

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LAHONTAN REGION

BOARD ORDER NO. R6V-2009-0034
WDID NO. 6B190501001

**MASTER WATER RECYCLING REQUIREMENTS AND
WASTE DISCHARGE REQUIREMENTS
COUNTY SANITATION DISTRICT NO. 14 OF LOS ANGELES COUNTY
(LANCASTER)
DISINFECTED TERTIARY RECYCLED WATER**

Los Angeles County _____

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

1. Definitions

The following terms, which are used within this Order, are defined by their respective code citations or policy references:

- a. **Disinfected Tertiary Recycled Water:** "...filtered and subsequently disinfected wastewater that meets the following criteria:
 - (a) The filtered wastewater has been disinfected by either:
 - (1) A chlorine disinfection process following filtration that provides a CT (the product of total chlorine residual and modal contact time measured at the same point) 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; or
 - (2) A disinfection process that, when combined with the filtration process, has been demonstrated to inactivate and/or remove 99.999 percent of the plaque-forming units of F-specific bacteriophage MS2, or polio virus in the wastewater. A virus that is at least as resistant to disinfection as polio virus may be used for purposed of the demonstration.
 - (b) The median concentration of total coliform bacteria measured in the disinfected effluent does not exceed an MPN of 2.2 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 does not exceed an MPN of 23 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." [California Code of Regulations, title 22, section 60301.230]

- b. **Incidental Runoff:** "...unintended small amounts (volume) of runoff from recycled water use areas, such as unintended, minimal over-spray from sprinklers that escapes the recycled water use area." [Paragraph 7(a), Recycled Water Policy, State Water Resources Control Board Resolution No. 2009-0011]
- c. **Master Recycling Permit:** "...a permit issued to a supplier or a distributor, or both, of recycled water, that includes waste discharge requirements prescribed pursuant to Water Code section 13263 and water recycling requirements prescribed pursuant to Water Code section 13523.1." [Water Code section 13050(r)]
- d. **Reclaimed Water.** "...wastewater which as a result of treatment is suitable for uses other than potable use." [California Code of Regulations, title 17, section 7583(i)]
- e. **Recycled Water:** "...water which, as a result of treatment of waste, is suitable for a direct beneficial use or a controlled use that would not otherwise occur and is therefore considered a valuable resource." [Water Code section 13050(n)]

2. Recycled Water Report

The County Sanitation District No. 14 of Los Angeles County (District) has filed an application with the Lahontan Water Board under Water Code section 13522.5. Pursuant to Water Code section 13523.1, the District's application requests the Lahontan Water Board to issue Master Water Recycling Requirements to the District for supply of disinfected tertiary recycled water as defined in California Code of Regulations, title 22, section 60301.230. The District submitted information on January 7, 2009, that completed the application. .

3. Facilities and Treatment Process

The District collects and treats domestic wastewater generated in the District's service area, which is generally the City of Lancaster, portions of the City of Palmdale, and nearby unincorporated areas of northern Los Angeles County. The recycled water produced by the District is either discharged to surface water or used for various recycled water uses, such as agricultural irrigation or municipal and industrial uses. The District provides secondary wastewater treatment at its Lancaster Water Reclamation Plant. Disinfected tertiary wastewater treatment is provided at two separate facilities to produce disinfected tertiary recycled water. A

third treatment facility is scheduled to begin operations and produce disinfected tertiary recycled water in the fall of 2010. The three tertiary recycled water facilities are identified below:

- a. The Antelope Valley Tertiary Treatment Plant, which has an average 24-hour design capacity of 0.6 million gallons per day (mgd).
- b. The Membrane Bioreactor Plant, which has an average 24-hour design capacity of 1.75 mgd.
- c. The Activated Sludge/Nitrification-Denitrification Plant (Stage V Tertiary Treatment Plant), planned to be completed by fall of 2010 and to have an initial average 24-hour design capacity of 18 mgd. (The District has plans to expand this plant to 21 mgd).

Total proposed disinfected tertiary recycled water flow is 19.6 mgd (annual average).

4. Current Board Orders

Board Order No. 6-85-35 and Board Order No. R6V-2002-0053, as amended on July 13, 2005 and on March 14, 2007, establish waste discharge requirements for the discharge of recycled water pursuant to Water Code section 13523.1(b)(1). Brief descriptions of the orders are discussed in items (a) and (c) of this finding.

a. Waste Discharge Requirements

Board Order No. R6V-2002-0053 and its amendments, Board Order No. R6V-2002-0053A1 and R6V-2002-0053A2, adopted on September 11, 2002, July 13, 2005, and March 14, 2007, respectively, include effluent limits and monitoring requirements for the District's existing primary, secondary, and tertiary treatment facilities located at the District's water reclamation plant site as shown in Attachments A and B of this Order.

b. Waste Discharge and Water Recycling Requirements (Secondary Treatment)

The District's treatment facilities produce un-disinfected and disinfected secondary recycled water that is supplied to Nebeker Ranch and discharged to Piute Ponds, respectively. Requirements for the discharge at Nebeker Ranch are prescribed by the Lahontan Water Board in Board Order No. 6-86-58, which was adopted on May 15, 1986. Requirements for the discharge at Piute Ponds are contained in Board Order No. R6V-2002-053 and its amendments. The discharge of disinfected secondary recycled water is not considered in this master recycling permit.

c. Waste Discharge and Water Recycling Requirements (Disinfected Tertiary Treatment)

One of the District's existing tertiary treatment plants, the Antelope Valley Tertiary Treatment Plant, has an average 24-hour treatment capacity of 0.6 mgd. From 1972 to the present, the existing 0.6 mgd disinfected tertiary treatment plant has generated recycled water that is used at Apollo Lakes Regional County Park (Apollo Park) and the General W.J. Fox Airfield (Fox Airfield). Requirements for these uses are prescribed by the Lahontan Water Board in Board Order No. 6-85-35, which was adopted on April 11, 1985.

The District's other existing tertiary treatment plant, the Membrane Bioreactor Tertiary Treatment Plant (MBR), has a 24-hour treatment capacity of 1.75 mgd. The MBR produces recycled water that is used at the Eastern Agricultural Site. Requirements for this use are prescribed by the Lahontan Water Board in Board Order No. R6V-2002-0053A2, which was adopted on March 14, 2007.

Board Order No. R6V-2002-0053A2 also includes requirements for the District's Stage V Tertiary Treatment Plant, planned to be completed by fall of 2010 and to have an initial average 24-hour treatment capacity of 18 mgd. The District plans to expand this plant to 21 mgd.

The District also uses the disinfected tertiary recycled water to irrigate a greenbelt at its treatment plant site and for soil compaction and dust control as described, below.

d. Water Recycling Requirements

On March 8, 2006, the Lahontan Water Board adopted Board Order No. R6V-2006-0009 establishing master recycling requirements for the Division Street Corridor Recycled Water Project (Division Street Project). The requirements allow the use of recycled water for landscape irrigation, dust control, and soil compaction within a 12.5 square-mile area in Lancaster. The area is bounded by Avenue J on the south, 10th Street West on the west, 15th Street East on the east, and Avenue E on the north. Board Order No. R6V-2006-0009 will be rescinded and replaced by this master recycling permit.

5. Reason for Action

The District is proposing to expand its current permit area for disinfected tertiary recycled water (hereinafter, recycled water) to include the entire City of Lancaster city limits, the entire City of Palmdale city limits, and the service area for the North Los Angeles/Kern County Regional Recycled Water Project, areas collectively

known as the Antelope Valley. In addition, the District is proposing to expand the list of authorized recycled water uses to include uses identified below.

The following uses have received project-level coverage pursuant to the California Environmental Quality Act (CEQA).

- Irrigation for parks and playgrounds
- Irrigation for school yards
- Irrigation for residential landscaping (non-individually owned common areas)
- Irrigation for golf courses (both restricted and unrestricted-access)
- Irrigation for cemeteries
- Irrigation for freeways and greenbelt landscaping
- Irrigation for landfills
- Consolidation of backfill (around potable and non-potable pipes)
- Fire fighting (both structural and non-structural)
- Mixing concrete
- Soil compaction
- Decorative fountains
- Flushing sanitary sewers
- Flushing toilets and urinals
- Dust control for construction activities
- Dust control on roads and streets
- Dust control at landfills
- Commercial laundries
- Priming drain traps
- Cleaning roads (street sweeping), sidewalks, and outdoor work areas

Additional uses of recycled water that are not listed above, but are allowed by Title 22 were assessed at the program-level in the adopted environmental impact report. Such uses are not considered in this permit. Project-level CEQA coverage is required prior to permitting such uses.

The total estimated water demand for these uses at buildout within the Antelope Valley is 21,210 acre-feet per year (19.0 mgd). This Order provides master water recycling requirements, including a requirement that the District regulate the distributor and users of the recycled water to ensure compliance with water recycling requirements contained in State of California laws and regulations.

6. Sources of Recycled Water

The District currently produces recycled water at two tertiary treatment facilities. The Membrane Bioreactor Plant has a 24-hour design capacity flow of 1.75 mgd. The Antelope Valley Tertiary Treatment Plant has an average 24-hour design capacity of 0.6 mgd. Both facilities provide disinfection to the tertiary effluent.

The District is constructing a new tertiary treatment facility, the Stage V tertiary Treatment Plant, will have an initial average 24-hour design capacity of 18 mgd and a planned expansion to 21 mgd.

The Palmdale Water Reclamation Plant (operated by County Sanitation District No. 20 of Los Angeles County) and the Rosamond Waste Water Treatment Plant (operated by the Rosamond Community Services District) will also provide recycled water as future phases of the North Los Angeles/Kern County Regional Recycled Water Project are completed and come on-line. Water recycling requirements for the County Sanitation District No. 20 of Los Angeles County and the Rosamond Community Services District will be necessary prior to their providing recycled water from their respective facilities.

7. Producer, Distributor and Users

Under this Order, the District is the producer of recycled water. Currently, both the City of Lancaster and the Los Angeles County Waterworks District 40 are the distributors of the recycled water. As future phases of the North Los Angeles/Kern County Regional Recycled Water Project are completed and come on-line, there may be additional distributors. Distributors may also be users of the recycled water. Other users may include other public agencies and private parties.

8. Recycled Water Distribution and Distribution System

The City of Lancaster previously constructed a large diameter force-main pipeline for transporting recycled water along Division Street (Division Street Pipeline) and steel tanks for storage of recycled water and supplemental water. Supplemental water is currently supplied by existing water supply well No. 4-15, which is owned by the Los Angeles County Water Works District No. 40. The Division Street Pipeline connects to the District's existing recycled water force-main pipeline, which is located along Avenue E. Lateral pipelines are constructed for each individual user of recycled water once the site is ready to receive the recycled water.

The proposed North Los Angeles/Kern County Regional Recycled Water Project distribution system includes constructing approximately 70 miles of recycled water conveyance pipelines, four storage reservoirs, two distribution pump stations, and two booster pump stations. The proposed North Los Angeles/Kern County Regional Recycled Water Project will provide the primary distribution system for providing recycled water to end users in the Antelope Valley.

9. Permit Area

This Order authorizes use of recycled water at sites located within the portion of the Antelope Valley bounded by the Los Angeles County/Kern County line to the north (north side of Township 8 North, San Bernardino Meridian), the Los Angeles County/San Bernardino County line to the east (east side of Range 8 West, San Bernardino Meridian), south side of Township 5 North, San Bernardino Meridian to the south, and Range 14 West, San Bernardino Meridian to the west (Permit Area). The Permit Area is identified on Attachment B of this Order.

10. Authorized Recycled Water Uses

This Order authorizes recycled water use for those uses identified in Finding No. 5 of this Order. Generally, recycled water will be used for municipal and industrial applications and for non-agricultural irrigation.

11. Authorized Recycled Water Use Sites

The sites authorized for use of recycled water under this Order (Authorized Recycled Water Use Sites) are those:

- a. located within the Permit Area described in Finding No. 9, above; and
- b. where the use is limited to those described in Finding Nos. 5 and 10, above.

12. Topography

The Permit Area is located within the Antelope Valley, which is a closed topographic basin with no outlet to the ocean. The Antelope Valley is bordered by the San Gabriel Mountains to the south and west, by the Tehachapi Mountains to the west and northwest, and by a series of north-south running, low-elevation buttes that form the eastern boundaries of the valley. All water that enters the valley either infiltrates into the groundwater basin, evaporates, or flows toward the three dry lakes located on Edwards Air Force Base: Rosamond Lake, Buckhorn Lake, and Rogers Lake. In general, groundwater flows northeasterly from the mountain ranges to the dry lakes. Due to the relatively impervious nature of the dry lake soil and high evaporation rates, water that collects on the dry lakes eventually evaporates rather than infiltrates into the groundwater.

13. Hydrogeology

Unconsolidated alluvial deposits consisting of inter-bedded gravel, sand, silt and clay underlie the Permit Area. An extensive layer of lacustrine deposits is located at a depth of approximately 500 feet. Its depth and thickness varies.

The Antelope Valley Groundwater Basin is comprised of two primary aquifers: (1) the upper (principal) aquifer, and (2) the lower (deep) aquifer. Historically, the lacustrine deposits have been used to define the boundary between the two aquifers, and the deep aquifer is generally considered to be confined.

The principal aquifer is an unconfined aquifer that historically provided artesian flows due to perched water tables in some areas. These artesian conditions are currently absent due to extensive pumping of groundwater. Depth to groundwater (water table for the principal unconfined aquifer) ranges from approximately 50 to 350 feet below ground surface depending upon the location within the Antelope Valley.

In general, the principal aquifer is thickest in the southern portion of the region near the San Gabriel Mountains, while the deep aquifer is thickest in the vicinity of the dry lakes on Edwards Air Force Base.

14. Groundwater Quality

Groundwater quality is excellent within the principal aquifer but degrades toward the northern portion of the dry lake areas. Considered to be generally suitable for domestic, agricultural, and industrial uses, the water in the principal aquifer has a total dissolved solids (TDS) concentration ranging from 200 to 800 milligrams per liter (mg/l) [Department of Water Resources Bulletin 118, 2004]. The existing groundwater TDS concentration is below and within the maximum contaminant level (MCL) range of 500 to 1,000 mg/l (short term MCL is 1,500 mg/l). The deeper aquifers typically have higher TDS levels. Hardness levels range from 50 to 200 mg/l, and high fluoride, boron, and nitrates are problematic in some areas of the basin.

Arsenic is an emerging contaminant of concern in the region and has been observed in wells owned by Los Angeles County Waterworks District 40, Palmdale Water District, and Quartz Hill Water District in concentrations ranging from 2 to 60 micrograms per liter ($\mu\text{g/l}$). The MCL for arsenic is 10 $\mu\text{g/l}$. Arsenic is a naturally occurring inorganic element often found in groundwater and occasionally in surface water. Research conducted by Los Angeles County Waterworks District 40 and the United States Geologic Survey has shown the problem to reside primarily in the deep aquifer, and it is not anticipated that the existing arsenic problem will lead to future loss of groundwater as a water supply resource for the region.

