California Regional Water Quality Control Board
Santa Ana Region

January 18, 2006

STAFF REPORT

ITEM: **10**

SUBJECT: Order No. R8-2006-0008, Amending Order No. 98-54, Waste Discharge Requirements for the City of Redlands' Wastewater Treatment Plant, Redlands, San Bernardino County

I. DISCUSSION:

The City of Redlands (hereinafter Discharger) is currently discharging pursuant to Order No. 98-54, which was adopted by the Regional Board on April 17, 1998. On December 15, 2004, the Discharger submitted a Report of Waste Discharge and applied for revision of the waste discharge requirements to reflect upgraded treatment facilities, to authorize the delivery of up to 6 million gallons per day (mgd) of tertiary treated recycled water to the nearby Mountain View Power Plant and to discharge 3.5 mgd of secondary treated wastewater into eight percolation ponds from its treatment plant, hereinafter Facility. The permit application was deemed incomplete and the Discharger was required to conduct studies in accordance with the antidegradation policy of the State to evaluate the TDS and nitrogen impacts of discharges from the Facility on groundwater in the area. The antidegradation study has not yet been completed.

Once the antidegradation study is complete, Order No. 98-54 will be revised in accordance with the new nitrogen and TDS management provisions of the Basin Plan. However, in the interim, amendment of the Order is necessary to include recycling requirements. The City of Redlands has entered into contractual agreements with Southern California Edison (owner of Mountain View Power Plant) that require delivery of recycled water to the Plant by early December for system testing and cooling purposes. Wastewater from the Plant is discharged to the Santa Ana Regional Interceptor (SARI) line and ultimately the Pacific Ocean. Discharges from the Plant will not affect surface or groundwater in the area. Therefore, completion of the antidegradation study is not a prerequisite to amendment of the Order to include recycling requirements.

The existing secondary treatment facility treats about 6.7 mgd (9.5 mgd design capacity) of domestic, commercial, and industrial wastewater. The treatment system consists of preliminary treatment (screening, grit removal, and primary settling), secondary treatment (trickling filters, activated sludge basins, and secondary clarifiers), solids handling, and chlorination. The secondary effluent is then discharged to eight percolation ponds located on 36 acres about half a mile from the facility and adjacent to the Alabama Street Landfill and the Santa Ana River. The ponds are operated on an alternating fill and dry basis.

The discharger upgraded its existing facility to provide disinfected tertiary treated water to the nearby Mountain View Power Plant for cooling purposes. The upgrade consisted of a membrane bioreactor (MBR) and a chlorine contact tank and is designed for an average daily flow of 6 mgd, with a peak flow of 6.6 mgd. The tertiary treatment train started operation in December 2005. The excess secondary treated wastewater that cannot be tertiary treated will be discharged to the existing eight percolation ponds.

It is appropriate to amend Order No. 98-54 to add recycling requirements to allow the Discharger to produce tertiary treated and disinfected wastewater for recycling use.

The following changes to the Order are proposed: (additions are boldface).

1. Order No. 98-54, Page 3 of 15, renumber Finding No. 17 to 18, change subsequent Finding numbers accordingly, and add new Finding 17 as follows:

   17. On January 6, 1977, the State Board adopted a water reclamation policy regarding the issuance of wastewater reclamation requirements to primary users of reclaimed water. This Order incorporates requirements for the production and use of reclaimed water in conformance with the "Policy and Action Plan for Water Reclamation in California" adopted by the State Board and "Reclamation Criteria" (Title 22 Division 4 California Code of Regulations) adopted by the California Department of Health Services. The Regional Board has consulted with the Department of Health Services regarding these requirements and has incorporated its recommendations.

2. Order No. 98-54, Page 5 of 15, add new Discharge Specifications A.5., as follows:

   5. Tertiary recycled water shall at all times, be adequately oxidized, filtered, and disinfected tertiary treated wastewater and shall meet the following limitations:

      a. The turbidity of the filter effluent shall not exceed any of the following:

         (1) 0.2 Nephelometric Turbidity Unit (NTU) more than 5 percent of the time within any 24-hour period;

         (2) 0.5 NTU at any time.

      b. The 7-day median number of total coliform shall not exceed a Most Probable Number (MPN) of 2.2 total coliform bacteria per 100 milliliters (ml).

      c. The number of total coliform organism shall not exceed an MPN of 23 total coliform bacteria per 100 ml in more than one sample in any 30-day period.

d. No total coliform sample shall exceed an MPN of 240 total coliform bacteria per 100 ml.

