Regional Water Quality Control Board
Santa Ana Region

3737 Main Street, Suite 500, Riverside, California 92501-3348
Phone (951) 782-4130 - FAX (951) 781-6288 - TDD (951) 782-3221
<http://www.waterboards.ca.gov/santaana>

Order No. R8-2014-0054

Amending Order No. R8-2004-0002, as amended by Order No. R8-2008-0058
Producer/User Water Recycling Requirements
For
Orange County Water District
Interim Water Factory 21 and Groundwater Replenishment System
Groundwater Recharge and Reuse at
Talbert Gap Seawater Intrusion Barrier and Kraemer/Miller Recharge Basins
Orange County

The California Regional Water Quality Control Board, Santa Ana Region (hereinafter Regional Board), finds that:

1. On March 12, 2004, the Regional Board adopted Order No. R8-2004-0002, prescribing Producer/User Water Recycling Requirements for the Orange County Water District's (hereinafter OCWD or producer) Interim Water Factory 21 and Groundwater Replenishment System (GWRS) for groundwater recharge and reuse of recycled water at the Talbert Gap Seawater Intrusion Barrier and at Kraemer/Miller Recharge Basins in Orange County. On July 18, 2008, the Regional Board adopted Order No. R8-2008-0058, which amended Order No. R8-2004-0002 to modify findings and provisions regarding tracer studies and monitoring wells associated with GWRS.
2. OCWD operated Interim Water Factory 21 until it was secured and demolished in 2006. OCWD expanded its groundwater recharge operations and now operates GWRS, which began operations in 2008. GWRS includes the advanced water purification facility (AWPF), the Talbert Gap Seawater Intrusion Barrier and Kraemer/Miller Recharge Basins. The permitted design capacity of AWPF is 70 million-gallons-per-day (MGD). The AWPF currently produces a monthly average of 67 MGD of recycled water for direct aquifer injection and recharge at OCWD's spreading basins located at the Anaheim Forebay.
3. In a report entitled, "Title 22 Engineering Report for the GWRS", dated May 2011, OCWD proposed to expand the treatment capacity of the AWPF from 70 MGD to 100 MGD. The 30 MGD treatment expansion of the AWPF would include the additions of a new screening unit, microfiltration cells, cartridge filters, RO membrane cells, ultraviolet irradiation reactors, decarbonation towers, lime saturator unit, Forebay pump unit and other ancillary equipment. OCWD is in the process of building the 30-MGD treatment capacity expansion and plans to complete the construction phase and commence startup activities by the first quarter of 2015.

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4. The report includes a proposal to begin the use of the new Miraloma recharge basin located in the Anaheim Forebay and adjacent to the existing Kraemer/Miller Recharge Basins. Also, as required under Order No. R8-2004-0002, as amended by Order No. R8-2008-0058, the report proposed a modified six-month retention time buffer zone associated with the operation of the Kraemer/Miller/Miraloma Recharge Basins that do not affect domestic drinking water wells. The proposed modified buffer zone was derived by OCWD staff through a groundwater modeling analysis. This proposed modified buffer zone for the Kraemer/Miller/Miraloma Recharge Basins was adopted by the OCWD Board of Directors as an official resolution in July 2012. To prevent the construction of new drinking water wells within the modified buffer zone, the resolution was then transmitted to the local well permitting authorities: the Orange County Well Standards Advisory Board, the City of Anaheim and the Orange County Health Care Agency.
5. In a letter dated May 11, 2012, staff of the California Department of Public Health (CDPH)(now State Water Resources Control Board, Division of Drinking Water) did not object to OCWD's 30-MGD treatment capacity expansion of their AWPf and to the use of the Miraloma recharge basin for recycled water spreading operations. Also, CDPH staff accepted the proposed modified buffer zone for the Kraemer/Miller/Miraloma Recharge Basins. Regional Board staff concurred with CDPH staff findings and issued a letter to OCWD, dated May 31, 2012, to document the decision. It is appropriate to modify Order No. R8-2004-0002 to allow the producer to operate at a treatment capacity of up to 100 MGD and use the Miraloma recharge basin for recycled water spreading operations.
6. In compliance with the California Environmental Quality Act (Public Resources Code Section 21000 et seq.), OCWD prepared an Environmental Impact Report (EIR) for the new Miraloma recharge basin. The EIR was certified and approved by the OCWD Board of Directors on September 7, 2011. The EIR identified no significant adverse impact to water quality as a result of the use of recycled water in the new basin. Regional Board staff reviewed the EIR and independently made a determination that the project would not have a significant adverse water quality impact.
7. The Board has notified the producer and other interested agencies and persons of its intent to amend the producer/user water recycling requirements set forth in Order No. R8-2004-0002 and has provided them with an opportunity to submit their written views and recommendations.
8. The Regional Board, in a public meeting, heard and considered all comments pertaining to this amendment to the water recycling requirements.