There are also concerns with nitrate levels above the current MCL of 10 mg/l (as Nitrogen [N]) in portions of the basin. Groundwater monitoring data from the mid-to-late 1990s indicate nitrate (as N) concentrations exceeding the primary MCL for drinking water of 10 mg/l in two areas in the southern portion of the groundwater basin: one is northeast of the Palmdale Water Reclamation Plant and the other is

near the community of Littlerock, slightly east of the upper reach of Littlerock Creek. It is estimated both nitrate plumes are similar in size, approximately five to six square miles. Agricultural fertilization practices, historic confined animal facility discharges, septic system disposal, and discharge of treated wastewater have likely contributed to the elevated levels. In the area near the Palmdale Water Reclamation Plant, actions have already been implemented by County Sanitation District No. 20 of Los Angeles County to address the nitrate plume and to minimize any future impacts from treated wastewater discharges, including treatment upgrades, a change in effluent management practices, the implementation of the North Los Angeles/Kern County Regional Recycled Water Project, and performing groundwater remediation activities near the Palmdale Water Reclamation Plant. In the Littlerock area, Littlerock Creek Irrigation District extracts the nitrate-laden groundwater and blends it with other water sources to meet drinking water quality standards. The agricultural and confined animal facilities that are considered to have contributed to the Littlerock nitrate plume are no longer active.

15. Receiving Waters

The receiving waters are the groundwaters of the Antelope Valley Basin.

16. Lahontan Basin Plan

The Lahontan Water Board adopted a Water Quality Control Plan for the Lahontan Region (Basin Plan), which became effective on March 31, 1995. This Order implements the Basin Plan as amended.

17. Beneficial Uses – Groundwater

Groundwater has been, and continues to be, an important resource within the Antelope Valley. Prior to 1972, groundwater provided more than 90 percent of the total water supply (MUN, AGR, and IND). Since 1972, groundwater has provided between 50 and 90 percent of the total water supply. Groundwater pumping in the Antelope Valley peaked in the 1950s, and it decreased in the 1960s and 1970s when agricultural pumping (AGR) declined due to increased pumping costs from greater pumping lifts and higher electric power costs. The rapid increase in urban growth in the 1980s resulted in an increase in the demand for municipal (MUN) and industrial (IND) water and an increase in groundwater use. Projected urban growth and limits on the available local and imported water supply are likely to continue to increase the reliance on the groundwater. [Section 3.7, Final Program Environmental Impact Report, November, 2008]

The present and potential beneficial uses of the groundwaters of the Antelope Valley Basin as set forth and defined in the Basin Plan are:

- a. Municipal and Domestic Supply (MUN);
- b. Agricultural Supply (AGR);
- c. Industrial Service Supply (IND); and
- d. Freshwater Replenishment (FRSH)

18. State Water Board Recycled Water Policy

State Water Board Resolution No. 2009-0011, "Adoption of a Policy for Water Quality Control for Recycled Water," references and adopts the "State Water Resources Control Board Recycled Water Policy" (Recycled Water Policy). The Recycled Water Policy provides direction to the State and Regional Water Boards regarding the appropriate criteria to be used in issuing permits for recycled water projects. The Recycled Water Policy describes permitting criteria intended to streamline, and provide consistency for, the permitting of the vast majority of recycled water projects. This Order implements the Recycled Water Policy.

Order No. III of this Master Recycling Permit requires the District to develop a salt/nutrient management plan and to control incidental runoff consistent with Paragraphs 6 and 7(a), respectively, of the Recycled Water Policy. Finding Nos. 21 and 22 of this Order describe Lahontan Water Board consistency with the streamlined permitting criteria outlined in Paragraphs 7(b) and 7(c) of the Recycled Water Policy. Finding No. 22 of this Order describes Lahontan Water Board consistency with the antidegradation criteria outlined in Paragraph 9 of the Recycled Water Policy. This permit allows for increased use of recycled water consistent with the mandate established in Paragraph 4 of the Recycled Water Policy to increase the use of recycled water in California.

19. Incidental Runoff of Recycled Water

The Recycled Water Policy defines incidental runoff as unintended small amounts (volume) of runoff from recycled water use areas, such as unintended minimal over-spray from sprinklers that escapes the recycled water use area. Water leaving a recycled water use area is not considered incidental if it is part of the facility design, if it is due to excessive application, if it is due to intentional overflow or application, or if it is due to negligence.

The District must develop and implement an operations and management plan that applies to all recycled water use areas. This plan must provide for detection of leaks (for example, broken sprinkler heads) and correction within 72 hours of detection or prior to a release of 1,000 gallons, whichever occurs first.

20. Discharges of Recycled Water from Surface Impoundments

The Recycled Water Policy prohibits discharge to surface waters from a surface impoundment containing recycled water unless the discharge is a result of a 25-year, 24-hour storm event or greater. Surface water impoundments used for recycled water storage will retain a 25-year, 24-hour storm event.

21. Regulation of Recycled Water

a. California Code of Regulations, Title 22, Department of Public Health

The California Department of Public Health (CDPH), formerly the Department of Health Services, established criteria for using recycled water. These criteria are codified in Title 22 and include such requirements as Sources of Recycled Water, Uses of Recycled Water, and Use Area Requirements. The CDPH adopted revised Water Recycling Criteria that became effective on March 20, 2001. Applicable criteria are prescribed in this Order.

b. Engineering Reports

As required by section 60323 of Title 22, the District has submitted engineering reports for the production and use of recycled water to the CDPH. The content and status of each report is described in the following table.

Engineering report title	Scope	CDPH review status	Water Board Response to CDPH Review and Project Status
City of Lancaster Addendum to Engineering Report for Division Street Recycled Water Distribution System, dated September 30, 2008.	Additional usage of Division Street distribution system to include additional uses within City of Lancaster.	CDPH recommended approval with conditions on December 24, 2008.	Lahontan Water Board provided November 10, 2008 response requiring adoption of revised master recycling permit. District submitted application.
Engineering Report for 0.5 mgd Antelope Valley Tertiary Treatment Plant (AVTTP) dated January 15, 2005.	Treatment and recycled water production	CDPH recommended approval with conditions on June 2, 2005	Lahontan Water Board accepted report. Adopted Board Order R6V-2002-0053A1 on July 13, 2005 and Board Order No. R6V-2006-0009 on March 8, 2006.

Engineering report title	Scope	CDPH review status	Water Board Response to CDPH Review and Project Status
Revised report for Membrane Bioreactor with Chlorination, submitted June 16, 2008	Treatment and recycled water production	CDPH recommended approval with conditions on July 1, 2008	Lahontan Water Board accepted report September 16, 2008, allowing the use.
Membrane Bioreactor with UV (Wedeco), submitted June 25, 2008	Treatment and recycled water production	CDPH recommended approval with conditions on December 2, 2008, and provided additional comments on March 5, 2009. (See Attachment E)	Compliance with CDPH conditions required by this Order.
Membrane Bioreactor with UV (Trojan), submitted December 1, 2008	Treatment and recycled water production	CDPH recommended approval with conditions on April 15, 2009, amended May 15, 2009. (See Attachment E)	Compliance with CDPH conditions required by this Order.
NDN Facilities (Stage V Expansion), report expected to be submitted to CDPH in May 2009.	Treatment and recycled water production	CDPH comment letter anticipated in June, 2009	Compliance with CDPH conditions required by this Order upon receipt of CDPH conditions.
North Los Angeles/Kern County Regional Recycled Water Project, report expected to be submitted to CDPH in May 2009.	Los Angeles/Kern County Regional Recycled Water Project distribution system	CDPH comment letter expected June, 2009.	Compliance with CDPH conditions required by this Order upon receipt of CDPH conditions.

Prior to implementing the North Los Angeles/Kern County Regional Recycled Water Project distribution system, and prior to implementing yet-to-be identified uses, the District (or other responsible agency) will prepare the appropriate engineering reports, obtain acceptance of the project from appropriate agencies, and will implement as applicable the CDPH conditions for project acceptance pursuant to waste discharge requirements and/or water recycling requirements issued by the Lahontan Water Board.

c. Regulation

Water Code section 13523.1, subdivision (a), states:

“Each regional board, after consulting with, and receiving the recommendations of, the State Department of Health Services and any party who has requested in writing to be consulted, with the consent of the proposed permittee, and after any necessary hearing, may, in lieu of issuing waste discharge requirements pursuant to Section 13263 or water reclamation requirements pursuant to Section 13523 for a user of reclaimed water, issue a master reclamation permit to a supplier or distributor, or both, of reclaimed water.”

This Order includes water-recycling requirements which require the District to:

- i. comply with waste discharge requirements (see Finding No. 4 and Water Recycling Specification No I.B.1 of this Order);
- ii. comply with Uniform Statewide Reclamation Criteria (California Code of Regulations, title 22, sections 60301 through 60355) established pursuant to Water Code section 13521(see Water Recycling Specification No I.B.2 of this Order);
- iii. establish and enforce rules or regulations for recycled water users (*Requirements for Recycled Water Users, Recycled Water Use Site Inspection Program, and Enforcement Response Plan* provided in Attachment C, which is made a part of this Order), governing the design and construction of recycled water use facilities and the use of recycled water (see Water Recycling Specification No I.B.3 of this Order);
- iv. submit quarterly reports to the Lahontan Water Board summarizing recycled water use, including the total amount of recycled water supplied, the total number of recycled water use sites, the locations of the recycled water use sites, and the names of the hydrologic areas underlying the recycled water use sites (see Monitoring and Reporting Program No. R6V-2009-0034, Sections I.E and II.B); and
- v. conduct periodic inspections of recycled water use sites to monitor compliance by users with the Uniform Statewide Reclamation Criteria established pursuant to Water Code section 13521 and the requirements of this Order (see Water Recycling Specifications No I.B.3 and I.B.4 of this Order).

Regarding the requirement identified in Finding No. 21.c.i above, the District is under current requirements to comply with the waste discharge requirements listed in Finding No. 4 of this Order.

Regarding the requirement identified in Finding No. 21.c.ii above, the District, through information contained in its CEQA documents and the District's application, established that the proposed recycled water uses will comply with the Title 22 requirements.

Regarding requirements identified in Finding Nos. 21.c.iii and 21.c.v above, the District has completed and submitted a report to the Lahontan Water Board containing its *Requirements for Recycled Water Users, Recycled Water Use Site Inspection Program, and Enforcement Response Plan* (see Attachment C of this Order). The Lahontan Water Board approved these documents on September 16, 2008.

This Order implements the requirement identified in Finding No. 21.c.iv through the attached Monitoring and Reporting Program.

22. Streamlined Permitting

a. Eligibility

The landscape irrigation elements of the proposed water recycling project meet the criteria for streamlined permitting (Paragraph 7(c) of the Recycled Water Policy) for the following reasons:

- i. The project complies with Title 22 regulations.
- ii. The proposed landscape irrigation use is in amounts and rates needed for the landscape. An operations and management plan will be developed describing how appropriate irrigation amounts and rates will be applied including, but not limited to, developing water budgets for use areas, providing supervisor training, conducting periodic inspections, developing tiered rate structures, and installing smart controllers. An operations and management plan may be developed to cover multiple sites.
- iii. A salt/nutrient management plan has not been prepared for the Antelope Valley groundwater basin. This Order includes a requirement that the District must participate in the development of the salt/nutrient management plan for the Antelope Valley.
- iv. The District will communicate to users the nutrient levels in the recycled water so that users can appropriately evaluate fertilizer needs.

b. Streamlined Permit Requirements

According to Paragraph 7(b)(4) of the Recycled Water Policy, landscape irrigation projects that qualify for streamline permitting are not required to conduct project-specific receiving water and groundwater monitoring unless otherwise required by an applicable salt/nutrient management plan. The District will participate in the development of a salt/nutrient management plan for the Antelope Valley in lieu of performing project specific monitoring as allowed by the Recycled Water Policy. This Order includes a requirement that the District must participate in the development of the salt/nutrient management plan for the Antelope Valley.

Additionally, the Recycled Water Policy requires streamlined permits to include monitoring of priority pollutants on a twice-annual basis and annual monitoring of Emerging Constituents/Constituents of Emerging Concern (e.g., endocrine disrupters, personal care products, or pharmaceuticals) (CECs). The Recycled Water Policy recognizes a lack of complete knowledge regarding CECs, and the implementation of CEC monitoring is deferred in order to incorporate the recommendations of a blue-ribbon advisory panel, to be convened by the State Water Board. This Order includes the monitoring for priority pollutants.

23. Maintenance of High Quality Waters in California

The proposed uses of recycled water will not result in a degradation of the existing groundwater quality within the Antelope Valley with respect to nutrients. The Stage V Tertiary Treatment Plant includes a denitrification process, which will result in reduced nitrogen concentrations in the recycled water. Furthermore, recycled water will be applied at agronomic rates to consume all remaining nitrogen.

Some of the proposed uses of recycled water could result in a degradation of the existing groundwater quality within the Antelope Valley with respect to salts (Total Dissolved Solids, or TDS). The Antelope Valley groundwater basin is estimated to have 68 million acre-feet of storage, of which 13 million acre-feet is available. TDS concentrations in the groundwater basin range from 200 to 800 mg/l [Department of Water Resources Bulletin 118, 2004], with an average of 300 mg/l. According to California Code of Regulations Title 22, the recommended secondary maximum contaminant level (MCL) in the groundwater basin for TDS is 500 mg/l, and the secondary MCL upper limit is 1,000 mg/l. The average TDS concentration in the recycled water is currently 654 mg/l, and this value will be reduced to 550 mg/l in 2011 after the Stage V Tertiary Treatment Plant is operational.

The District provided an analysis to conservatively calculate the groundwater basin's assimilative capacity for TDS and the proposed project's impact on the remaining assimilative capacity. Subtracting the average TDS concentration of 300 mg/l in the groundwater basin from the recommended MCL of 500 mg/l, the groundwater basin has an assimilative capacity of 200 mg/l. From a mass balance analysis, the multiple proposed uses of recycled water will not use more than one percent of the available assimilative capacity for TDS within the Antelope Valley groundwater basin over the next ten years. Extrapolating over a 30-year period where recycled water supply is at its maximum flow level, the Lahontan Water Board projects that the multiple proposed uses of recycled water will not use more than 8.5 percent of the available assimilative capacity for TDS within the Antelope Valley groundwater basin. This level of degradation is consistent with established policies, as discussed below.

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

- "1. Whenever the existing quality of water is better than the quality established in policies as of the date on which such policies become effective, such existing high quality will be maintained until it has been demonstrated to the State that a change will be consistent with the maximum benefit to the people of the State, will not unreasonably affect present and anticipated beneficial use of such water and will not result in water quality less than that prescribed in the policies.*
- 2. Any activity which produces or may produce a waste...and which discharges or proposes to discharge to existing high quality waters will be required to meet waste discharge requirements which will result in the best practicable treatment or control of the discharge necessary to assure that (a) pollution or nuisance will not occur, and (b) the highest water quality consistent with maximum benefit to the people of the State will be maintained."*

This Order is consistent with Resolution No. 68-16 for the following reasons.

- a. State Water Board, through Resolution No. 77-1, has identified the beneficial use of recycled water for the people for the State, and directs regional water boards to encourage the use of recycled water in water-short areas of the State. The Antelope Valley is located in a water-short area of the State. The current demand for potable water in the Antelope Valley exceeds supply in the region, and by 2035 this demand is expected to double. The people of the State will benefit from the use of recycled water in the Antelope Valley area, where recycled water will supplement and/or replace existing water supplies (e.g., imported surface waters and overdraft of groundwaters).