3. Order No. 98-54, Page 9 of 15, add new Compliance Determination E.9., as follows:

9. **Compliance with the 7-day median total coliform limit expressed in Discharge Specification A.5.b. shall be based on a running median of the test results from the previous 7 days. To comply with the limit, the 7-day median MPN must not exceed 2.2 per 100 milliliters on any day during the week. However, only one violation is recorded for each calendar week, even if the 7-day median MPN value is greater than 2.2 for more than one day in the week.**

4. Order No. 98-54, Page 8 of 15, re-letter Section E to D, change subsequent Section lettering accordingly, and add new Section E - Recycled Water Requirements as follows:

E. RECYCLED WATER REQUIREMENTS:

1. The use of recycled water shall only commence after the California Department of Health Services (CDHS) grants final approval for such use. The Discharger shall provide the Regional Board with a copy of the CDHS approval letter within 30 days of the approval notice.

2. The Discharger shall be responsible for assuring that recycled water is delivered and utilized in conformance with this Order, the recycling criteria contained in Title 22, Division 4, Chapter 3, Sections 60301 through 60355, California Code of Regulations, and the "Guidelines for Use of Reclaimed Water" by the California Department of Health Services. The discharger shall conduct periodic inspections of the facilities of the recycled water users to monitor compliance by the users with this Order.

3. The Discharger shall establish and enforce Rules and 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 recycling criteria established pursuant to the California Water Code Section 13521.

a. Use of recycled water by the discharger shall be consistent with its Rules and Regulations for Recycled Water Use.

b. Any revisions made to the Rules and Regulations shall be subject to the review of the Regional Board, the California Department of Health Services, and the County of San Bernardino Department of Environmental Health. The revised Rules and Regulations or a letter certifying that the discharger's

Rules and Regulations contain the updated provisions in this Order, shall be submitted to the Regional Board within 60 days of adoption of this Order by the Regional Board.

4. **The Discharger shall, within 60 days of the adoption of this Order, review and update as necessary its program to conduct compliance inspections of recycled water reuse sites. Inspections shall determine the status of compliance with the discharger's Rules and Regulations for Recycled Water Use.**

5. **The storage, delivery, or use of recycled water shall not individually or collectively, directly or indirectly, result in a pollution or nuisance, or adversely affect water quality, as defined in the California Water Code**

6. **Prior to delivering recycled water to any new individual residential user, small commercial, or construction project users, the discharger shall obtain items a. through f. listed below for review and approval by the discharger's supervisor responsible for the operation of the recycled water distribution system. For all other new users, the discharger shall submit to the California Department of Health Services for review and approval a report containing items a. through f. listed below:**

   a. **The average number of persons estimated to be served at each use site area on a daily basis.**
   b. **The specific boundaries of the proposed use site area including a map showing the location of each facility, drinking water fountain, and impoundment to be used.**
   c. **The person or persons responsible for operation of the recycled water system at each use area.**
   d. **The specific use to be made of the recycled water at each use area.**
   e. **The methods to be used to assure that the installation and operation of the recycled system will not result in cross connections between the recycled water and potable water piping systems. This shall include a description of the pressure, dye or other test methods to be used to test the system.**
   f. **Plans and specifications which include following:**
      i. **Proposed piping system to be used.**
      ii. **Pipe locations of both the recycled and potable systems.**
      iii. **Type and location of the outlets and plumbing fixtures that will be accessible to the public.**
      iv. **The methods and devices to be used to prevent backflow of recycled water into the potable water system.**
      v. **Plan notes relating to specific installation and use requirements.**

7. The user shall designate an on-site supervisor responsible for the operation of the recycled water distribution system. The supervisor shall be responsible for enforcing this Order, prevention of potential hazards, the installation, operation and maintenance of the distribution system, maintenance of the distribution and irrigation system plans in "as-built" form, and for the distribution of the recycled wastewater in accordance with this Order.

