

**State of California
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION**

**MONITORING AND REPORTING PROGRAM NO. 6183
(File No. 68-085)
FOR
WASTE DISCHARGE REQUIREMENTS OF TITLE 22 RECYCLED WATER**

ISSUED TO

**CITY OF LOS ANGELES
(Los Angeles-Glendale Water Reclamation Plant)**

The City of Los Angeles (City) shall implement this monitoring and reporting program on the effective date of this Order.

I. SUBMITTAL OF REPORTS

1. The City shall submit the required reports, outlined in the following paragraphs, to the California Regional Water Quality Control Board, Los Angeles Region (Regional Board), and to the California Department of Health Services, Drinking Water Field Operations, Los Angeles Region (DHS). The reports shall be received at the Regional Board and the DHS on the dates indicated as follows:
 - A. **Quarterly Monitoring Reports** shall be received at the Regional Board by the 15th day of the second month following the end of each quarterly monitoring period according to Table M1. The first Quarterly Monitoring Report under this program shall be received at the Regional Board and the DHS by May 15, 2007, covering the monitoring period from January 1 to March 31, 2007.

Table M1 Quarterly Report Periods and Due Dates	
Reporting Period	Report Due
January – March	May 15 th
April – June	August 15 th
July – September	November 15 th
October – December	February 15 th

- B. **Annual Summary Report** shall be received at the Regional Board and the DHS by April 15th of each year. The first Annual Summary Report under this program shall be received at the Regional Board and the DHS by April 15, 2008, covering the monitoring periods from January 2007 to December 2007.
2. All monitoring and annual summary reports must be addressed to the Regional Board, Attention: Information Technology Unit. Reference the reports to Compliance File No. CI-6183 to facilitate routing to the appropriate staff and file.
3. The monitoring data shall be submitted to the Regional Board and to the DHS on hard copy, and on either a 3 1/2" computer diskette or a CD-ROM disk. The

Regional Board and to the DHS may request electronic submittal of data contained in a CD-ROM disk or other appropriate electronic medium at any time. The submittal data must be IBM compatible, preferably using Microsoft Excel software.

4. The Regional Board and the State Water Resources Control Board (State Board) are developing a database compliance monitoring management system that may require the City to submit the monitoring reports electronically, when it becomes operational. (Note that DHS requires groundwater monitoring to be submitted to DHS by the Electronic Data Transfer, which is available in the DHS' website at <http://www.dhs.ca.gov/ps/ddwem/EDT/default.htm>. The draft regulations state: "Analytical results for chemicals shall be reported directly to the Department, as follows:
 - A. Analytical results of all analyses completed in a calendar month shall be reported to the Department no later than the 15th day following the end of the second month of the designated monitoring period.
 - B. Analytical results shall be reported to the DHS electronically using the Electronic Deliverable Format as defined in The Electronic Deliverable Format (EDF) Version 1.2i Guidelines & Restrictions dated April 2001 and Data Dictionary dated April 2001."

The City should request PSCodes from the DHS so the data can be entered by the laboratories in the DHS' database.

II. MONITORING REQUIREMENTS

1. Whenever possible, quarterly monitoring shall be performed during the 1st quarter (January, February, and March), the 2nd quarter (April, May, and June), the 3rd quarter (July, August, and September), and the 4th quarter (October, November, and December); and annual monitoring shall be conducted during the third quarter of each calendar year. However, if the use of recycled water does not occur during that monitoring period, the City shall collect a sample during the next reuse event. Results of quarterly and annual analyses shall be reported in the following quarterly monitoring report. If there is no use of recycled water during the reporting period, the report shall so state. Monitoring reports shall continue to be submitted to the Regional Board, regardless of whether or not there was a use of recycled water.
2. Monitoring shall be used to determine compliance with the requirements of this Order and shall include, but not limited to, the following:
 - A. Locations of each groundwater monitoring station where representative samples can be obtained and the rationale for the selection. The City must include a map, at a scale of 1 inch equals 1,200 feet or less, that clearly identifies the locations of all monitoring wells, and production wells.
 - B. Sampling protocols (specified in 40 CFR Part 136 or AWWA standards where appropriate) and chain of custody procedures.