- b. This Order prohibits the use of recycled water that causes a pollution or nuisance.
- c. This Order requires the District to administer (1) *Requirements for Recycled Water Users*, (2) a *Recycled Water User Site Inspection Program*, and (3) an *Enforcement Response Plan* (see Attachment C), as previously accepted by the Lahontan Water Board. The requirements and the compliance inspection and enforcement programs are the mechanisms for ensuring that appropriate control measures are identified, implemented, and maintained. The control measures generally identified include (1) applying irrigation within agronomic rates to reduce the potential for runoff and increased nutrients into the groundwater; and (2) developing and implementing a salt/nutrient management plan to reduce the potential for salt and nutrient loading, thereby minimizing the impacts to groundwater quality within the Antelope Valley. The control measures will ensure that the discharge will result in the best practicable control for the maximum benefit of the people of the State to assure that a pollution or nuisance will not occur and that the highest water quality consistent with maximum benefit to the people of the State will be maintained.

The waste discharge requirements adopted as part of this Order will ensure that the discharge will result in the best practicable control for the maximum benefit of the people of the State to assure that a pollution or nuisance will not occur and that the highest water quality consistent with maximum benefit to the people of the State will be maintained. The control measures will prevent the groundwater quality within the Antelope Valley from exceeding the standards established in existing applicable policies.

- d. The use of recycled water as authorized by this Order will not result in water quality less than that prescribed in applicable policies.

24. Consideration of Water Code Section 13241 Factors

Section 13523.1(b)(1) of the Water Code requires master reclamation requirements to include waste discharge requirements adopted pursuant to Article 4 (commencing with section 13260) of Chapter 4. Section 13263(a) of the Water Code requires that such waste discharge requirements take into consideration the provisions of section 13241 of the Water Code. The Lahontan Water Board has considered these factors as follows:

- a. Past, present, and probable future beneficial uses of water.

This Order identifies existing groundwater quality as described in Finding No. 14. This Order also identifies past, present, and probable future beneficial uses of the Antelope Valley groundwater as described in Finding No. 17. The

proposed uses of recycled water will not adversely affect present or probable future beneficial uses of water, including municipal and domestic supply, agricultural supply, industrial service supply, and freshwater replacement.

b. Environmental characteristics of the hydrographic unit under consideration, including the quality of water available thereto.

Finding Nos. 13 and 14 describe the environmental characteristics and quality of available groundwater. Finding No. 14 details groundwater issues related to TDS, arsenic, and nitrate concentrations.

TDS concentrations range from 200 to 800 mg/L, with higher concentrations in the deeper aquifer. These levels are below and within the MCL range of 500 to 1,000 mg/L.

Arsenic has been observed in concentrations ranging from 2 to 60 µg/L, and the MCL for arsenic is 10 µg/L. Arsenic is a naturally occurring inorganic element often found in groundwater and occasionally in surface water. Anthropogenic sources of arsenic include agricultural, industrial and mining activities. Research conducted by Los Angeles County Waterworks District 40 and the United States Geologic Survey has shown the problem to reside primarily in the deep aquifer, and it is not anticipated that the existing arsenic problem will lead to future loss of groundwater as a water supply resource for the region.

Nitrate concentrations exceed the primary MCL for drinking water of 10 mg/L (as N) in two areas in the southern portion of the groundwater basin. Agricultural fertilization practices, septic system disposal, and discharge of treated wastewater have likely contributed to the elevated levels.

c. Water quality conditions that could reasonably be achieved through the coordinated control of all factors, which affect water quality in the area.

The requirements of the Order, including application of recycled water at agronomic rates, will result in the protection of existing and probable future beneficial uses to the maximum benefit to the people of the State of California. The requirements of this Order will also result in the protection of water quality to continue to meet the standards prescribed in applicable existing policies.

d. Economic considerations.

The Antelope Valley is faced with serious challenges with respect to management of water and wastewater resources in the region. The population in the Antelope Valley is expected to increase by 161 percent by 2035.

Currently, the demand for potable water exceeds supply in the region, and by 2035 this demand is expected to double. Wastewater discharges also will increase in the future as the population increases. Existing demand for potable water is met largely by water imported through the State Water Project and groundwater pumped from the Antelope Valley Basin. Imported water supplies are becoming less reliable, the Antelope Valley Basin is facing overdraft conditions, and the water rights of overlying landowners of the Antelope Valley Basin have not yet been adjudicated. The Regional Water Management Group prepared an integrated water management plan for the Antelope Valley, and the proposed North Los Angeles/Kern County Regional Recycled Water Project is identified in the plan as a project that addresses the need for both increased water supplies and wastewater effluent management. [Section 1.5, Final Program Environmental Impact Report, November, 2008]

This Order authorizes the District to expand its current Permit Area for recycled water use to include the area identified in Finding No 9 and to expand the list of authorized recycled water uses to include the uses identified by Title 22 and Finding No. 5. Use of recycled water will replace supplied groundwater and imported water for landscape irrigation, and potentially in the future, agricultural irrigation, groundwater recharge, and other Title 22 approved uses not listed in Finding No. 5. The potable water that is being replaced by this recycled water would be available for other uses, resulting in an increase in potable water supplies.

The proposed North Los Angeles/Kern County Regional Recycled Water Project also provides a management strategy for wastewater effluent by creating a system to distribute recycled water for beneficial use. The proposed North Los Angeles/Kern County Regional Recycled Water Project will eventually enable the District to produce, sell, and distribute disinfected, tertiary-treated effluent to local water purveyors.

e. The need for developing housing within the region.

The District is not responsible for developing housing within the Antelope Valley. The Final Program Environmental Impact Report, November, 2008, identified that the proposed project would not have an impact on housing and population. The proposed project is limited to the provision of water supply infrastructure, as opposed to housing and commercial development that would directly affect the number of residents or employees within the area. Therefore, the proposed North Los Angeles/Kern County Regional Recycled Water Project would not directly contribute to the creation of additional housing or jobs within the Antelope Valley and thus would not result in direct growth inducement.

The proposed North Los Angeles/Kern County Regional Recycled Water Project would reduce the area's existing and future demand for imported water through recycling. The imported water conserved through implementation of the proposed project would be available to serve potable water demands of planned growth. The Antelope Valley Regional Urban Water Management Plan projects that eight percent of the water demand in 2030 would be met with recycled water, although substantially more would be available as additional end use demand develops. The proposed project would not directly or indirectly induce growth or remove an obstacle to growth, since the increased population would occur in any case based on the cities' and counties' approved build-out growth control policies. The recycled water that would be made available as a result of the proposed project would be used to meet a small percentage of projected demand in 2030 that would otherwise be met with imported water.

f. The need to develop and use recycled water.

This Order authorizes the District to expand its current Permit Area for recycled water use to include the area identified in Finding No. 9 and to expand the list of authorized recycled water uses to include the uses identified by Finding No. 5.

25. California Environmental Quality Act Compliance (CEQA)

The Los Angeles County Waterworks District 40, Antelope Valley, prepared a Final Program Environmental Impact Report (PEIR) dated November 2008, for the North Los Angeles/Kern County Regional Recycled Water Project. The Los Angeles County Waterworks District 40, Antelope Valley, prepared a Findings of Fact, Statement of Overriding Considerations, Mitigation Monitoring and Reporting Program (Overriding Considerations) dated November 2008, for the same project. The Overriding Considerations addressed unavoidable noise and ground-vibration impacts that would result from construction activities. The Los Angeles County Board of Supervisors approved the PEIR on December 9, 2008, and a Notice of Determination was filed on December 15, 2008.

Mitigation measures that will be implemented as part of the project include control measures to ensure:

- a. Application of recycled water at agronomic rates so irrigation does not promote downward migration of salts and nutrients (including nitrates), which could adversely impact the quality of groundwater,
- b. There is adequate erosion control so soil is not released into stormwater runoff and surface waters, and

- c. Fertilizer application does not adversely impact waters of the State.

The Lahontan Water Board, acting as a CEQA Responsible Agency in compliance with California Code of Regulations, title 14, section 15096, evaluated the impacts to water quality addressed in the PEIR. As a result of the analysis, the Lahontan Water Board finds the mitigation measures in the PEIR, combined with compliance with the requirements specified by this Order, to be adequate to reduce water quality impacts to levels that are less than significant.

26. Notification of Interested Parties

The Lahontan Water Board has notified the District and interested persons of its intent to prescribe master recycling requirements.

27. Consideration of Public Comments

The Lahontan Water Board, in a public meeting, heard and considered all comments pertaining to the use of recycled water.

IT IS HEREBY ORDERED that the District must comply with the following:

I. WATER RECYCLING SPECIFICATIONS

A. Effluent Limitations

1. Recycled water production at the Antelope Valley Tertiary Treatment Plant must not exceed 0.6 mgd (maximum average 24-hour flow).
2. Recycled water production at the Membrane Bioreactor Plant must not exceed 1.75 mgd (maximum average 24-hour flow).
3. Recycled water production at the Activated Sludge/Nitrification-Denitrification Plant (Stage V tertiary treatment plant) must not exceed 18 mgd (maximum average 24-hour flow).
4. All disinfected tertiary recycled water supplied to the recycled water distribution system must at some point following the treatment process meet the requirements specified in California Code of Regulations, Title 22.

B. Regulation and Enforcement

1. Pursuant to Water Code section 13523.1, subdivision (b)(1), the District must comply with all waste discharge requirements previously adopted by
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the Lahontan Water Board for regulating the production of the disinfected tertiary recycled water.

2. Pursuant to Water Code section 13523.1, subdivision (b)(2), the District must comply with the Uniform Statewide Reclamation Criteria, which are contained in California Code of Regulations, title 22, sections 60301 through 60355 and are established pursuant to Water Code section 13521.
3. Pursuant to Water Code section 13523.1, subdivision (b)(3), the District must implement and enforce its *Requirements for Recycled Water Users, Recycled Water Users Site Inspection Program, and Enforcement Response Plan* (Attachment C, which is made a part of this Order) governing the design and construction of recycled water use facilities and the use of recycled water.
4. Pursuant to Water Code section 13523.1, subdivision (b)(5), the District must conduct periodic inspections of the facilities of the recycled water users to monitor compliance by the users with the Uniform Statewide Reclamation Criteria and the District's *Requirements for Recycled Water Users, Recycled Water Users Site Inspection Program, and Enforcement Response Plan* (Attachment C, which is made a part of this Order). During the inspections, the District shall also monitor compliance with Water Recycling Specifications No. I.C.1 through I.C.14 of this Order. At a minimum, the District must inspect each recycled water use facility at least once every three years if there are no reported violations, and at least annually if there are prior violations at the facility.
5. The District must inspect recycled water use facilities and ensure users' compliance with these master water recycling requirements.

C. General Requirements and Prohibitions

1. The discharge of recycled water to surface waters, including excessive application, intentional overflow or application, or negligence, is prohibited. However, incidental runoff of recycled water, such as unintended, minimal over-spray from sprinklers that escapes the recycled water use area is not a violation of this Order.
2. Discharge of untreated or partially treated recycled water to the recycled water distribution system is prohibited.
3. The use of recycled water must not cause a pollution or threaten to cause a pollution as defined in Water Code Section 13050.

4. The use of recycled water must not cause a nuisance as defined in Water Code Section 13050.
5. The use of recycled water under this Order must be limited to the Authorized Recycled Water Use Sites defined in Finding No. 11 of this Order.
6. The uses of recycled water authorized under this Order are limited to those described in Finding No. 10 of this Order.
7. The source of recycled water must be limited to that described in Finding No. 6 of this Order.
8. Recycled water used to irrigate landscape areas must not be applied at a rate and amount that exceeds the irrigation and nutrient needs of the vegetation. The District must communicate to recycled water users the nutrient levels in the recycled water at least monthly so that the recycled water users can appropriately evaluate fertilizer needs prior to application of fertilizers.
9. Recycled water must not be applied at a rate and amount that causes ponding or runoff that is other than incidental runoff.
10. Pipelines must be maintained so as to prevent leakage.
11. The use of recycled water that causes a violation of any narrative water quality objective contained in the Basin Plan, is prohibited.
12. The use of recycled water that causes a violation of any numeric water quality objective contained in the Basin Plan, is prohibited.
13. Where any numeric or narrative water quality objective contained in the Basin Plan is already being exceeded, the use of recycled water that causes further degradation or pollution, is prohibited.
14. The District must ensure the implementation of an operation and maintenance plan for all recycled water use sites that includes the following practices:
 - a. detection of leaks and implementation of corrective action within 72 hours of learning of the leak, or prior to the release of 1,000 gallons, whichever occurs first;
 - b. proper design and aim of sprinkler heads;

- c. refraining from recycled water application during precipitation events;
and
- d. adequate protection of all facilities used to transport and store recycled water against overflow, structural damage, or a significant reduction in efficiency resulting from a 25-year, 24-hour storm or flood.

15. The District must not supply recycled water to parties who distribute, store, or use recycled water in a manner that is in violation of the Uniform Statewide Reclamation Criteria (as identified within California Code of Regulations, title 22) and the requirements of the Master Recycling Requirements.

II. PROVISIONS

- A. The District may continue providing recycled water from its two existing tertiary treatment facilities (Membrane Bioreactor Tertiary Treatment Plant and Antelope Valley Tertiary Treatment Plant) to the distributor (City of Lancaster) and current and future users located within the Division Street Corridor Recycled Water Project (Division Street Project) recycled water use area (defined in Finding No. 4.d of this Order) pursuant to the requirements of this Order.
- B. The District must:
 - 1. prior to supplying recycled water under this Order from the Stage V Tertiary Treatment Plant, submit to the Lahontan Water Board a copy of the final engineering report for the Stage V Tertiary Treatment Plant with written confirmation from the CDPH that it has reviewed the report and finds the report to be acceptable (Review and Acceptance Letter).
 - 2. following receipt of the CDPH's Review and Acceptance Letter for the Stage V Tertiary Treatment Plant Final Engineering Report, comply with the CDPH's conditions as specified in the Review and Acceptance Letter.
 - 3. prior to supplying recycled water under this Order to the North Los Angeles/Kern County Regional Recycled Water Project, submit to the Lahontan Water Board a copy of the final engineering report for the North Los Angeles/Kern County Regional Recycled Water Project with written confirmation from the CDPH that it has reviewed the report and finds the report to be acceptable (Review and Acceptance Letter).

4. following receipt of the CDPH's Review and Acceptance Letter for the North Los Angeles/Kern County Regional Recycled Water Project Final Engineering Report, comply with the CDPH's conditions as specified in the Review and Acceptance Letter.
 5. comply with the conditions identified in the CDPH's Approval and Comment Letters (Attachment E of this Order) as applicable to the use of the Wedeco TAK-55HP Ultraviolet Light Disinfection System for the Membrane Bioreactor Tertiary Treatment Plant and of the Trojan 3000Plus Ultraviolet Light Disinfection System for the Membrane Bioreactor Tertiary Treatment Plant.
 6. prior to providing recycled water to new users, have received, reviewed and approved a completed *Report of Proposed Recycled Water Use*, which contains information demonstrating the user will comply with the Uniform Statewide Reclamation Criteria and the District's *Requirements for Recycled Water Users*. Copies of all approved *Reports of Proposed Recycled Water Use* and approval letters shall be maintained on file by the District.
- C. Pursuant to California Code of Regulations, title 22, section 60316, subdivision (b), the District shall notify the Lahontan Water Board, State Department of Public Health and County of Los Angeles Department of Health Services of any incidence of backflow from a recycled water system into the potable water system within 24 hours of discovery of the incident.
- D. Pursuant to Water Code section 13267, subdivision (b), the District shall comply with Monitoring and Reporting Program R6V-2009-0034 as specified by the Executive Officer.
- E. The District shall comply with the "Standard Provisions for WDRs," dated September 1, 1994, in Attachment "D," which is part of this Order, with the exception that recycled water storage facilities shall be designed for protection against overflow during a 25 year, 24 hour storm.