5. Monitoring and Reporting Program No. 98-54, Page 5 of 11, add new Effluent Monitoring C.3. and new footnotes 3 and 4 as follows and change existing footnote number 3 and 4 into 5 and 6 on page 6 of 11:

3. In addition to the effluent monitoring program in C.2., above, the following shall be monitored whenever tertiary treated effluent is used for recycling purposes:

EFFLUENT MONITORING			
CONSTITUENT	**UNITS**	**TYPE OF SAMPLE**	**MINIMUM FREQUENCY OF SAMPLING AND TESTING**
Turbidity **Four-hour Results** **Daily Average** **Daily 95th Percentile**	**NTU[1]**	**Recorder/continuous turbidimeter**	**See Note (1) below**
Coliform Organisms	**MPN per 100 ml[2]**	**Grab**	**Daily (see Note (2) below)**
Contact Time (CT)	**mg-minutes/L**	**See Note (3) below**	**See Note (3) below**

Notes:

(1) Turbidity analysis shall be continuous, performed by a continuous recording turbidimeter. Compliance with the daily average operating filter effluent turbidity shall be determined by averaging the levels of recorded turbidity taken at a minimum of four-hour intervals over a 24-hour period. The results of the daily average turbidity determinations shall be reported monthly.

(2) Samples shall be taken from disinfected effluent.

(3) CT shall be calculated based on one-hour peak flow within a 24-hour period and corresponding chlorine residual at that time. Modal contact time shall be calculated based on one-hour peak flow within a 24-hour period. The minimum daily value shall be reported monthly.

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1 NTU = Nephelometric Turbidity Units

2 MPN/100mL = Most Probable Number per 100 milliliters

6. Monitoring and Reporting Program No. 98-54, Page 8 of 11, re-letter Section E to D, change subsequent Section lettering accordingly, and add new Section E - Recycled Water Monitoring Requirements as follows:

E. RECYCLED WATER MONITORING REQUIREMENTS:

Whenever recycled water is supplied to a user, the volume and type of recycled water, the user of recycled water, the locations of those sites including the names of the groundwater management zone underlying the recycled water use sites, type of use (e.g. irrigation, industrial, etc) and the dates at which water is supplied shall be recorded. A summary report of water use by groundwater management zones shall be submitted quarterly. This report shall be included in the annual report.

II. WRITTEN COMMENTS:

Interested persons are invited to submit written comments on the proposed amendments. Comments should be submitted by January 2, 2006, either in person or by mail to:

J. Shami
California Regional Water Quality Control Board
Santa Ana Region
3737 Main Street, Suite 500
Riverside, CA 92501-3348

III. INFORMATION AND COPYING:

Persons wishing further information may write to the above address or call J. Shami of the Regional Board at (951) 782-3288. Copies of the application, proposed waste discharge requirements, Staff Report, and other documents (other than those which the Executive Officer maintains as confidential) are available at the Regional Board office for inspection and copying between the hours of 9:00 a.m. and 3:00 p.m., Monday through Friday (excluding holidays).

IV. REGISTER OF INTERESTED PERSONS:

Any person interested in a particular application or group of applications may leave his/her name, address, and phone number as part of the file for an application.

V. PUBLIC HEARING:

The Regional Board will hold a public hearing regarding the proposed waste discharge requirements as follows:

DATE:	January 18, 2006
TIME:	9:00 a.m.
PLACE:	City Council Chambers of Loma Linda 25541 Barton Road Loma Linda

RECOMMENDATION:

Adopt Order No. R8-2006-0008, amending Order No. 98-54, as presented.

Comments were solicited from the following agencies:

U.S. Army District, Los Angeles, Corps of Engineers, Regulatory Branch
U.S. Fish and Wildlife Service – Carlsbad
State Water Resources Control Board, Office of the Chief Counsel – Jorge Leon
State Water Resources Control Board, Division of Water Quality – Jim Maughan
California Department of Health Services, Carpenteria – Jeff Stone
California Department of Health Services, San Bernardino – Sean McCarthy
State Department of Water Resources - Glendale
State Department of Fish and Game – Long Beach
Orange County Water District – Nira Yamachika
San Bernardino County Department of Environmental Health Services – Daniel Avera
San Bernardino County Flood Control Department – Naresh Varma
Santa Ana Watershed Project Authority – Daniel Cozad

California Regional Water Quality Control Board
Santa Ana Region

ORDER NO. R8-2006-0008

Amending Order No. 98-54
Waste Discharge Requirements
for the
City of Redlands
Wastewater Treatment Plant
San Bernardino County

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

1. On April 17, 1998, the Board adopted Order No. 98-54, waste discharge requirements for the discharge of 9.5 million gallons a day of secondary treated wastewater from the City of Redland's Wastewater Treatment Plant to eight percolation ponds under conditions of alternating fill and dry cycles.