IT IS HEREBY ORDERED that Order No. R8-2004-0002 be amended as follows:

1. Order No. R8-2004-0002, Finding 12, page 5 - Add the following at the end of the finding:

In May 2011, OCWD submitted to the California Department of Public Health (formerly CDHS) a Title 22 Engineering Report Update for GWRS, which included a proposal to expand the recycled water production capacity of the AWPf from 70 MGD to 100 MGD and the use of the Miraloma recharge basin for recycled water spreading operations. Also, the May 2011 Title 22 Engineering Report Update contained a proposal to replace the 6-month retention time buffer zone for the operations of the Kraemer/Miller Recharge Basins with a modified buffer zone for the operation of Kraemer/Miller/Miraloma Recharge Basins.

2. Order No. R8-2004-0002, Finding 13, page 5 - Add the following at the end of the finding:

In a letter dated May 11, 2012, CDPH staff did not object to OCWD's 30-MGD treatment expansion of the AWPf or to the use of the Miraloma recharge basin for recycled water spreading operations. Also, CDPH staff accepted the proposed modified buffer zone for the Kraemer/Miller/Miraloma Recharge Basins outlined in the report. Regional Board staff concurred with CDPH staff findings and issued a letter to OCWD, dated May 31, 2012, to document the decision.

3. Order No. R8-2004-0002, Finding 15, page 6 - Replace *Kraemer/Miller* with *Kraemer/Miller/Miraloma*.
4. Order No. R8-2004-0002, Finding 25, page 8 - Replace *Kraemer/Miller* with *Kraemer/Miller/Miraloma*.
5. Order No. R8-2004-0002, Finding 30, page 9 - Replace *Kraemer/Miller* with *Kraemer/Miller/Miraloma*.
6. Order No. R8-2004-0002, Recycled Water Quality Specifications, page 15 - Replace Section A.3., with the following:

The total volume of recycled water generated from GWRS for injection and/or recharge at surface spreading basins shall not exceed 100 mgd based on a monthly average flow (up to 112,015 acre-feet per year (afy)).

7. Order No. R8-2004-0002, Diluent Water Quality Specifications, Sections C.1. and C.2., page 17 - Replace *Kraemer/Miller* with *Kraemer/Miller/Miraloma*.
8. Order No. R8-2004-0002, Buffer Zone Specifications in Recharged Groundwater Basins, Sections F.3. and F.4., page 19 - Replace *Kraemer/Miller* with *Kraemer/Miller/Miraloma*.

9. Order No. R8-2004-0002, Provisions J.8., page 25 - Replace *Kraemer/Miller* with *Kraemer/Miller/Miraloma*.
10. Monitoring and Reporting Program (M&RP) No. R8-2004-0002, Recycled Water Monitoring, Section I.C.5., page 7 - Replace *Kraemer/Miller* with *Kraemer/Miller/Miraloma*.
11. M&RP No. R8-2004-0002, Reporting Requirements, Sections II.B.2.f. and II.B.4, page 12 - Replace *Kraemer/Miller* with *Kraemer/Miller/Miraloma*.
12. All other conditions and requirements of Order No. R8-2004-0002, as amended by Order No. 2008-0058, shall remain unchanged.

I, Kurt V. Berchtold, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an order adopted by the California Regional Water Quality Control Board, Santa Ana Region, on December 12, 2014.

Kurt V. Berchtold
Executive Officer