III. RECYCLED WATER POLICY IMPLEMENTATION

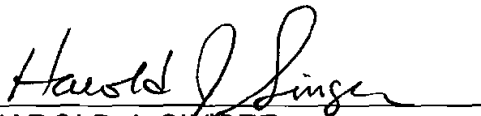
- A. The District must develop and/or participate in the development of a salt/nutrient management plan for the Antelope Valley that is consistent with Paragraph 6 of the Recycled Water Policy. The salt/nutrient management plan must be submitted to the Lahontan Water Board by **May 14, 2014**.
- B. Before supplying recycled water under this Order, the District must develop and implement an operations and management plan to control incidental runoff that

is consistent with Paragraph 7(a) of the Recycled Water Policy.

IV. RESCISSION

Board Order No. R6V-2006-0009 establishing master recycling requirements for the Division Street Corridor Recycled Water Project (Division Street Project) is hereby rescinded.

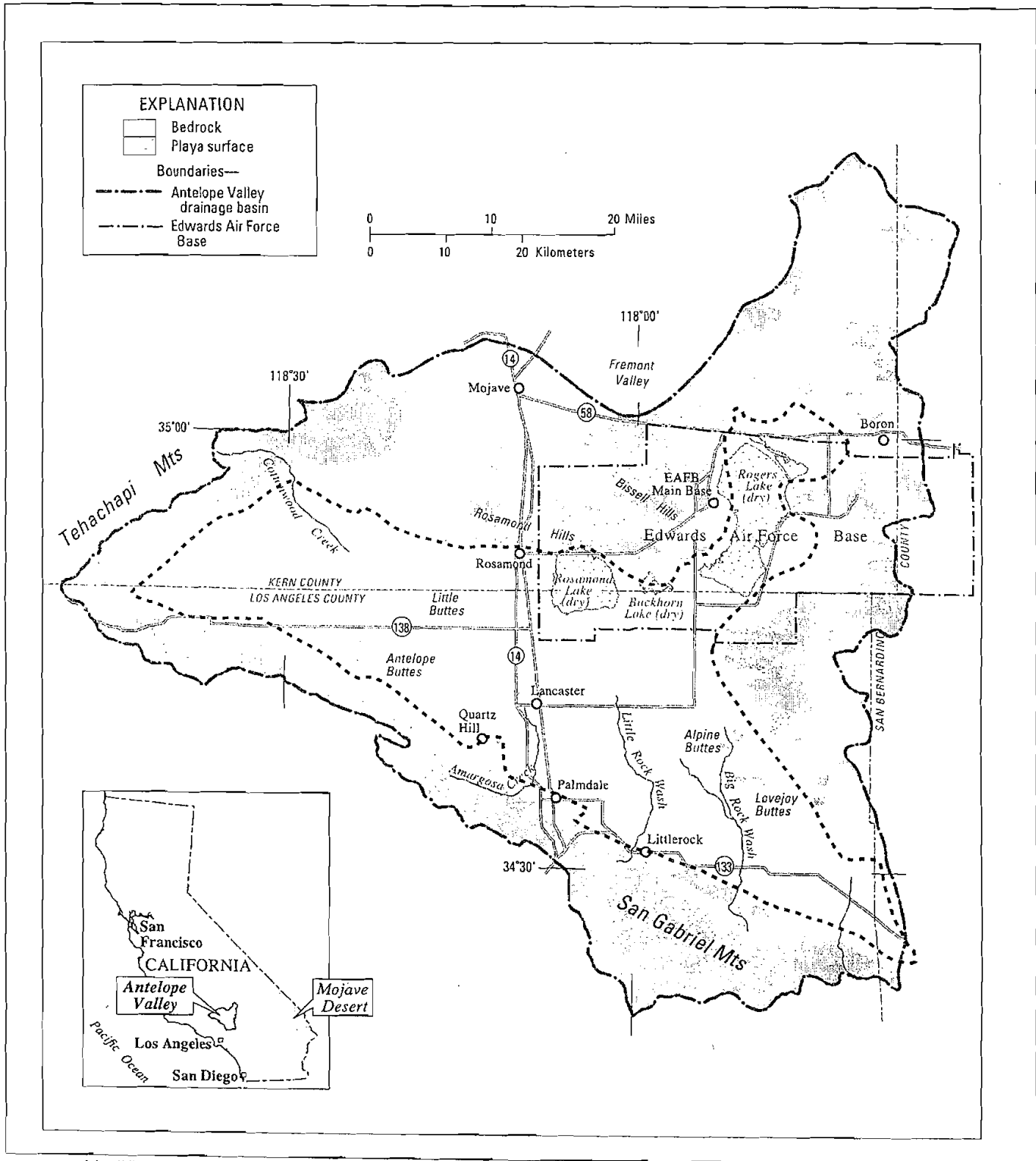
I, Harold J. Singer, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Lahontan Region, on June 10, 2009.



HAROLD J. SINGER
EXECUTIVE OFFICER

- Attachments:
- A. General Location Map
 - B. Permit Area Map
 - C. District Recycled Water Program
 - 1. Requirements for Recycled Water Users
 - 2. Recycled Water Use Site Inspection Program
 - 3. Reuse Site Inspection Report
 - 4. Enforcement Response Plan
 - D. Standard Provisions for Waste Discharge Requirements
 - E. CDPH Approval and Comment Letters
 - 1. March 5, 2009 Letter
 - 2. May 15, 2009 Letter


ATTACHMENT A General Location Map

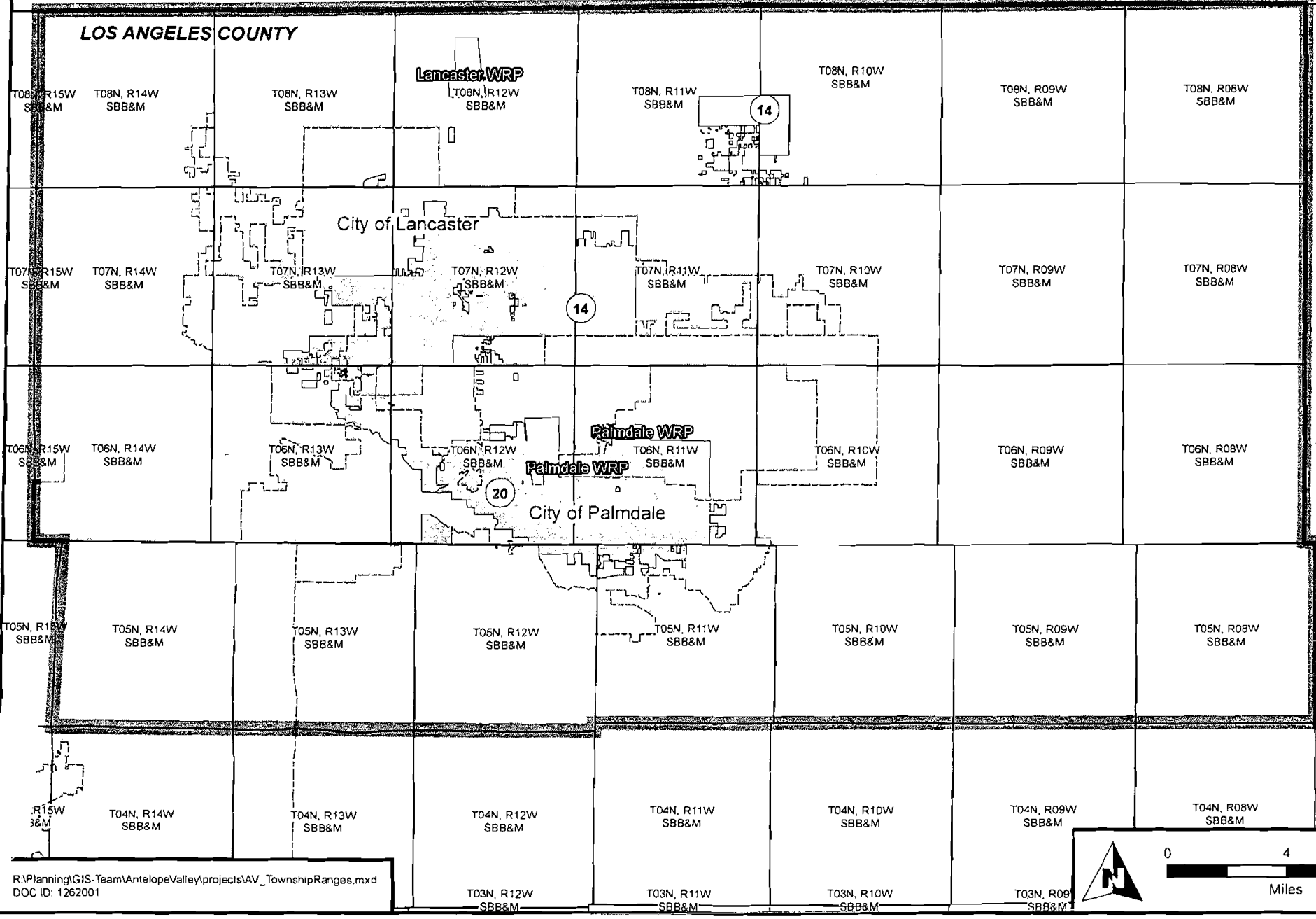


Modified from Figure 1, *Simulation of Groundwater Flow and Land Subsidence, Antelope Valley Groundwater Basin*, USGS, 2003

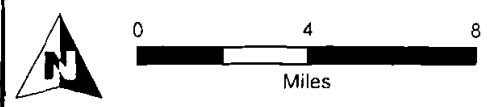
ANTELOPE VALLEY: LOS ANGELES COUNTY SANITATION DISTRICTS NO. 14 AND 20

KERN COUNTY

 Permit Area Boundary



SAN BERNARDINO COUNTY



ATTACHMENT C
District Recycled Water Program

1. Requirements for Recycled Water Users
2. Recycled Water Use Site inspection Program
3. Reuse Site Inspection Report
4. Enforcement Response Plan

**Requirements for Recycled Water Users
County Sanitation Districts of Los Angeles County
District Nos. 14 and 20**

1. Introduction

These Requirements for Recycled Water Users (Requirements) establish regulations pursuant to California Water Code (Water Code) section 13523.1(b), and permits issued to the County Sanitation Districts of Los Angeles County (Districts) by the California Regional Water Quality Control Board, Lahontan Region (LRWQCB). These permits include waste discharge requirements (WDRs) issued pursuant to Water Code section 13263, water reclamation requirements (WRRs) issued pursuant to Water Code section 13523, or a master reclamation permit (Master Permit) issued pursuant to Water Code section 13523.1. The Requirements are in conformance with ordinances adopted by County Sanitation District No. 14 of Los Angeles County and by County Sanitation District No. 20 of Los Angeles County (Ordinances).

2. Background

Water Code section 13523.1(a) authorizes the issuance of Master Permits to suppliers or distributors, or both, of recycled water in lieu of issuing individual water reclamation requirements to each recycled water user. Water Code section 13523.1(b) sets forth the requirements for Master Permits issued by the Regional Water Quality Control Boards (RWQCBs), including a condition that the permittee establish and enforce rules or regulations for recycled water users governing the design and construction of recycled water use facilities and the use of recycled water, in accordance with the uniform Statewide Reclamation Criteria established pursuant to Water Code section 13521.

A Master Permit has been adopted by the LRWQCB for the Lancaster Water Reclamation Plant (WRP). Should the LRWQCB issue individual WDRs or WRRs to the Districts for the use of tertiary recycled water for non-potable reuse applications from the Lancaster WRP or Palmdale WRP, it is the Districts' intent that the Requirements established herein will apply to those uses. These Requirements may be updated, as necessary, to comply with revisions to this permit or applicable laws and regulations.

3. Findings

The Requirements are in conformance with the following:

- Provisions established by the WDRs, WRRs, or Master Permits issued by the LRWQCB to the Districts.
- Applicable portions of the Water Code, including Water Code section 13523.1.
- Applicable portions of the Health and Safety Code.
- California Code of Regulations (CCR), Title 22, Division 4, Chapter 3, Uniform Statewide Reclamation Criteria.
- CCR, Title 17, Division 1, Chapter 5, Subchapter 1, Group 4, Article 1 & 2.
- Regulations established by the County of Los Angeles Department of Public Health (LACDPH) for the use of recycled water.

The Requirements are consistent with the following:

- The Guidelines for the *Preparation of an Engineering Report for the Production, Distribution and Use of Recycled Water*, California State Department of Public Health (CDPH).

- 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 the On-Site Retrofit of Facilities Using Disinfected Tertiary Recycled Water* or alternate measures that are acceptable to CDPH.
- Relevant user manuals such as the Los Angeles County Recycled Water Advisory Committee's, 2005, *Recycled Water User Manual*.
- Relevant guidance issued by LACDPH for the use of recycled water.

4. Definitions that Apply to these Requirements

- 4.1. Authorized Recycled Water Use Site (Site) is a site authorized for use of recycled water; the uses of recycled water and the site location must comply with Permits as issued by the LRWQCB to the Districts.
- 4.2. Direct User is any person to whom the Districts directly distribute recycled water under the Permits issued to the Districts by the LRWQCB.
- 4.3. Incidental Runoff is any small amount of recycled water that leaves the Site as a result of over-spray or leakage from sprinklers, over watering, breaks in lines, or overflow of impoundments that contain recycled water during storms.
- 4.4. Master Reclamation Permit (Master Permit) contains requirements established by the LRWQCB for the Districts pursuant to Water Code section 13523.1.
- 4.5. Permit means any LWRQCB issued WDRs, WRRs, or Master Permit.
- 4.6. Person is any individual, partnership, corporation, governmental subdivision or unit of a governmental subdivision, or public or private organization or entity of any character.
- 4.7. Purveyor is any public, private, investor-owned, or other water utility that is legally permitted to distribute water and that obtains recycled water from the Districts for distribution to Users.
- 4.8. Recycled water is water produced by a municipal water reclamation facility that is suitable for a beneficial use.
- 4.9. User is any person to whom the Districts distribute recycled water under the Permits issued to the Districts by the LRWQCB, including end users to whom recycled water is conveyed through an intermediate party. User does not include persons who have been independently issued Permits by the LRWQCB.
- 4.10. User Agreement is a contractual agreement between the User and/or Purveyor and the Districts that establishes the conditions for recycled water service and use.
- 4.11. Waste Discharge Requirements (WDRs) are requirements established for the Districts by the LRWQCB pursuant to Water Code section 13263.
- 4.12. Water Recycling Criteria are the criteria established by the CDPH generally dealing with the levels of constituents in recycled water and the means for assurance of reliability under the design concept, which will result in safe recycled water from the standpoint of public health. The criteria are established pursuant to Water Code Section 13521, and are contained in the CCR, Title 22, Division 4, Chapter 3; also referred to as the "Uniform Statewide Reclamation Criteria."
- 4.13. Water Recycling Requirements (WRRs) are requirements established for the Districts by the LRWQCB pursuant to Water Code section 13523.