- C. For groundwater monitoring, outline the methods and procedures to be used for measuring water levels; purging wells; collecting samples; decontaminating equipment; containing, preserving, and shipping samples, and maintaining appropriate documentation. Also include the procedures for handling, storing, testing, and disposing of purge and decontamination waters generated from the sampling events.
 - D. Laboratory or laboratories, which conducted the analyses. Include copy or copies of laboratory certifications by the California Health Services Environmental Laboratory Accreditation Program (ELAP) every year or when the City changes their contract laboratory.
 - E. Analytical test methods used and the corresponding detection limits for reporting purposes (DLRs) unregulated and regulated chemicals. Please see the DHS' website at <http://www.dhs.ca.gov/ps/ddwem/chemicals/unregulated/index.htm> and <http://www.dhs.ca.gov/ps/ddwem/chemicals/DLR/dlrintex.htm> for unregulated and regulated chemicals, respectively.
 - F. Quality assurance and control measures.
3. The samples shall be analyzed using analytical methods described in 40 CFR Part 136; or where no methods are specified for a given pollutant, by commercially available methods approved by the DHS, Regional Board and/or State Board. The City shall select the analytical methods that provide reporting detection limits (DLRs) lower than the limits prescribed in this Order. For those constituents that have drinking water notification levels (NLs) and/or public health goals (PHGs), the DLRs shall be equal to or lower than either the NLs or the PHGs (note this is not always feasible). Every effort should be made to analyze Chemicals with NLs in Attachment A-6 using the least DLR possible.
4. The City shall instruct its laboratories to establish calibration standards so that the DLRs (or its equivalent if there is a different treatment of samples relative to calibration standards) are the lowest calibration standard. At no time shall the City use analytical data derived from extrapolation beyond the lowest point of the calibration curve.
5. Upon request by the City, the Regional Board, in consultation with the DHS and the State Board Quality Assurance Program, may establish DLRs, in any of the following situations:
- A. When the pollutant has no established method under 40 CFR 136 (revised May 14, 1999, or subsequent revision);
 - B. When the method under 40 CFR 136 for the pollutant has a RDL higher than the limit specified in this Order; or
 - C. When the Project Sponsors agree to use a test method that is more sensitive than those specified in 40 CFR Part 136 and is commercially available.

6. Samples of tertiary treated and disinfected effluent must be analyzed within allowable holding time limits as specified in 40 CFR Part 136.3. All QA/QC analyses must be run on the same dates when samples were actually analyzed. The City shall make available for inspection and/or submit the QA/QC documentation upon request by Regional Board staff. Proper chain of custody procedures must be followed and a copy of that documentation shall be submitted with the quarterly report.
7. For unregulated chemical analyses, the City should select methods according to the following approach:
 - A. Use drinking water methods, if available;
 - B. Use DHS-recommended methods for unregulated chemicals, if available;
 - C. If there is no DHS-recommended drinking water method for a chemical, and more than a single EPA-approved method is available, use the most sensitive of the EPA-approved methods;
 - D. If there is no EPA-approved method for a chemical, and more than one method is available from the scientific literature and commercial laboratory, after consultation with DHS, use the most sensitive method;
 - E. If no approved method is available for a specific chemical, the City's laboratory may develop or use its own methods and should provide the analytical methods to DHS for review. Those methods may be used until DHS recommended or EPA-approved methods are available.
 - F. If the only method available for a chemical is for wastewater analysis (e.g., a chemical listed as a priority pollutant only), sample and analyze for that chemical in the tertiary treated and disinfected effluent immediately to increase the likelihood of detection. Use this approach until the City's laboratory develops a method for the chemical in drinking water, or until a DHS-recommended or EPA-approved drinking water method is available.
 - G. The City is required to inform the Regional Board, in event that D, E, F is occurring.

III. REPORTING REQUIREMENTS

The City shall submit all reports, shown on Section I SUBMITTAL OF REPORTS to the Regional Board and the DHS by the dates indicated. All quarterly and annual monitoring reports should contain a separate section titled "Summary of Non-Compliance", which discusses the compliance records and corrective actions taken or planned that may be needed to bring the reuse into full compliance with water recycling requirements. This section shall clearly list all non-compliance with water recycling requirements, as well as all excursions of effluent limitations.

