

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION**

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**ORDER NO. R4-2011-0034 AMENDING
ORDER NO. R4-2003-0134**

**WASTE DISCHARGE AND WATER RECYCLING REQUIREMENTS FOR
HARBOR WATER RECYCLING PROJECT - DOMINGUEZ GAP BARRIER PROJECT
(File No. 97-208)**

ISSUED TO

**City of Los Angeles Department of Water & Power
City of Los Angeles Department of Public Works
Los Angeles County Department of Public Works, and
Water Replenishment District of Southern California**

The California Regional Water Quality Control Board, Los Angeles Region (hereafter Regional Board) finds:

BACKGROUND

1. Three Orders are associated with the Harbor Water Recycling Project (HWRP) – Dominguez Gap Barrier (Barrier) Project, as listed below:
 - A. On October 2, 2003, the Regional Board adopted Order No. R4-2003-0134 for the HWRP – Barrier Project, which injects treated recycled water¹ and imported diluent water² into the Barrier, via injection wells.
 - B. On October 7, 2010, the Regional Board adopted Order No. R4-2010-0183 amending the groundwater monitoring program and deleting the tracer monitoring program contained in Order No. R4-2003-0134. All other provisions and requirements of Order No. R4-2003-0134 not in conflict with R4-2010-0183 remain in full force and effect.

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1. The recycled water is produced from the Advanced Wastewater Treatment Facility (AWTF), containing microfiltration and reverse osmosis and disinfection process, located at the City of Los Angeles' Terminal Island Water Reclamation Plant (TIWRP).
 2. Imported diluent water is water that is not treated wastewater and is used to supplement the recycled water in the Barrier. Imported diluent water is purchased from the Metropolitan Water District of Southern California (MWD).

- C. On February 3, 2011, the Regional Board adopted Order No. R4-2011-0034 amending Order No. R4-2003-0134 to remove Section VI.7. (see Finding No. 5). All other provisions and requirements of Order No. R4-2003-0134 not in conflict with R4-2011-0034 remain in full force and effect.
2. Above Orders have been issued to four Permittees (or Dischargers), as listed below:
 - A. The City of Los Angeles Department of Water and Power (LADWP) and the Water Replenishment District of Southern California (WRD) proposed to inject a significant portion of the reverse osmosis treated recycled water (up to 5 million gallons per day (mgd) for Phase I) produced at the HWRP – AWTF (located at the City of Los Angeles’ TIWRP) into the Barrier. The LADWP is also the purveyor of recycled water produced at the AWTF.
 - B. The WRD, a special district charged with the responsibility of replenishing and maintaining the groundwater quality of the Central and West Coast Groundwater Basins, currently purchases domestic/potable water (diluent water) from the MWD for injection into the Barrier.
 - C. The City of Los Angeles Department of Public Works (LAD Public Works) through its Bureau of Sanitation owns and operates the TIWRP and the HWRP.
 - D. The Los Angeles County Department of Public Works (LA County DPW) owns, operates, and maintains the Barrier and has done so since 1971 by injecting treated domestic water from the MWD to prevent seawater intrusion into the West Coast Groundwater Basin.
 3. The Barrier is comprised of a line of 94 injection wells connected by a common header along the south-facing coast of the West Coast Basin in the community of Wilmington, north of Terminal Island and west of the Los Angeles River (Figure 1). The well alignment extends eastward on E Street from the Palos Verdes Hills to the Dominguez Channel, where it turns towards the northeast along the western bank of the channel. Water is injected into the 200-Foot Sand aquifer in the east-west alignment of the Barrier, and into both the 200-Foot Sand and 400-Foot Gravel aquifers in the north-south alignment of the Barrier. The total span of the injection well alignment is approximately 6.2 miles.
 4. The total volume of recycled water recharged by injection shall not exceed 5 mgd and 50 percent of the total injected water (diluent and recycled water) into the Barrier as calculated annually. The injection occurs via two distribution headers (Figure 1) below:
 - A. Imported diluent water at the northern end of the Barrier as provides 100 percent diluent water to the wells along the north/south alignment; and,

- B. Recycled water near the midpoint of the east-west alignment of the Barrier, connected to the TIWRP via a transmission line, as provides 100 percent recycled water to the wells along the east/west alignment.