5. Requirements for Recycled Water Users

5.1 Effective Date

The effective date of the Requirements is July 1, 2008.

5.2 Applicability

- 5.2.1 Unless otherwise stated, these Requirements shall apply to any and all Users to whom the Districts distribute tertiary recycled water, either directly or through an intermediate party. These Requirements shall also apply to Purveyors that act as intermediate parties in delivering recycled water to Users. User does not include persons who have been independently issued Permits by the LRWQCB.
- 5.2.2 These Requirements do not apply to the Districts, when the Districts are both the Purveyor and/or the User, receiving WDRs or WRRs issued by the LRWQCB for the use of tertiary recycled water.

5.3 General Requirements

Use of recycled water must comply with all applicable state laws, regulations, Districts' Permits, and any amendments thereto, the Ordinances, and these Requirements.

5.4 General Prohibitions

- 5.4.1 Use of recycled water for any purposes other than those explicitly approved in the effective User Agreement is strictly prohibited.
- 5.4.2 The User shall insure that the treatment, storage, distribution or use of recycled water shall not create a nuisance as defined in Water Code section 13050(m).
- 5.4.3 The User shall not discharge recycled water from treatment facilities, irrigation holding tanks, storage ponds, or other containment, other than for permitted reuse, except in accordance with other LRWQCB issued Permits, contingency plans authorized by the LRWQCB or for an approved discharge to a municipal sewage treatment system.

5.5 Process to Obtain Permission to Use Recycled Water

- 5.5.1 Except as provided by the Ordinances, any Direct User or Purveyor who wishes to receive recycled water produced by the Districts must enter into a User Agreement with District No. 14 or No. 20 depending on the location of the reuse project before the use of recycled water can begin. The User Agreement shall include the Districts' terms and conditions for the use of recycled water.
- 5.5.2 Any Direct User, or Purveyor with a User, who intends to utilize recycled water produced by the Districts for an authorized use at a Site must file a User Application Form (Application) with the Districts and receive approval in writing from the Districts before the use of recycled water can begin for that use and Site.
- 5.5.3 The Application filed by the Direct User or Purveyor shall include:
- 3.1. A detailed description of the proposed Site with:
 - (a) A map showing the specific boundaries of the proposed Site;
 - (b) The person or persons responsible for operation and maintenance of the site (O&M Staff), including the person designated as the Site Supervisor and contact information;

- (c) Evidence that the O&M Staff and Site Supervisor have received appropriate training from the Districts or an equivalent training program or the date by which training will occur prior to delivery of recycled water such that the Site is operated and maintained in compliance with applicable laws and regulations, the Districts' Permits, and these Requirements;
- (d) The specific use to be made of the recycled water at each Site.
- .3.2. Design plans and a description of best management practices that show that the quality of waters of the State will be protected (see Section 5).
- .3.3. Plans and specifications describing:
 - (a) Proposed piping systems to be used;
 - (b) Pipe locations for both recycled and potable systems;
 - (c) Type and location of the outlets and plumbing fixtures that will be accessible to the public;
 - (d) The methods and devices to be used to prevent backflow of recycled water into the potable water system.
- .3.4. The Recycled Water System Operations Manual or the date by which a Recycled Water System Operations Manual will be submitted prior to the delivery of recycled water.
- .3.5. Emergency Cross-Connection Response Plan in accordance with the guidelines established by LACDPH or the date by which the Emergency Cross-Connection Response Plan will be submitted prior to delivery of recycled water.
- 5.5.4 Any User or Purveyor who wishes to receive recycled water produced by the Districts must follow the process presented in Tables 1 and 2 that shows the various agencies involved in the process, documents that must be completed, how documents are routed, etc. Table 1 outlines the process for Direct Users or Purveyors. Table 2 outlines the process for Users receiving water from Purveyors

5.6 Operational Requirements and Best Management Practices

- 5.6.1 Each User shall designate a Site Supervisor who is responsible for the recycled water system at Site(s) under the User's control. Specific responsibilities of the Site Supervisor include the proper installation, operation and maintenance of the recycled water system; compliance with the Districts' Permits, applicable laws and regulations, local health department guidelines, and these Requirements; prevention of potential hazards; coordination with the cross-connection control program in accordance with CCR, Title 17 and LACDPH or local health department guidelines; preservation of the recycled water system in "as-built" form.
- 5.6.2 The User's Site Supervisor and O&M staff shall receive appropriate training to assure proper operation of the recycled water facilities, worker protection, and compliance with all applicable laws and regulations, the Districts' Permits, and these Requirements.
- 5.6.3 The Site Supervisor shall instruct any person at the Site involved with the use of recycled water on its proper use and precautions.
- 5.6.4 All recycled water facilities and control systems shall be maintained in good working order and operated as efficiently as possible to achieve compliance with all applicable laws and regulations, the Districts' Permits, and these Requirements.

- 5.6.5 Except as allowed under CCR, Title 17, section 7604, no physical connection shall be made nor shall a connection be allowed to exist between any recycled water system and potable water system.
- 5.6.6 Cross-connection test shall be performed as necessary to ensure the absolute separation of the recycled water system and potable water system, in accordance with the requirements of LACDPH or local health department.
- .6.1. A cross-connection test shall be performed following any significant modifications to the recycled water system or potable water system, construction of new buildings, or any activity that may impact, or has impacted these systems.
 - .6.2. An initial cross-connection test shall be performed to determine if there are any unknown connections between potable piping and existing piping to be used for recycled water prior to construction or retrofit work.
 - .6.3. Prior to connection with the recycled water system, a final cross-connection test shall be performed to verify that construction or retrofit work was performed correctly.
 - .6.4. Cross-connection testing shall be performed by a specialist who has been certified by AWWA or a group with equivalent certification requirements.
- 5.6.7 The potable 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 CCR, Title 17, section 7602, Subdivision (a) and CCR, Title 17, section 7603, Subdivision (a), and that such connection has been approved by CDPH and/or its delegated local agency.
- 5.6.8 Any backflow prevention device installed to protect the potable water system shall be annually inspected and maintained in accordance with CCR, Title 17, section 7605.
- .8.1. Backflow inspections shall be conducted by a person who has demonstrated competency in testing to the User, Purveyor, and/or LACDPH or local health department.
- 5.6.9 Hose bibs shall not be used in the recycled water system, except in the recycled water system for Sites for which there is restricted public access. Quick couplers that are different from that used on the potable water system may be used.
- 5.6.10 All recycled water piping and appurtenances in new installations and appurtenances in retrofit installations shall be colored purple or distinctively marked with purple tape in accordance with Health and Safety Code section 116815 and LACDPH or local health department requirements.
- 5.6.11 All sites shall be designed and operated to prevent direct human consumption of recycled water, or use of recycled water for processing of food or drink intended for human consumption.
- .11.1. Where recycled water could potentially be accessed for human consumption, conspicuous signs shall be posted that include the following wording: "RECYCLED WATER – DO NOT DRINK."
 - .11.2. The prescribed wording included on the sign(s) shall also be translated into Spanish and other appropriate languages.
 - .11.3. Each sign shall display an international symbol similar to that shown in CCR, Title 22, section 60310, subdivision (g), Figure 60310-A.
 - .11.4. The sign(s) shall be of a size easily readable by the public; no less than 4 inches high by 8 inches wide.

- 5.6.12 Irrigation with disinfected tertiary recycled water shall not take place within 50 feet of any domestic water supply well.
- 5.6.13 Irrigation with disinfected tertiary recycled water shall not take place within 50 feet of any uncovered reservoir or stream currently used as a source of domestic water.
- 5.6.14 Impoundment of disinfected tertiary recycled water shall not occur within 100 feet of any domestic water supply well.
- 5.6.15 All recycled water impoundments shall be adequately protected from erosion, washout and flooding from a 24-hour rainfall event having a predicted frequency of once in 100 years.
- 5.6.16 Vehicles used for distributing recycled water for soil compaction and dust control or other uses shall have an adequate tank and plumbing systems to ensure that leaks and ruptures will not occur in the course of normal use.
- 16.1. Control valves shall be provided and configured such that recycled water can be applied in a controlled fashion on the Site and completely retained during transit.
 - 16.2. Spray heads or nozzles shall be provided and configured such that recycled water is applied to prevent runoff, ponding, or windblown spray conditions.
 - 16.3. Each tank shall be equipped with an approved air-gap separation between the filler tube and the tank to prevent back-siphonage.
 - 16.4. Each tank used to store and/or transport recycled water must be flushed and disinfected prior to storage and/or transport of potable water or recycled water of better quality.
 - 16.5. The vehicles shall be clearly labeled in accordance with the requirements specified in Section 5.6.11.
- 5.6.17 Sites shall be designed and operated using best management practices (BMPs) to protect waters of the state and prevent public contact with recycled water.
- 5.6.18 The Sites shall be designed and operated using BMPs to prevent recycled water spray, mist, or surface flow from either leaving the Site or reaching:
- (a) Any perennial surface waters located adjacent to the Site;
 - (b) Areas where the public has access (e.g., dwellings, designated outdoor eating areas, or food handling facilities);
 - (c) Drinking fountains unless specifically protected with a shielding device.
- 5.6.19 BMPs shall include, but not be limited to:
- (a) Use of buffer zones;
 - (b) Discontinuation of application of recycled water during precipitation events, which are of sufficient magnitude to generate surface flow or significant ponding within the Site;
 - (c) Use of devices that protect drinking water fountains against contact with recycled water spray, mist, or surface flow;
 - (d) Irrigation with recycled water during periods of minimal human use of the irrigated area and timing of irrigation to allow an adequate dry-out time before the irrigated area will be used by the public.
- 5.6.20 Any storage facility or impoundment containing recycled water for reuse applications shall be managed in a manner to control odors, nuisance conditions or vectors such as

mosquitoes. Should such problems develop, a management plan shall be devised and implemented to monitor, correct, and control future occurrences.

- 5.6.21 Sites shall be designed and operated using BMPs so that application of recycled water occurs at agronomic rates whereby irrigation does not promote downward migration of salts (including nitrates), which could unreasonably affect present and anticipated beneficial uses of water, or result in water quality less than that prescribed in water quality control plans or policies.
- .21.1. To demonstrate whether irrigation is at agronomic rates, the User shall provide information to the Districts including a tabular comparison of the volume of water required for plant growth in the landscape area to the volume of recycled water (and supplemental water) applied to the area.
- 5.6.22 Fertilizer application shall:
- .22.1. Not unreasonably affect present and anticipated beneficial uses of water, or result in water quality less than that prescribed in water quality control plans or policies.
- .22.2. Occur at agronomic rates. To demonstrate whether fertilizer application is at agronomic rates, the User shall provide information to the Districts including a tabular comparison of the amount of fertilizer needed for plant growth in the landscape area to the amount applied to the area.
- .22.3. Occur if the levels of nitrogen in the recycled water are not sufficient for plant growth. If levels are not sufficient, the Site Supervisor shall calculate how much fertilizer needs to be applied by subtracting the level in recycled water from the level needed for plant growth.
- 5.6.23 Sites shall be designed and operated using BMPs so that adequate erosion control is implemented so that soil is not released into storm water runoff or surface waters.
- 5.6.24 Each User shall demonstrate to the Districts the means by which all applicable use area requirements as specified in the Districts' Permits and these Requirements will be complied with.

6. Site Inspections and Site Access

- 6.1 The Purveyor shall conduct periodic site inspections and prepare a report for each Site inspection pursuant to Section 8.3.
- .1.1. Site inspections must be conducted at a minimum once every three (3) years per site or more frequently at the request of the Districts.
- .1.2. In the event of identification of violation(s) during site inspections, corrective actions must be taken pursuant to Section 7 and notification shall be provided pursuant to Section 8.3.
- 6.2 The User shall allow an authorized representative of any of the following agencies the right to enter, inspect the Site, and conduct testing upon presentation of proper credentials: the Districts, LRWQCB, CDPH, and LACDPH or local health department.
- 6.3 In cooperation with the User or Purveyor, the Districts will make periodic inspections of the Site.

7. Corrective Action

- 7.1 The Site Supervisor shall immediately initiate corrective action to eliminate violation of any applicable laws or regulations, the Districts' Permits, or these Requirements, and make the appropriate notifications pursuant to Section 8.2.
- 7.2 The Purveyor or Direct User must verify the corrective action(s) and report to the Districts pursuant to Section 8.2.
- 7.3 In the event of contamination of a potable water system due to a cross-connection with the recycled water system, the Site Supervisor shall immediately invoke the Emergency Cross-Connection Response Plan and make the appropriate notifications pursuant to Section 8.1.

8. Notification and Reporting

8.1 Public Health, Spills, Unauthorized Discharges

- 8.1.1 Upon being notified or determining that one of the following events has occurred, the Site Supervisor shall immediately notify the Districts by telephone, and the LRWQCB, CDPH and LACDPH by telephone or electronic means. Written confirmation must be provided to all agencies within three (3) business days from the day of notification.
 - .1.1. There is a complaint (or other source of information) concerning recycled water use that may involve illness.
 - .1.2. An unauthorized discharge of more than 50,000 gallons of tertiary recycled water. Information provided shall include: the date and time the spill began and ended; the location of the spill; if the spill entered a storm drain or receiving water; the estimated volume of the spill or flow if the spill is ongoing; the estimated time of repair; the cause of the spill; the agencies involved with repair and clean-up; and corrective actions taken or plans for corrective actions.
 - .1.3. The potable water system has been contaminated due to a cross-connection with recycled water.
- 8.1.2 Upon being notified or determining that a spill or other release of recycled water from a Site, other than incidental runoff, including, but not limited to, breaks in the recycled water irrigation or distributions systems has occurred, the Site Supervisor shall immediately notify the Districts by telephone. Information provided shall include: the date and time the spill began and ended; the location of the spill; if the spill entered a storm drain or receiving water; the estimated volume of the spill or flow if the spill is ongoing; the estimated time of repair; the cause of the spill; the agencies involved with repair and clean-up; and corrective actions taken or plans for corrective actions. Written confirmation shall be provided within three (3) business days from the date of notification.

8.2 Non-compliance with Regulations

- 8.2.1 The Site Supervisor shall notify the Districts by telephone or electronic means upon knowledge of any noncompliance of applicable laws and regulations, the Districts' Permits, and these Requirements. Written confirmation shall be provided within three (3) business days from the date of notification.

8.2.2 The Purveyor or Direct User shall provide written verification to the Districts within ninety (90) days from the date of knowledge of the violation that corrective actions have been implemented.

8.3 Site Inspections

8.3.1 The site inspection report shall be signed and dated by the Site Supervisor and the inspector, and provided to the Districts within thirty (30) days following the end of the quarter in which the inspection was conducted.

8.3.2 The inspector shall immediately notify the Site Supervisor of violation(s) identified during site inspections and what corrective actions must be taken.

8.3.3 The Purveyor or Direct User shall notify the Districts by electronic means at least one (1) week prior to conducting a site inspection.

8.4 Miscellaneous Information

8.4.1 If someone other than the User is responsible for applying the recycled water (e.g., a truck hauler), then the User shall inform them of these Requirements in a written permit or other suitable manner.