2. The discharger is proposing to deliver 6 million gallons per day (mgd) of disinfected tertiary treated water to the nearby Mountain View Power Plant for cooling purposes. Consequently, the Discharger upgraded its existing facility by constructing a tertiary treatment train. The upgrade consisted of a membrane bioreactor (MBR) and a chlorine contact tank designed for an average daily flow of 6 mgd with a peak flow of 6.6 mgd.

3. On December 15, 2004, the Discharger submitted a Report of Waste Discharge, and applied for revision of the waste discharge requirements in Order No. 98-54 to reflect upgraded treatment facilities, to authorize the delivery of up to 6 million gallons per day (mgd) of tertiary treated recycled water to the nearby Mountain View Power Plant and to discharge 3.5 mgd of secondary treated wastewater into eight percolation ponds from its treatment plant.

4. The existing waste discharge requirements are currently under review and until required antidegradation studies are completed and submitted by the Discharger, modification of the waste discharge requirements cannot be completed. However, to facilitate delivery of tertiary treated and disinfected recycled water to the Mountain View Power Plant, it is necessary to amend Order No. 98-54 to include recycling requirements for the production and use of recycled water.

5. On July 10, 2001, the City of Redland Planning Commission approved a mitigated negative declaration for the establishment of a recycled water treatment facility in compliance with Section 21152 of the Public Resources Code.

6. The project involves the update of waste discharge requirements for an existing facility and, as such, is exempt from the California Environmental Quality Act (Public Resources Code, Section 21100 et. seq.) in accordance with Section 15301, Chapter 3, Title 14, California Code of Regulations.

TENTATIVE

7. The Board has notified the dischargers and other interested agencies and persons of its intent to amend Order No. 98-54 and has provided them with an opportunity to submit their written views and recommendations.

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

IT IS HEREBY ORDERED that Order No. 98-54 shall be amended as follows:

1. Order No. 98-54, Page 3 of 15, renumber Finding No. 17 to 18, change subsequent Finding numbers accordingly, and add new Finding 17 as follows:

   17. On January 6, 1977, the State Board adopted a water reclamation policy regarding the issuance of wastewater reclamation requirements to primary users of reclaimed water. This Order incorporates requirements for the production and use of reclaimed water in conformance with the "Policy and Action Plan for Water Reclamation in California" adopted by the State Board and "Reclamation Criteria" (Title 22 Division 4 California Code of Regulations) adopted by the California Department of Health Services. The Regional Board has consulted with the Department of Health Services regarding these requirements and has incorporated its recommendations.

2. Order No. 98-54, Page 5 of 15, add new Discharge Specifications A.5., as follows:

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   c. The person or persons responsible for operation of the recycled water system at each use area.
   d. The specific use to be made of the recycled water at each use area.
   e. The methods to be used to assure that the installation and operation of the recycled system will not result in cross connections between the recycled water and potable water piping systems. This shall include a description of the pressure, dye or other test methods to be used to test the system.
   f. Plans and specifications which include following:
      i. Proposed piping system to be used.
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CONSTITUENT	UNITS	TYPE OF SAMPLE	MINIMUM FREQUENCY OF SAMPLING AND TESTING
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Notes:

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E. Recycled Water Monitoring Requirements:

Whenever recycled water is supplied to a user, the volume and type of recycled water, the user of recycled water, the locations of those sites including the names of the groundwater management zone underlying the recycled water use sites, type of use (e.g. irrigation, industrial, etc) and the dates at which water is supplied shall be recorded. A summary report of water use by groundwater management zones shall be submitted quarterly. This report shall be included in the annual report.

7. All other conditions and requirements of Order No. 98-54 shall remain unchanged.

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3 NTU = Nephelometric Turbidity Units

4 MPN/100mL = Most Probable Number per 100 milliliters

I, Gerard J. Thibeault, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an order adopted by the California Regional Water Quality Control Board, Santa Ana Region, on January 18, 2006.

Gerard J. Thibeault
Executive Officer