The injection started in February 2006. Blending of recycled water and diluent water occurs within the aquifers.

- 5. Section VI.7³ of Order No. R4-2003-0134 states the following:

“The Dischargers shall provide within three years of the start of the injection project, the plans to construct facilities to provide a 50/50 percent blend of diluent water and recycled water prior to injection.”

- 6. On December 15, 2008, the City of Los Angeles met with the WRD, the California Department of Public Health (CDPH), and Regional Board staff to discuss the possibility of waiving the requirement to construct a 50/50 percent blending station. Because the blending station will ultimately become obsolete, the Barrier Project will eventually inject 100 percent recycled water. In order to save time and money, the WRD requested to remove Section VI.7. of Order No. R4-2003-0134. A recycled water injection project is required to incrementally increase from 50 percent to 100 percent with the approval of an independent advisory panel and the CDPH’s *Finding of Fact and Conditions*. The City of Los Angeles’ request was denied, because they failed to acquire an appropriate approval.
- 7. In a letter dated December 30, 2008 (received February 9, 2009), the LADWP requested an additional five years in order to develop the construction plan for one of four options, as specified below:
 - A. A new pipeline to connect the TIWRP AWTF product water pipeline to the MWD WB-37 connection point at or near the north end of the Barrier and deliver 100 percent recycled water from the TIWRP to this new connection point, blend with imported MWD water, and deliver a 50/50 blend into Barrier.
 - B. Create a 50/50 blend at the TIWRP AWTF and deliver to the existing midpoint connection. Due to hydraulic limitations of the Barrier, delivering this blend at this connection cannot meet the demands of the entire Barrier. Therefore, additional 50/50 blended water from another source, the West Basin Municipal Water District’s Juanita Millender-McDonald Carson Regional Water Recycling Plant (JMMCRWRP), would need to be piped and delivered to the northern end of the Barrier.

3. Section VI.7 is based upon the CDPH’s (formerly State Department of Health Service) *Findings of Fact and Conditions* issued to the City of Los Angeles and Water Replenishment District of Southern California dated July 25, 2003.

- C. Deliver 50/50 blend from the TIWRP AWTF at the mid point connection and continue to serve only 100 percent imported water at the MWD WB-37 connection point.
- D. As a long-term alternative, convert the entire barrier to 100 percent recycled water by expansion of the TIWRP AWTF, JMMCRWRP or combination. Similar recycled water projects, such as the West Coast Basin Barrier - Phase V Expansion Project, have been approved for 100 percent recycled water use recently.

The CDPH and the Regional Board agreed that the requested time extension would allow for the completion of additional groundwater modeling as well as the needed comprehensive evaluation of the above options, which include the use of 100 percent recycled water. The increased use of recycled water is a necessity and is consistent with the State Water Resources Control Board's Recycled Water Policy.

On September 25, 2009, Regional Board staff proposed the tentative amendment, which agreed with the LADWP's request that the final construction plan of the above four options shall be submitted to the CDPH and the Regional Board by November 4, 2014. Regional Board staff received the supporting letters without any conditions or comments for the tentative amendment from the LADWP and the WRD on September 22 and 25, 2009, respectively. Regional Board staff also received a supporting letter with concern from the Heal the Bay on September 25, 2009. The Heal the Bay's main concern was that the tentative amendment did not require 100⁴ percent use of recycled water in the Barrier in a timely manner. On November 3, 2009, the LADWP issued a letter to the Regional Board requesting to remove the tentative amendment from the November Board Hearing in order to further discuss the Heal the Bay's proposal.