8.4.2 The Site Supervisor is required to provide the Districts with an address and phone number(s) where he or she can be contacted at all times. The Site Supervisor is responsible for maintaining current pertinent information regarding the Site and Districts' contacts.

8.4.3 The Districts shall be notified in writing of any proposed changes in the individual designated as the Site Supervisor.

8.4.4 The Districts shall be notified in writing of any planned modifications or additions to the recycled water system. Any proposed significant modifications or additions to the recycled water system shall be reviewed and approved by the Districts before being made.

8.4.5 The User or Purveyor shall provide information as requested by the Districts in order for the Districts to comply with monitoring and reporting requirements issued by the LRWQCB.

9. Record Keeping

9.1 Current as-built drawings and other design plans of the recycled water system and potable water system, and any forms or reports as required by the Districts including, but not limited to, inspection reports, cross-connection tests, etc., shall be maintained by the Site Supervisor or Purveyor.

9.2 A copy of these Requirements, the Districts' Permits, the Emergency Cross-Connection Response Plan, and the Recycled Water System Operations Manual shall be maintained by the Site Supervisor so that they are available to operating personnel at all times.

9.3 For each site, the Site Supervisor or Purveyor must keep operation and maintenance logs that are available to the Districts. The logs shall include information that will be required for compliance with Permit requirements. This information, such as the monthly volumes of recycled water used at each site, dates of inspections and tests, etc, will be specified by the Districts in the approval letter.

Table 1. Process to Obtain Recycled Water for Direct Users or Purveyors

Process	Applicable Documents or Actions Required	Responsible Entity
<i>Step 1</i> – Consult with Districts and review Recycled Water Users Handbook	Districts' Recycled Water Users Handbook	Direct User or Purveyor
<i>Step 2</i> - Prepare draft plans and specifications	California Department of Public Health (CDPH) requirements in California Code of Regulations (CCR) Title 17 and 22 ¹ , Los Angeles County Department of Public Health (LACDPH) Guidelines	Direct User or Purveyor
<i>Step 3</i> - Draft User Agreement or amendment (if site is not covered under existing agreement)	Districts' User Agreement	Districts / Direct User or Purveyor
<i>Step 4</i> - Approve User Agreement or Amendment	Present Agreement or Amendment to Districts' Board and governing body of Direct User or Purveyor for approval	Districts / Direct User or Purveyor
<i>Step 5</i> - Submit Application for recycled water use	Districts' User Application Form	Direct User or Purveyor
<i>Step 6</i> - Identify distribution issues, verify allowed uses, estimate quantity of water and delivery schedule	Verification of information provided in the Application Form. Send conditional approval in writing with caveat that project commencement is contingent upon Direct User or Purveyor receiving all regulatory approvals.	Districts
<i>Step 7</i> – Complete California Environmental Quality Act (CEQA) Process	Make sure there is proper CEQA documentation for the site	Direct User or Purveyor
<i>Step 8</i> – Consult with health agencies (<i>recommended</i>)	Describe project and show draft plans to CDPH and LACDPH	Direct User or Purveyor
<i>Step 9</i> – Finalize and submit plans and specifications	Plans and specifications submitted to LACDPH; LACDPH Cross-Connection Plan Approval Application and fee.	Direct User or Purveyor
<i>Step 10</i> - Provide materials and/or training to User on proper operation of a recycled water system	Districts' Recycled Water Users Handbook to be provided by Districts; training to be provided by Districts and/or Purveyor (or an other equivalent program can be substituted)	Districts or Purveyor
<i>Step 11</i> – Consult with Lahontan Regional Water Quality Control Board (LRWQCB) (<i>recommended</i>)	Describe project and discuss Engineering Report needs	Direct User or Purveyor

¹ <http://www.cdph.ca.gov/healthinfo/environhealth/water/Pages/Waterrecycling.aspx>.

Table 1. Process to Obtain Recycled Water for Direct Users or Purveyors

Process	Applicable Documents or Actions Required	Responsible Entity
<i>Step 12</i> – Final plans and specifications	Obtain approval of final plans and specifications from LACDPH	Direct User or Purveyor
<i>Step 13</i> – Prepare / amend Engineering Report	CDPH <i>Guidelines for Preparation of an Engineering Report for the Production, Distribution and Use of Recycled Water</i> ² ; Districts' information on water reclamation plants; Direct User or Direct User or Purveyor completes the Engineering Report; the Districts provide information related to treatment facilities; the report must be prepared and stamped by a professional engineer registered in California.	Direct User or Purveyor and Districts
<i>Step 14</i> – Submit Engineering Report to CDPH and LRWQCB, with copy to Districts	Completed Engineering Report	Direct User or Purveyor
<i>Step 15</i> – If applicable, submit revised Engineering Report, with copy to Districts	Revisions/additional information may be requested by CDPH and/or the LRWQCB	Direct User or Purveyor
<i>Step 16</i> – Authorization of project under existing or new LRWQCB permit	Letter or permit	LRWQCB; possibly CDPH and/or LACDPH
<i>Step 17</i> – Notify Districts of Final Regulatory Approvals	Direct User or Purveyor sends copy of LRWQCB letter or permit to Districts and any other applicable CDPH or LACDPH documents	Direct User or Purveyor
<i>Step 18</i> – Pre- and post-construction inspections	Contact LACDPH prior to construction to arrange for site inspections, initial cross-connection and backflow prevention device testing; LACDPH Guidelines and Recycled Water System Inspection Report.	Direct User or Purveyor
<i>Step 19</i> – Approval of final construction	By LACDPH	Direct User or Purveyor
<i>Step 20</i> – Begin project implementation		Direct User or Purveyor
<i>Step 21</i> – Submit revised as-built drawings of recycled water distribution system if necessary	Must be provided to LACDPH and Districts if any modifications have been made to original drawings	Direct User or Purveyor

² <http://www.cdph.ca.gov/certlic/drinkingwater/Documents/Recharge/ERGUIDE2001.PDF>.

Table 2. Process to Obtain Recycled Water for Users Receiving Water From Purveyors

Process	Applicable Documents or Actions Required	Responsible Entity
Step 1 – Consult with Purveyor and review Recycled Water Users Handbook	Districts' Recycled Water Users Handbook	User and Purveyor
Step 2 – Prepare draft plans and specifications	California Department of Health Services (CDPH) requirements in California Code of Regulations (CCR) Title 17 and 22 ³ , Los Angeles County Department of Public Health (LACDPH) Guidelines.	User or Purveyor
Step 3 – Request for recycled water service	Use recycled water Purveyor's application process	User
Step 4 – Draft User Agreement or amendment (if site is not covered under existing agreement)	Districts' User Agreement or Amendment	Districts / Purveyor
Step 5 – Approve User Agreement or Amendment	Present Agreement or Amendment to Districts' Board and governing body of Purveyor for approval	Districts / Purveyor
Step 6 – Submit Application for recycled water use to Districts	Districts' User Application Form	Purveyor
Step 7 – Identify distribution issues, verify allowed uses, estimate quantity of water and delivery schedule	Verification of information provided in the Districts' User Application Form. Send conditional approval in writing with caveat that project commencement is contingent upon Direct User or Purveyor receiving all regulatory approvals.	Districts
Step 8 – Draft contract or amendment or other legal control mechanism (if site is not covered under existing contract or control mechanism)	Contract, contract amendment, or control mechanism between Purveyor and User	Purveyor and User
Step 9 – Approve contract or amendment or other legal control mechanism (if site is not covered under existing contract or control mechanisms)	Purveyor and User authorize contract, contract amendment, or control mechanism	Purveyor and User
Step 10 – Complete California Environmental Quality Act (CEQA) Process	Make sure there is proper CEQA documentation for the site	Purveyor and User
Step 11 – Consult with health agencies (<i>recommended</i>)	Describe project and show draft plans to CDPH and LACDPH	Purveyor
Step 12 – Finalize and submit plans and specifications	Plans and specifications submitted to LACDPH; LACDPH Cross-Connection Plan Approval Application and fee	Purveyor

³ <http://www.cdph.ca.gov/healthinfo/environhealth/water/Pages/Waterrecycling.aspx>.

Table 2. Process to Obtain Recycled Water for Users Receiving Water From Purveyors

Process	Applicable Documents or Actions Required	Responsible Entity
Step 13 – Provide materials and/or training to User on proper operation of a recycled water system	Districts' Recycled Water Users Handbook and training to be provided by Purveyor (the Districts' training program or another equivalent program can be substituted)	Purveyor
Step 14 – Consult with Lahontan Regional Water Quality Control Board (LRWQCB) (<i>recommended</i>)	Describe project and discuss Engineering Report needs	Purveyor
Step 15 – Final plans and specifications	Obtain approval of final plans and specifications from LACDPH	Purveyor
Step 16 – Prepare / amend Engineering Report	CDPH <i>Guidelines for Preparation of an Engineering Report for the Production, Distribution and Use of Recycled Water</i> ⁴ ; Districts' information on water reclamation plants; Purveyor completes the Engineering Report; the Districts provide information related to treatment facilities; the report must be prepared and stamped by a professional engineer registered in California.	Purveyor and Districts
Step 17 – Submit Engineering Report to CDPH and LRWQCB, with copy to Districts	Completed Engineering Report	Purveyor
Step 18 – If applicable, submit revised Engineering Report, with copy to Districts	Revisions/additional information may be requested by CDPH and/or the LRWQCB	Purveyor
Step 19 – Authorization of project under existing or new LRWQCB permit	Letter or permit	LRWQCB; possibly CDPH and/or LACDPH
Step 20 – Notify Districts of Final Regulatory Approvals	Purveyor sends copy of LRWQCB letter or permit to Districts and any other applicable CDPH or LACDPH documents	Purveyor
Step 21 – Pre- and post-construction inspections	Contact LACDPH prior to construction to arrange for site inspections, initial cross-connection and backflow prevention device testing; LACDPH <i>Guidelines and Recycled Water System Inspection Report</i>	Purveyor
Step 22 – Approval of final construction	By LACDPH	Purveyor
Step 23 – Begin project implementation		Purveyor and User
Step 24 – Submit revised as-built drawings of recycled water distribution system if necessary	Must be provided to LACDPH and Districts if any modifications have been made to original drawings	Purveyor

⁴ <http://www.cdph.ca.gov/certlic/drinkingwater/Documents/Recharge/ERGUIDE2001.PDF>.

**Recycled Water Use Site Inspection Program
County Sanitation Districts of Los Angeles County
· District Nos. 14 and 20**

1. Introduction

County Sanitation District Nos. 14 and 20 of Los Angeles County (Districts) have developed Requirements for Recycled Water Users (Requirements). The Requirements, which are mandated by the Water Code, have been developed to ensure that recycled water users comply with all applicable statutes, regulations, and the Districts' Master Permits. A Master Permit has been adopted by the California Regional Water Quality Control Board, Lahontan Region (LRWQCB) for the Lancaster Water Reclamation Plant (WRP). The Districts expect that a Master Permit for the Palmdale WRP will also be adopted in the future. For Master Permits, the Water Code specifies that the permittee conduct "periodic" inspections of the recycled water use sites (Sites) to monitor compliance with the uniform statewide recycling criteria established by California Department of Public Health (CDPH) and the Requirements of the Master Permit. The Requirements address Site inspections in Sections 6, 7, 8 and 9. This document summarizes the requirements pertaining to Site inspections and describes specific implementation procedures.

2. Inspection Program

The inspection program will consist of the following elements:

- 2.1. The Districts' inspection program consists of inspections conducted by both the Districts and the Purveyors, currently the City of Lancaster and the Los Angeles County Waterworks District No. 40. These inspections are in addition to inspections conducted by the Los Angeles County Department of Public Health (LACDPH) or other regulatory agencies.
- 2.2. The Districts will conduct an initial baseline inspection of new Sites during their first year of operation. The LACDPH will also conduct inspections during Site construction and prior to a Site's initial operation.
- 2.3. Upon completion of the baseline inspections, the Districts will conduct periodic site inspections once every three years. The Districts may conduct more frequent inspections depending on factors such as compliance record, potential for human exposure to recycled water and Site retrofits.
- 2.4. For Sites out of compliance, the Districts will conduct annual follow-up inspections.
- 2.5. The Purveyors must also conduct periodic inspections once every three years at a minimum. These inspections will be independent of the Districts' inspections. The Districts may require more frequent inspections by the Purveyors depending on factors such as compliance record, potential for human exposure to recycled water and Site retrofits.
- 2.6. The Districts will work with the Purveyors and users to ensure that the periodic inspections address the Master Permits, the Requirements, applicable laws and regulations, and LACDPH or local health department guidelines.
- 2.7. The Districts require Purveyors to develop and initiate an inspection program within the first year of a Site's operation.
- 2.8. A Site Inspection Report will be completed for each inspection. The Districts' Site Inspection Report Form is attached. The Purveyors may elect to use the Districts' Site Inspection Report

Form for adopt their own. In the latter case, the Districts will work with the Purveyors to ensure all regulatory requirements are addressed in the Site Inspection Report.

- 2.9. The Site Inspection Report shall be signed and dated by the Site Supervisor and the inspector, and provided to the Districts (if the Districts are not the inspector) within thirty (30) days following the end of the quarter in which the inspection was conducted.
- 2.10. The inspector shall immediately notify the Site Supervisor of violation(s) identified during Site inspections and what corrective actions and follow up actions must be taken.
- 2.11. The Site Supervisor shall notify the Districts by telephone or electronic means upon knowledge of any noncompliance with applicable laws and regulations, the Districts' Permits, and the Requirements. Written confirmation shall be provided within three (3) business days from the date of notification.
- 2.12. The Purveyor or Direct User shall provide written verification to the Districts within ninety (90) days from the date of knowledge of the violation that corrective actions have been implemented.
- 2.13. Site Inspection Reports shall be maintained by the Site Supervisor or Purveyor.
- 2.14. The Purveyor shall notify the Districts by electronic means at least one (1) week prior to conducting a Site inspection.
- 2.15. The Districts will maintain a database of Sites, inspections, and compliance actions.
- 2.16. The recycled water user shall allow an authorized representative of any of the following agencies the right to enter and conduct an inspection of the Site upon presentation of proper credentials: the Districts, LRWQCB, CDPH, LACDPH or local health department.

**REUSE SITE INSPECTION REPORT
COUNTY SANITATION DISTRICTS OF LOS ANGELES COUNTY
District Nos. 14 and 20**

Recycled Water User:

Location of Site:

Type of Use:

Date & Time of Inspection:

Name of Inspector:

Name of User Representative/Title:

VERIFICATION OF COMPLIANCE INSPECTION AND ENFORCEMENT PROGRAM

Is recycled water used for any purposes not listed in the Regional Water Quality Control Board permit(s)? If yes, please provide an explanation in the space below.

Yes

No

Have there been any changes or modifications to the recycled water system? If yes, please provide an explanation in the space below.

Yes

No

Has there been a change in the Site Supervisor? If yes, please provide updated information in the space below.

Yes

No

Has on-site staff received appropriate training? If no, please explain in the space below when training will be provided.