- 8. On August 25, 2010, on behalf of Permittees, the LADWP submitted a letter to the Regional Board requesting to remove Section VI.7. of Order No. R4-20030134. The statement is as below:

"The current permit initially allows for the introduction of recycled water, without blending, to occur at the midpoint of the Dominguez Gap Barrier. The permit further requires that the co-permittees develop and submit construction plans for a blending station three years after initial start up of recycled water injection and construction and operation to begin five years after initial injection. This 5-year requirement was based on the assumption that the project would deliver 100 percent recycled water to half of

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- 4. When issuing WDRs and WRRs for the Harbor Barrier Project in 2003 as well as the West Coast Basin Barrier Project in 1995 and the Alamosos Barrier Recycled Water Project in 2005, Regional Board staff must follow the CDPH's Groundwater Recharge Reuse Regulations (GW RRR), which are State of California Regulations. GW RRR requires all barrier injection projects to begin with 50 percent recycled water and 50 percent potable water. In the Los Angeles Region, all three barrier projects started with this approach. In order to reach the ultimate goal of 100 percent recycled water, barrier projects have to go through a phased approach, which is required by GW RRR.

the barrier and 100 percent diluent water to the other half of the barrier for an overall 50 percent recycled water blend in the aquifers. However, operational issues with the Advanced Water Treatment Facility, distribution system, and well heads have prevented the quantities of recycled water that had been planned for in the permit. Since project startup in February 2006 through July 2010, a total of 9,607 acre feet of recycled water has been injected compared to 23,612 acre feet of diluent water, for a recycled water contribution of 29 percent. For just 2010 (January through July), a total of 975 acre feet of recycled water has been injected compared to 4,170 acre feet of diluent water for a recycled water contribution of 23 percent.”

The Permittees believe a blending station is premature at this time because the injected recycled water content is below the 50 percent level.

9. On November 29, 2010, the CDPH issued a letter recommending that the Regional Board approve the postponement of construction of a blending station, as requested by the Permittees. The CDPH proposed three conditions (see Requirement Nos. 2, 3, and 4 below) to ensure compliance with Order No. R4-2003-0134.

PURPOSE OF ORDER

10. This Order is an Amendment to the Water Recycling Requirements and Waste Discharge Requirements issued to the four Permittees (or Dischargers) described above for the HWRP Barrier Project, pursuant to California Water Code Section 13523.1. The Dischargers are individually and collectively responsible for compliance with the requirements in this Amendment.

The Regional Board has notified the Dischargers and interested agencies and persons of its intent to adopt an Amendment to Order No R4-2003-0134, and has provided them with the opportunity to submit their written comments.

The Regional Board, in a public meeting, heard and considered all comments pertaining to the discharge and to the requirements.

IT IS HEREBY ORDERED that the City of Los Angeles’ Department of Public Works, the City of Los Angeles Department of Water and Power, the Water Replenishment District of Southern California, and the Los Angeles County Department of Public Works shall comply with the following requirements:

1. Elimination of Section VI.7. of Order No. R4-2003-0134.
2. As the overall recycled water percentage 60-month running average increases, monitoring shall continue of the injected treated water and monitoring wells in the area. When the 60-month running average of recycled water reaches 35 percent, the LADWP and the WRD must recalibrate the aquifer model and perform modeling runs to demonstrate that at this higher recycled water percentage projected out for at least 10 years, blending is still occurring within each aquifer and that the recycled water contribution in each aquifer at the nearest down gradient domestic well is less than 50

percent.

3. The model shall be recalibrated and runs shall be performed each year that the 60-month running average is greater than 35 percent. The LADWP and the WRD shall present the results of the model to the Regional Board and the CDPH each year. If the model predicts that water in any aquifer will reach the nearest domestic well at a recycled water contribution of greater than 50 percent, the LADWP and the WRD shall increase the blending of potable water at the midpoint of the Barrier (wells along the east/west alignment) to maintain compliance with Section IV, Item 3 of the current permit.

The results of the model shall be reported in **Annual Summary Report**, which shall be received by the Regional Board and the CDPH by March 1 of each year.

4. If the current treatment facility is modified or expanded in any way, the LADWP shall provide the Regional Board and the CDPH with plans, specifications and an engineering report on the changes being proposed for review, comment and final approval by the Regional Board and the CDPH. Any changes must comply with the CDPH current groundwater recharge regulations.
5. All other provisions and requirements of Order No. R4-2003-0134 not in conflict with this Amendment remain in full force and effect.
6. This Amendment takes effect upon its adoption.