Yes

No

Reuse Site:

Date:

Are copies of the Site Operation Manual, Emergency Cross-Connection Response Plan, and Districts' <i>Requirements for Recycled Water Users</i> available to employees at all times? If no, please explain in the space below how and when this will be corrected.	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Are there complete and up-to-date O&M records for the recycled water system? If no, please explain in the space below how and when this will be corrected.	<input type="checkbox"/> Yes	<input type="checkbox"/> No
INSPECTION OF USER OPERATIONS		
Is irrigation limited to the authorized use areas? If no, please explain in the space below how and when this will be corrected.	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Is recycled water running off from the authorized use area through surface runoff or windblown spray? If yes, please explain in the space below how and when this will be corrected, and make note of the source, volume, and destination of the runoff.	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Are any unusual odors associated with the recycled water use, supply, or storage? If yes, please explain in the space below how and when this will be corrected.	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Is there any evidence of ponding of recycled water? If yes, please explain in the space below how and when this will be corrected.	<input type="checkbox"/> Yes	<input type="checkbox"/> No

Reuse Site:

Date:

<p>Is there any evidence of mosquito breeding? If yes, please explain in the space below how and when this will be corrected.</p>	<p><input type="checkbox"/> Yes</p>	<p><input type="checkbox"/> No</p>
<p>Are signs properly placed, labeled and legible with regard to not drinking recycled water?. If no, please explain in the space below how and when this will be corrected.</p>	<p><input type="checkbox"/> Yes</p>	<p><input type="checkbox"/> No</p>
<p>Are tags visible and legible? If no, please explain in the space below how and when this will be corrected.</p>	<p><input type="checkbox"/> Yes</p>	<p><input type="checkbox"/> No</p>
<p>Is there any evidence of overflows, erosion, or improper management of impoundments? If yes, please explain in the space below how and when this will be corrected</p>	<p><input type="checkbox"/> Yes</p>	<p><input type="checkbox"/> No</p>
<p>Are there any leaks or breaks in the irrigation system piping or evidence of plugged, broken, or otherwise faulty irrigation components including sprinklers? If yes, please explain in the space below how and when this will be corrected.</p>	<p><input type="checkbox"/> Yes</p>	<p><input type="checkbox"/> No</p>
<p>Is recycled water being sprayed directly on people, dwellings, food-handling facilities, or drinking fountains? If yes, please explain in the space below how and when this will be corrected</p>	<p><input type="checkbox"/> Yes</p>	<p><input type="checkbox"/> No</p>

Reuse Site:

Date:

<p>Is irrigation system being operated during periods of minimal human use with adequate time to dry-out before public use? If no, please explain in the space below how and when this will be corrected.</p>	<p><input type="checkbox"/> Yes</p>	<p><input type="checkbox"/> No</p>
<p>Does irrigation take place within 50 feet of any domestic water supply well? If yes, please explain in the space below how and when this will be corrected.</p>	<p><input type="checkbox"/> Yes</p>	<p><input type="checkbox"/> No</p>
<p>Does impoundment of disinfected tertiary recycled water occur within 100 feet of any domestic water supply well? If yes, please explain in the space below how and when this will be corrected.</p>	<p><input type="checkbox"/> Yes</p>	<p><input type="checkbox"/> No</p>
<p>Does irrigation take place within 50 feet of any uncovered reservoir or stream currently used as a source of domestic water? If yes, please explain in the space below how and when this will be corrected.</p>	<p><input type="checkbox"/> Yes</p>	<p><input type="checkbox"/> No</p>
<p>Are all impoundments property maintained and adequately protected from erosion, washout, and flooding from a 24-hour rainfall event having a predicted frequency of once in 100 years? If no, please explain in the space below how and when this will be corrected.</p>	<p><input type="checkbox"/> Yes</p>	<p><input type="checkbox"/> No</p>
<p>Are there any hose bibbs in the recycled water system? If yes, please explain in the space below how and when this will be corrected.</p>	<p><input type="checkbox"/> Yes</p>	<p><input type="checkbox"/> No</p>

Reuse Site:
Date:

<p>Are pipes properly maintained and marked? If no, please explain in the space below how and when this will be corrected.</p>	<input type="checkbox"/> Yes	<input type="checkbox"/> No
<p>Are valves and controllers properly maintained and marked? If no, please explain in the space below how and when this will be corrected.</p>	<input type="checkbox"/> Yes	<input type="checkbox"/> No
<p>Are points of connection properly maintained and marked? If no, please explain in the space below how and when this will be corrected.</p>	<input type="checkbox"/> Yes	<input type="checkbox"/> No
<p>Are other recycled water facilities and control systems including but not limited to pump stations, storage facilities and pressure reducers properly maintained? If no, please explain in the space below how and when this will be corrected.</p>	<input type="checkbox"/> Yes	<input type="checkbox"/> No
<p>Is backflow prevention in place? If no, please explain in the space below how and when this will be corrected.</p>	<input type="checkbox"/> Yes	<input type="checkbox"/> No
<p>Is there a schedule for testing backflow prevention and is testing up to date? If no, please explain in the space below how and when this will be corrected.</p> <p>Date of Last Test: _____</p>	<input type="checkbox"/> Yes	<input type="checkbox"/> No

Reuse Site:

Date:

<p>Is there a need for cross-connection testing due to major modifications to the system? If yes, in the space below explain when the testing will be conducted.</p>	<input type="checkbox"/> Yes	<input type="checkbox"/> No
<p>Are best management practices being used to prevent erosion control and runoff? If no, please explain in the space below how and when this will be corrected.</p>	<input type="checkbox"/> Yes	<input type="checkbox"/> No
<p>Are best management practices being used to irrigate at agronomic rates? If no, please explain in the space below how and when this will be corrected.</p>		
<p>Is fertilizer being used? If yes explain below how best management practices are being used to protect water quality.</p>	<input type="checkbox"/> Yes	<input type="checkbox"/> No
<p>REQUIRED ACTION/FOLLOW-UP ACTION</p>		
<input type="checkbox"/> None		
<input type="checkbox"/> Yes by District – List	<p>Compliance Date</p>	<p>Date Achieved</p>
<input type="checkbox"/> Yes by User – List		

Enforcement Response Plan for Requirements for Recycled Water Users (ERP)
County Sanitation Districts of Los Angeles County
District Nos. 14 and 20

1. Introduction

In 2006 and 2007, County Sanitation District Nos. 14 and 20 of Los Angeles County (Districts) adopted Ordinances to govern the permitting, enforcement, and inspection activities associated with the use of recycled water to ensure that the Districts had the authority to take action to correct inappropriate uses of recycled water, revoke water users' sales agreements if inappropriate uses persisted, and cease deliveries of recycled water. In conformance with the Ordinances, the Districts have also established *Requirements for Recycled Water Users* (Requirements) to ensure that recycled water users comply with all applicable statutes, regulations, and the Districts' Master Reclamation Permits. The Requirements contain rules governing the use of recycled water, procedures for obtaining permission to use recycled water, requirements for the operation and management of sites, information on site inspection and site access, corrective actions, notification and reporting, and record keeping.

Timely and consistent enforcement of the Ordinances and Requirements is critical to the success of the Districts' water recycling program. Thus, the Districts have developed this ERP to create a framework for identifying and investigating instances of noncompliance, and for taking enforcement actions that are appropriate in relation to the nature and severity of the violation. It is the Districts' intent to respond to violations as soon as they are discovered and to encourage users to achieve compliance as soon as possible. The overall goal of the ERP is to promote and ensure compliance among recycled water users.

2. Progressive Enforcement

The ERP is founded on the principle of progressive enforcement. Progressive enforcement is an escalating series of actions that allows for the efficient and effective use of enforcement resources to: 1) assist users in achieving compliance; 2) compel compliance for repeat violations; and 3) provide a disincentive for noncompliance.

While the Districts consider each violation to be a priority that needs to be corrected immediately, the Districts intend to tailor the type of enforcement response to the severity of the violation. For example, for very serious violations, a user's recycled water service may be terminated. For less serious violations, the response may be a verbal notification or a written notice or compliance letter. Also, if a violation continues, the enforcement response may be escalated until compliance is achieved.

Examples of more serious types of violations may include, but are not limited to:

- Unauthorized discharges of recycled water, including discharge to surface water.
- Spraying of food prep areas or drinking fountains.
- Creating a nuisance condition, which would include any action that is injurious to health, is indecent or offensive to the senses, obstructs the use of property, or otherwise adversely affects an individual or community.

- Allowing for, or creating, cross-connections between a recycled water line and a potable water line.
- Allowing for backflow between a recycled water system and a potable water system or failure to install backflow prevention devices.
- Failure to prevent recycled water from leaving the site.
- Allowing the use of recycled water outside of an approved area.
- Unauthorized use of recycled water.
- Failure to conduct cross-connection or backflow prevention testing.
- Failure to allow access for inspections.
- Failure to take or complete corrective actions.
- Failure to report spills greater than 50,000 gallons, and incidents of illness, cross-connections or backflow.
- Failure to notify the Districts of violations.

Examples of less serious violations may include, but are not limited to:

- Failure to maintain the recycled water system in good working condition.
- Allowing ponding or pooling of recycled water.
- Improper signage or marking of reuse facilities.
- Improper pipe, valves, valve boxes, etc.
- Improper operation or application of best management practices at reuse sites.
- Irrigation above agronomic rate or fertilizer needs.
- Failure to provide training for recycled water system by personnel.
- Failure to report minor releases of recycled water from the site.
- Failure to provide the Districts with required or requested information.
- Failure to keep records.
- Failure to appoint and maintain a Site Supervisor.

Violations may be found during routine inspection by purveyors or during routine operations by users. Once a violation is discovered, the Site Supervisor must take actions in accordance with Sections 7 (Corrective Action) and 8 (Notification and Reporting) of the Requirements. Such actions include: 1) immediately notifying the Districts and regulatory agencies; 2) providing written confirmation to the Districts and regulatory agencies within 3 business days from the date of notification; 3) providing follow-up documentation that the necessary corrections have been made.

If violations are found during a Districts' inspection, they will be noted on the Districts' inspection form with required follow-up actions and compliance dates. Verification of the corrective action must be made by the purveyor within 90 days of the initial inspection and reported to the Districts.

ATTACHMENT D
Standard Provisions for Waste Discharge Requirements

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LAHONTAN REGION

STANDARD PROVISIONS
FOR WASTE DISCHARGE REQUIREMENTS

1. Inspection and Entry

The discharger shall permit Regional Board staff:

- a. to enter upon premises in which an effluent source is located or in which any required records are kept;
- b. to copy any records relating to the discharge or relating to compliance with the waste discharge requirements;
- c. to inspect monitoring equipment or records; and
- d. to sample any discharge.

2. Reporting Requirements

- a. Pursuant to California Water Code 13267(b), the discharger shall immediately notify the Regional Board by telephone whenever an adverse condition occurred as a result of this discharge; written confirmation shall follow within two weeks. An adverse condition includes, but is not limited to, spills of petroleum products or toxic chemicals, or damage to control facilities that could affect compliance.
- b. Pursuant to California Water Code Section 13260 (c), any proposed material change in the character of the waste, manner or method of treatment or disposal, increase of discharge, or location of discharge, shall be reported to the Regional Board at least 120 days in advance of implementation of any such proposal. This shall include, but not be limited to, all significant soil disturbances.
- c. The owner(s) of, and discharger upon, property subject to waste discharge requirements shall be considered to have a continuing responsibility for ensuring compliance with applicable waste discharge requirements in the operations or use of the owned property. Pursuant to California Water Code Section 13260(c), any change in the ownership and/or operation of property subject to the waste discharge requirements shall be reported to the Regional Board. Notification of applicable waste discharge requirements shall be furnished in writing to the new owners and/or operators and a copy of such notification shall be sent to the Regional Board.
- d. If a discharger becomes aware that any information submitted to the Regional Board is incorrect, the discharger shall immediately notify the Regional Board, in writing, and correct that information.

- e. Reports required by the waste discharge requirements, and other information requested by the Regional Board, must be signed by a duly authorized representative of the discharger. Under Section 13268 of the California Water Code, any person failing or refusing to furnish technical or monitoring reports, or falsifying any information provided therein, is guilty of a misdemeanor and may be liable civilly in an amount of up to one thousand dollars (\$1000) for each day of violation.
- f. If the discharger becomes aware that their waste discharge requirements are no longer needed (because the project will not be built or the discharge will cease) the discharger shall notify the Regional Board in writing and request that their waste discharge requirements be rescinded.

3. Right to Revise Waste Discharge Requirements

The Board reserves the privilege of changing all or any portion of the waste discharge requirements upon legal notice to and after opportunity to be heard is given to all concerned parties.

4. Duty to Comply

Failure to comply with the waste discharge requirements may constitute a violation of the California Water Code and is grounds for enforcement action or for permit termination, revocation and reissuance, or modification.

5. Duty to Mitigate

The discharger shall take all reasonable steps to minimize or prevent any discharge in violation of the waste discharge requirements which has a reasonable likelihood of adversely affecting human health or the environment.

6. Proper Operation and Maintenance

The discharger shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that are installed or used by the discharger to achieve compliance with the waste discharge requirements. Proper operation and maintenance includes adequate laboratory control, where appropriate, and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems that are installed by the discharger, when necessary to achieve compliance with the conditions of the waste discharge requirements.

7. Waste Discharge Requirement Actions

The waste discharge requirements may be modified, revoked and reissued, or terminated for cause. The filing of a request by the discharger for waste discharge requirement modification, revocation and reissuance, termination, or a notification of planned changes or anticipated noncompliance, does not stay any of the waste discharge requirements conditions.

8. Property Rights

The waste discharge requirements do not convey any property rights of any sort, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations.

9. Enforcement

The California Water Code provides for civil liability and criminal penalties for violations or threatened violations of the waste discharge requirements including imposition of civil liability or referral to the Attorney General.

10. Availability

A copy of the waste discharge requirements shall kept and maintained by the discharger and be available at all times to operating personnel.

11. Severability

Provisions of the waste discharge requirements are severable. If any provision of the requirements is found invalid, the remainder of the requirements shall not be affected.

12. Public Access

General public access shall be effectively excluded from treatment and disposal facilities.

13. Transfers

Providing there is no material change in the operation of the facility, this Order may be transferred to a new owner or operation. The owner/operator must request the transfer in writing and receive written approval from the Regional Board Executive Officer.

14. Definitions

- a. "Surface waters" as used in this Order, include, but are not limited to, live streams, either perennial or ephemeral, which flow in natural or artificial water courses and natural lakes and artificial impoundments of waters. "Surface waters" does not include artificial water courses or impoundments used exclusively for wastewater disposal.
- b. "Ground waters" as used in this Order, include, but are not limited to, all subsurface waters being above atmospheric pressure and the capillary fringe of these waters.

15. Storm Protection

All facilities used for collection, transport, treatment, storage, or disposal of waste shall be adequately protected against overflow, washout, inundation, structural damage or a significant reduction in efficiency resulting from a storm or flood having a recurrence interval of once in 100 years.

ATTACHMENT E
CDPH Approval and Comment Letters

1. March 5, 2009 Letter
2. May 15, 2009 Letter



MARK B HORTON, MD, MSPH
Director

State of California—Health and Human Services Agency
California Department of Public Health



ARNOLD SCHWARZENEGGER
Governor

March 5, 2009

Mr. Mike Plaziak, Supervising Engineer
California Regional Water Quality Control Board - Lahontan Region
Victorville Branch Office
14440 Civic Drive, Suite 200
Victorville, CA 92392-2306

**SYSTEM NO. 1990005 – (REVISED) COMMISSIONING TESTS SUMMARY REPORT
FOR WEDECO TAK-55HP ULTRAVIOLET LIGHT (UV) DISINFECTION SYSTEM OF
THE MEMBRANE BIO-REACTOR (MBR) PLANT, LANCASTER, CALIFORNIA
(REVISED)**

Dear Mr. Plaziak:

We have received comments from Mr. Phil Ackman of the Sanitation Districts of Los Angeles County (District) regarding the Department's letter dated December 2, 2008. The letter refers to the District's Lancaster UV Field Commissioning Tests Summary Report (Report) for the Wedeco TAK-55HP UV Reactor prepared by Carollo Engineers, dated September 2008. The Department has reviewed the District's comments to the recommended provision provided in the Department's letter and determines that they are reasonable. Therefore, the Department has incorporated the District's comments to the following recommended provisions (changes are in *italic*):

1. These recommendations are based on the equipment cited in the Report. No equivalents or substitutions will be accepted without a demonstration of equivalent disinfection performance.
2. Since the LWWTP uses a membrane filter, the UV system must be operated to deliver a minimum UV dose of 80 mJ/cm² at all times.
3. The equations from the Report are to be used as part of the automatic UV disinfection control system for calculating UV dose and should be specified as a permit provision. They are:

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Equation 3

$$\text{Dose} = (S / (0.8 * S_0)) * 10^{-2.2548 - 0.8538 * \log \text{Flow} + 2.9182 * \log \text{UVT}}$$

Equation 4

$$S_0 = -0.046359 * \text{UVT} + 0.001476 * \text{UVT}^2$$

Where:

Dose = Delivered UV dose per bank (mJ/cm²);

UVT = % UV transmittance at 254 nm (%);

Flow = Flow rate per lamp [gallons per minute (gpm)/lamp], with gpm/lamp calculated as gpm divided by the number of lamps in one bank;

S = UV intensity as measured by the UV sensor, mW/cm²;

S₀ = Expected UV intensity of a new lamp at 100 percent output and unfouled conditions, mW/cm²;

4. The LWWTP Wedeco UV Reactor is limited to the following operational parameter ranges:
 - a. Permit only flows from 230 to 866 gpm (0.3 to 1.2 MGD). The actual capacity of the Wedeco UV system for the design conditions of 65 % UVT, 80 mJ/cm² dose, end-of-lamp-life (EOLL) of 0.88, and fouling factor (FF) of 0.8, using Equations ES-1 and ES-2 of the Report, results in a capacity of 0.91 MGD (630 gpm). If the design capacity is to be based on 66.6 percent UVT, the system capacity using Equations ES-1 and ES-2 from this report meets the 1.0 mgd design objective with a delivered dose of 80.1 mJ/cm².
 - b. Under worse-case conditions, assume end-of-lamp-life (EOLL) of 0.88, and fouling factor (FF) of 0.8; however, proper operation and maintenance should produce more favorable conditions and this may be monitored by UV intensity sensors.

- c. UVTs should be maintained at or above 67 percent¹, unless the EOLL and FF can be demonstrated to be better than the assumed worst case factors, as measured by properly calibrated UV intensity sensors;
- d. The water level in the Wedeco UV Reactor is maintained below the maximum value of 19.13 inches.
5. In all cases, the UV intensity sensors must monitor the combined effect of UVT, lamp aging and sleeve fouling to ensure that the target UV dose is being met at all times.
6. Flow meters, UV intensity sensors, and UVT monitors must be properly calibrated to ensure proper disinfection.
7. UV intensity sensors (duty sensors) must be checked against a reference sensor at least monthly.
8. For all UV intensity sensors in use, the ratio of the duty UV sensor intensity to the reference UV sensor intensity must be less than or equal to 1.2. If the calibration ratio is >1.2, the failed duty UV sensor must be replaced by a properly calibrated sensor and recalibrated by a qualified facility. The reference UV intensity sensors shall be recalibrated at least annually by a qualified facility using a National Institute of Standards and Technology (NIST) traceable standard.
9. UVT meter must be inspected and checked against a reference bench-top unit weekly to document accuracy.
10. *If the on-line analyzer UVT reading varies from the bench-top spectrophotometer UVT reading by 2% or more, the on-line UVT analyzer must be recalibrated by a procedure recommended by the manufacturer.*
11. *Flow meters measuring the flow through a UV reactor must be verified to determine accuracy at least monthly via checking the flow reading against other flow determination methods.*
12. The facility should be operated in accordance with an approved operations plan, which specifies clearly the operational limits and responses required for critical alarms.
13. These applicable recommendations should be incorporated into the final permit for the UV system. Approval for the use of any and all water recycling

¹ At UVT values below 67 percent, the validated and checked equations state that the Wedeco TAK-55HP can deliver 80 mJ.cm² at a flow rate of 0.91 MGD, assuming the EOLL and FF.

Mr. Mike Plaziak
March 5, 2009
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applications is granted through the Regional Water Quality Control Board's Water Reclamation permitting process.

If you have questions regarding this letter, please contact Mr. Chi Diep at (213) 580-5727 or myself at (213) 580-3127.

Sincerely,

A handwritten signature in black ink, appearing to read 'S. Cajina', with a horizontal line extending to the right.

Stefan Cajina, P.E.
District Engineer
Central District

Mr. Mike Plaziak
March 5, 2009
Page 5

cc: Curt Shifrer
California Regional Water Quality Control Board - Lahontan Region
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State of California—Health and Human Services Agency
California Department of Public Health

MARK B HORTON, MD, MSPH
Director



ARNOLD SCHWARZENEGGER
Governor

May 15, 2009

Mr. Mike Plaziak, Supervising Engineer
California Regional Water Quality Control Board - Lahontan Region
Victorville Branch Office
14440 Civic Drive, Suite 200
Victorville, CA 92392-2306

Dear Mr. Plaziak:

**SYSTEM NO. 1990005 – COMMISSIONING TESTS SUMMARY REPORT FOR
TROJAN 3000PLUS ULTRAVIOLET LIGHT (UV) DISINFECTION SYSTEM OF THE
MEMBRANE BIO-REACTOR (MBR) PLANT, LANCASTER, CALIFORNIA**

We were recently informed that there was an error on the letter dated April 15, 2009 regarding the above subject that was sent to your office. The dose equation under recommendation 5b has been corrected. Please replace the April 15, 2009 letter with the corrected version attached.

If you have questions regarding this letter, please contact Mr. Chi Diep at (213) 580-5727 or myself at (213) 580-3127.

Sincerely,

Stefan Cajina, P.E.
District Engineer
Central District

Enclosure

MAY 19 2009 AM 09:45

DOC #

TREMBLAY R

Mr. Mike Plaziak
May 15, 2009
Page 2

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State of California—Health and Human Services Agency
California Department of Public Health



ARNOLD SCHWARZENEGGER
Governor

April 15, 2009

Mr. Mike Plaziak, Supervising Engineer
California Regional Water Quality Control Board - Lahontan Region
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**SYSTEM NO. 1990005 – COMMISSIONING TESTS SUMMARY REPORT FOR
TROJAN 3000PLUS ULTRAVIOLET LIGHT (UV) DISINFECTION SYSTEM OF THE
MEMBRANE BIO-REACTOR (MBR) PLANT, LANCASTER, CALIFORNIA**

Dear Mr. Plaziak:

We have reviewed the Sanitation Districts of Los Angeles County (District) Lancaster UV Field Commissioning Tests Summary Report (Report) for the Trojan 3000Plus UV Reactor prepared by Carollo Engineers, dated December 2008 – revised February 2009. The Trojan UV Reactor is being evaluated as a primary disinfection process for the District's Membrane Bio-Reactor (MBR) treatment process at the Lancaster Waste Water Treatment Plant (LWWTP). UV disinfection systems designed and tested following the National Water Research Institute/American Water Works Association's UV Disinfection Guidelines (2003), when combined with accepted filtration technologies, should adequately achieve the microbiological water quality objectives of the California Code of Regulations, Title 22, Chapter 3, Article 1, Section 60301.230 (a)(2).

The Report documented the performance verification testing for the Trojan UV Reactor at Lancaster. The verification process included an on-site checkpoint bioassay using seeded MS2 applied over a range of flows. Results documenting virus disinfection performance of the UV system compared to the standards found in Title 22 CCR were submitted in the Report for review by the Department. The Department has completed its review and recommends the approval of the Trojan 3000Plus UV Reactor for the LWWTP with the following recommendations:

1. The following recommendations are based on the equipment cited in the report. No equivalents or substitutions will be accepted without a demonstration of equivalent disinfection performance.

2. Since the District's Lancaster plant uses a membrane filter, the UV system must be operated to deliver a minimum UV dose of 80 mJ/cm^2 at all times. The equation from the February 2006 validation report is to be used as part of the automatic UV disinfection control system for calculating UV dose and should be specified as a permit provision. This equation must be verified or modified via the on-site bioassay.
3. The District's Lancaster UV system has a sixteen-bulb array, rather than the twenty-four-bulb array configuration that was validated in 2005 and documented in "UV3000Plus Validation Report, Final" (Carollo Engineers, February 2006). Therefore, the hydraulic characteristics and ability to inactivate MS-2 must be re-validated.
4. The Report has the following issues delineated below.
 - a. Tests were conducted at six flow rates in May and July 2007 (T1-T6), ranging from 164 to 830 gpm (the plant is rated at a maximum of one MGD or 694 gpm). These "check-points" were compared to the dose predicted by the operating equation developed and documented in the validation report of February 2006. Comparing the "Lower 75% Confidence Interval UV Dose/Bank mJ/cm^2 ", which is recommended by the NWRI guidance¹, the District's Lancaster UV system tests were from 49% less to 17% more dose delivered than predicted by the equation from the February 2006 validation report. Three of the six tests were below what the validated operational equation predicted.
 - i. T4 was conducted at 830 gpm and the average dose measured was 34 mJ/cm^2 with a Lower 75% Confidence Interval (CI) of 32.7 mJ/cm^2 . This was 49% less dose delivered than predicted. An explanation for this poor performance postured by Carollo is that the hydraulics were poor because the water level was 0.25 inches too high at 17.25 inches.
 - ii. Carollo proposes a maximum water level of 17 inches. It should be clarified whether the control system can ensure that the water level will not exceed 17.0 inches.
 - iii. Test T4 should be disregarded because it was above the acceptable highest flow.

¹ 2003 Ultraviolet Disinfection Guidelines for Drinking Water and Water Reuse published by the National Water Research Institute/AWWA Research Foundation.

- b. Tests were conducted at three flow rates in April 2008 (T7-T9), ranging from 396 to 719 gpm.
- c. Seven more tests were conducted in July 2008 (C1-C7), at flow rates ranging from 389 to 700 gpm.
- d. The District proposed development of a unique, site-specific UV dose equation for the Lancaster Trojan 3000Plus UV system. Analysis and incorporation of these results in development of a site-specific UV dose equation has the following issues:
 - i. Tests were conducted by District.
 - ii. Only two effluent samples were collected per tests C1-C7 as opposed to five for tests T1-T9.
 - iii. Lower 75% Confidence Interval (CI) calculations raise questions because there are only two numbers rather than five.
 - iv. The two samples for test C5 resulted in the same log inactivation and delivered dose.
 - v. The two samples for test C5 resulted in a Lower 75% CI that is higher than the delivered dose - opposite to what is expected and confirmed in the other tests.
 - vi. The two samples for test C6 also resulted in the same log inactivation and delivered dose.
- e. To address the uncertainties of the C1-C7 tests, an additional dose response correction factor of 0.95 should be incorporated in the District's site-specific UV dose equation for the Lancaster Trojan UV3000Plus.

DISTRICT'S LANCASTER PERMIT FOR TROJAN 3000PLUS

- 5. **The following recommendations should be incorporated into the final permit for the UV system.** Approval for the use of any and all water recycling applications is granted through the Regional Water Quality Control Board's Water Reclamation permitting process.
 - a. Since the LWWTP uses a membrane filter, the UV system must be operated to deliver a minimum UV dose of 80 mJ/cm^2 at all times.

- b. A modification of the District proposed unique, site-specific UV dose equation for the Lancaster Trojan UV3000Plus is to be used as part of the automatic UV disinfection control system for calculating UV dose and should be specified as a permit provision. This equation was developed based on the on-site bioassay. In order to correct for uncertainties of the dose response curve during the on-site tests, an additional uncertainty correction factor of 0.95 should be incorporated in the District's site-specific UV dose equation for the Lancaster Trojan UV3000Plus.

The equations to be used as part of the automatic UV disinfection control system for calculating UV dose should be specified as a permit provision. They are:

$$\text{Dose} = (U_{DR}) * (FF) * (LHF) * 10^{-6.3547 - 0.98208 * \log \text{Flow} + 4.0824 * \log \text{UVT} + 1.0396 * \log P}$$

and

$$\text{LHF} = \text{lamp hour factor} = 1 - [\text{operational lamp hours} * (1 - \text{EOLL}) / 9,000]$$

Where:

Dose = Delivered UV dose per bank (mJ/cm²);

U_{DR} = Uncertainty of dose response curve = 0.95;

FF = Fouling Factor = 0.95;

UVT = % UV transmittance at 254 nm (%);

Flow = Flow rate per lamp [gallons per minute (gpm)/lamp], with gpm/lamp calculated as gpm divided by the number of lamps in one bank;

EOLL = End of Lamp Life = 0.98 at 9000 hours; and

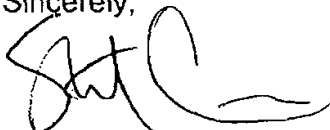
P = percent power.

- c. The Trojan 3000plus low-pressure high-output (LPHO) UV disinfection system reactor is limited to the following operational parameter ranges:
- i. Permit flow up to 1.0 MGD (694 gpm).
 - ii. Minimum UVT = 64%.

- iii. Minimum one of the four banks in redundant standby mode. If during short-term, unexpected conditions the UVT is less than 64 percent, the redundant bank would need to be utilized in order to maintain the required 80-mJ/cm² dose, otherwise, the flow must be diverted.
 - iv. The water level in the Trojan reactor is maintained below the maximum value of 17 inches.
- d. Flow meters and UVT monitors must be properly calibrated to ensure proper disinfection.
 - e. UVT meter must be inspected and checked against a reference bench-top unit weekly to document accuracy.
 - f. If the on-line analyzer UVT reading varies from the bench-top spectrophotometer UVT reading by 2% or more, the on-line UVT analyzer must be recalibrated by a procedure recommended by the manufacturer.
 - g. Flow meters measuring the flow through a UV reactor must be verified to determine accuracy at least monthly via checking the flow reading against other flow determination methods.
 - h. The Trojan 3000Plus system has an automated mechanical wiping mechanism to reduce sleeve fouling. A minimum frequency of wiping should be developed specific to the District's Lancaster UV system. This should then be correlated to the proposed 0.95 fouling factor, which is incorporated into the UV dose equation above.
 - i. The facility should be operated in accordance with an approved operations plan, which specifies clearly the operational limits and responses required for critical alarms.

If you have questions regarding this letter, please contact Mr. Chi Diep at (213) 580-5727 or myself at (213) 580-3127.

Sincerely,



Stefan Cajina, P.E.
District Engineer
Central District

Mr. Mike Plaziak
April 15, 2009
Page 6

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Mr. Mike Plaziak
April 15, 2009
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