I, Samuel Unger, Interim 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, Los Angeles Region, on February 3, 2011.



Samuel Unger
Executive Officer

/D TSAI/

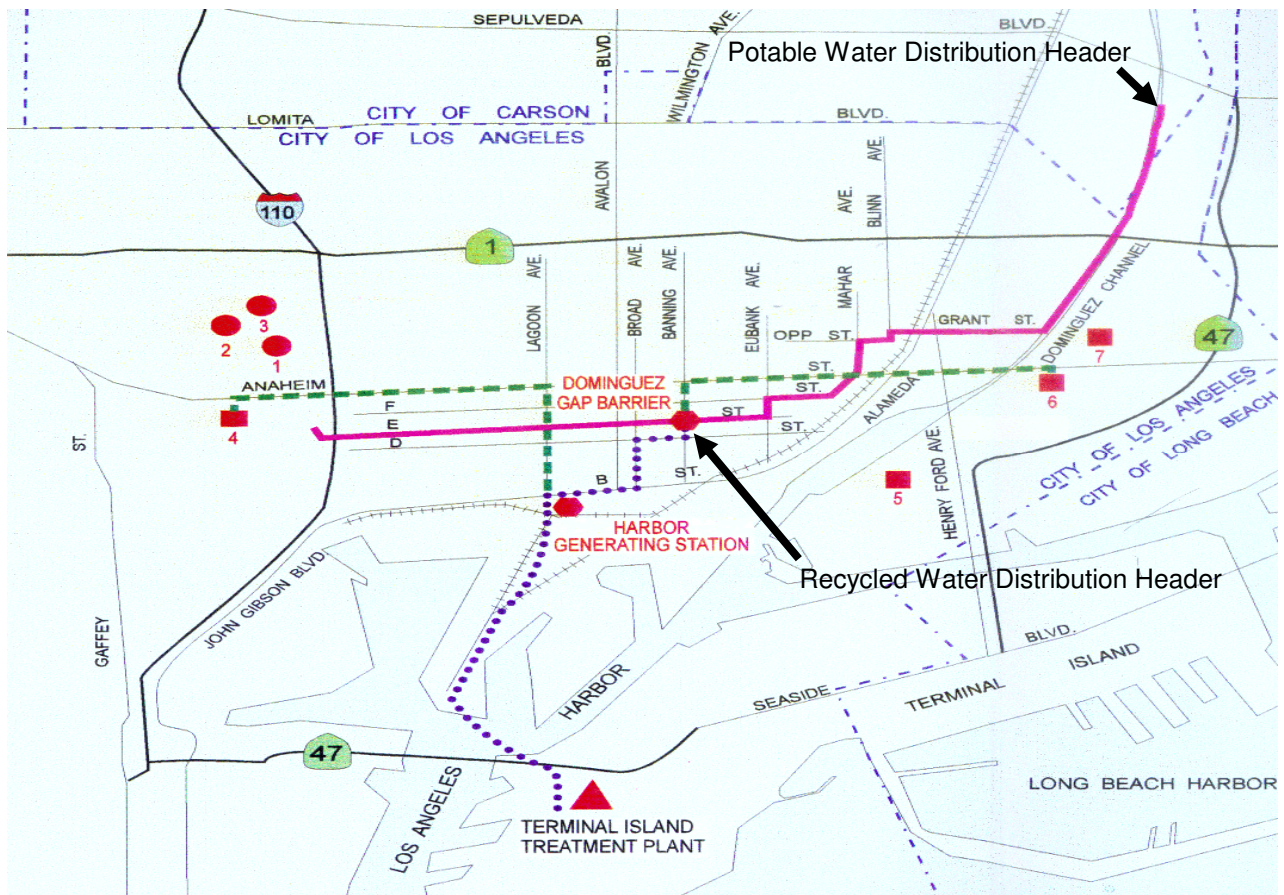


Figure 1 Locations of Distribution Headers for Potable and Recycled Water Injections