1. Quarterly Reports

- A. These reports shall include, at a minimum, the following information:
 - a. The volume of the tertiary-treated effluent used for recycled water. If no recycled water is used during the quarter, the report shall so state.
 - b. The date and time of sampling and analyses.
 - c. All analytical results of samples collected during the monitoring period of the tertiary-treated effluent and groundwater.
 - d. Records of any operational problems, plant upset and equipment breakdowns or malfunctions, and any discharge(s) of the tertiary-treated effluent used for recycled water.
 - e. Discussion of compliance, noncompliance, or violation of requirements.
 - f. All corrective or preventive action(s) taken or planned with schedule of implementation, if any.
- B. For the purpose of reporting compliance with numerical limitations, analytical data shall be reported using the following reporting protocols:
 - a. Sample results greater than or equal to the DLR must be reported “as measured” by the laboratory (i.e., the measured chemical concentration in the sample); or
 - b. Sample results less than the DLR, but greater than or equal to the laboratory’s method detection limit (MDL), must be reported as “Detected, but Not Quantified”, or DNQ. The laboratory must write the estimated chemical concentration of the sample next to DNQ as well as the words “Estimated Concentration” (may be shortened to Est. Conc.); or
 - c. Sample results less than the laboratory’s MDL must be reported as “Not-Detected”, or ND.
- C. If the City samples and performs analyses (other than for process/operational control, startup, research, or equipment testing) on any sample more frequently than required in this MRP using approved analytical methods, the results of those analyses shall be included in the report. These results shall be reflected in the calculation of the average used in demonstrating compliance with average effluent, receiving water, etc., limitations.
- D. The Regional Board may request supporting documentation, such as daily logs of operations.

2. Annual Reports

- A. Tabular and graphical summaries of the monitoring data (tertiary-treated effluent used for recycled water and ground water) obtained during the previous calendar year.
- B. Discussion of the compliance record and corrective or preventive action(s) taken or planned that may be needed to bring the tertiary-treated effluent used for recycled water into full compliance with the requirements in this Order.
- C. An in-depth discussion of the results of the groundwater monitoring and tertiary-treated effluent monitoring programs conducted during the previous year includes:
 - a. All chloride and total dissolved solids monitoring data collected from the Los Angeles-Glendale WRP tertiary treated and disinfected effluent, and the three monitoring wells described in Section V, Groundwater Monitoring. The report shall also analyze the observed data in conjunction with imported potable water concentrations. The data shall be presented in both tabular form and plotted graphically. The report shall include a calculation of the 5-year running average of chemical constituent(s) at each well, analysis of any trends, and identification of any correlation between imported water supplies, hydrologic conditions, and plant effluent.
 - b. Title 22 drinking water quality data for the nearest downgradient domestic water supply.
 - c. Thorough mass balance analysis of chloride and TDS.

Based on annual report findings, staff will present an update of the Board if chloride and TDS levels are increasing.

- D. The description of any changes and anticipated changes including any impacts in operation of any unit processes or facilities shall be provided.
- E. A list of the analytical methods employed for each test and associated laboratory quality assurance/quality control procedures shall be included. The report shall restate, for the record, the laboratories used by the City to monitor compliance with this Order, their status of certification, and provide a summary of performance.
- F. The report shall confirm operator certification and provide a list of current operating personnel, their responsibilities, and their corresponding grade of certification.

- G. The report shall also include the date of the facility's Operation and Maintenance Management Plan, the date the plan was last reviewed, and whether the plan is complete and valid for the current facilities.
- H. The groundwater monitoring portion of the annual report shall be prepared under the direction of an engineer registered in the State of California, or a certified hydrogeologist in California, and experienced in the field of recycled water practices.
Each annual monitoring report shall contain a separate section titled "Exceedance of MCL Triggers" which discusses the exceedance of MCLs for constituents of concern. The following information should also be provided:
 - a. A list of the constituent(s) that triggered attenuation study;
 - b. The Drinking Water Standard that was exceeded for each given constituent;
 - c. The concentration of constituent(s);
 - d. The test method used to analyze the sample; and,
 - e. The date and time of sample collection.

3. **Work Plan of Site-Specific Attenuation Analysis**

Should effluent concentration(s) exceed either the most current applicable Maximum Contaminant Levels (MCLs) for drinking water established by the DHS (Attachments A-1 to A-5) or/and Chemicals with NLs (Attachment A-6), in accordance with MRP Section V.2., the City shall conduct a site-specific attenuation analysis within 180 days since the exceedances occurred. The Work Plan must be submitted to the Regional Board for Executive Officer approval within 120 days after an average annual exceedance of the trigger.

IV. EFFLUENT WATER MONITORING

The sampling station shall be established where representative samples of LAG WRP tertiary treated and disinfected effluent (effluent) water can be obtained. Tertiary-treated effluent samples shall be obtained from the effluent channel downstream of the chlorine contact basin. Should there be any change in the sampling station, the proposed station shall be approved by the Executive Officer prior to its use. Table M2 shall constitute the Title 22 effluent monitoring program:

Table M2 – Tertiary Treated and Disinfected Effluent Monitoring			
Constituent	Units	Type of Sample	Minimum Frequency of Analysis
Total recycled water flow	mgd	---	continuous ¹
pH	pH units	grab ²	daily
Settleable solids	mL/L	grab ²	daily
Suspended solids	mg/L	24-hr comp.	weekly
BOD ₅ 20°C	mg/L	24-hr comp.	weekly
Oil and grease	mg/L	grab ²	monthly
Total dissolved solids	mg/L	24-hr comp.	monthly
Chloride	mg/L	24-hr comp.	monthly
Boron	mg/L	24-hr comp.	monthly
Sulfate	mg/L	24-hr comp.	monthly
MBAS	mg/L	24-hr comp.	monthly
Nitrate-N	mg/L	24-hr comp.	quarterly
Nitrite-N	mg/L	24-hr comp.	quarterly
Nitrate-N + nitrite-N	mg/L	24-hr comp.	quarterly
Inorganic ³ with primary MCL	mg/L	24-hr comp/grab ²	quarterly
Constituents/parameters ⁴ with secondary MCL	--	24-hr comp	quarterly
Regulated organic chemicals ⁵	µg/L	24-hr comp./grab ²	quarterly

¹ For those constituents that are continuously monitored, the City shall report the monthly minimum and maximum, and daily average values.

² Grab sample is an individual sample collected in a short period of time not exceeding 15 minutes. Grab samples shall be collected during normal peak loading conditions for the parameter of interest, which may or may not be during hydraulic peaks. When an automatic composite sampler is not used, composite sampling shall be done as follows: If the duration of the discharge is equal to or less than 24 hours but greater than eight (8) hours, at least eight (8) flow-weighted samples shall be obtained during the discharge period and composited. For discharge duration of less than eight (8) hours, individual 'grab' sample may be substituted.

³ See Attachment A-1 for specific constituents to be monitored.

⁴ See Attachment A-5 for specific constituents to be monitored. Sampling frequency of MBAS is monthly.

⁵ See Attachment A-3 for specific constituents to be monitored. Grab samples shall be used for analyses of volatile organics and cyanide; composite samples shall be used for others.

Table M2 – Tertiary Treated and Disinfected Effluent Monitoring			
Constituent	Units	Type of Sample	Minimum Frequency of Analysis
Remaining priority pollutants ⁶	µg/L	24-hr comp./grab ²	quarterly
Disinfection byproduct ^{7, 8}	µg/L	24-hr comp./grab ²	quarterly
Radioactivity ⁹	pCi/L	24-hr comp.	annually
Chemicals with NLS ^{10, 11}	µg/L	24-hr comp./grab ²	semi-annually
Endocrine disrupting chemicals ^{10, 12}	µg/L	24-hr comp	every 5 years
Pharmaceuticals and other chemicals ^{10, 13}	µg/L	24 –hr comp	every 5 years

⁶ Attachment A-7 for specific constituents to be monitored. Grab samples shall be used for analyses of volatile organics and cyanide; composite samples shall be used for others.

⁷ See Attachment A-4 for specific constituents to be monitored. Grab samples shall be used for analyses of volatile organics and cyanide; composite samples shall be used for others.

⁸ There are no numeric limits for these constituents, no numeric limits are anticipated at this time, and analytical methods may not be widely available.

Monitoring for these constituents are viewed as a diligent way of assessing and verifying recycled water quality characteristics, which can be useful in addressing issues of public perception about the safety of recycled water. Further, should there be a positive finding, the Regional Board and the DHS can give the result due consideration as to whether it is of concern or not. Just what such consideration might entail would depend on the knowns and unknowns of these constituents, including its potential health effects at the given concentration, the source of the chemical, as well as possible means of better control to limit its presence, treatment strategies if necessary, and other appropriate actions.

⁹ See Attachment A-2 for specific constituents to be monitored.

¹⁰ Prior to the commencement of delivering recycled water, at least one grab sample of recycled water shall be collected and analyzed. The results for the initial recycled water quality analysis shall be submitted to the Regional Board and the DHS. After that, at least one grab sample of recycled water shall be collected and analyzed every five years.

¹¹ See Attachment A-6 for specific constituents to be monitored. Grab samples shall be used for analyses of volatile organics and cyanide; composite samples shall be used for others

¹² Endocrine disrupting chemicals include ethinyl estradiol, 17-B estradiol, estrone, bisphenol A, nonylphenol and nonylphenol polyethoxylate, octylphenol and octylphenol polyethoxylate, and polybrominated diphenyl ethers. The analytical methods for these chemicals shall be approved by the DHS.

¹³ Pharmaceuticals and other chemicals include acetaminopen, amoxicillin, azithromycin, caffeine, carbamazepine, ciprofloxacin, ethylenediamine tetra-acetic acid (EDTA), gemfibrozil, ibuprofen, iodinated contrast media, lipitor, methadone, morphine, salicylic acid, and triclosan. The analytical methods for these chemicals shall be approved by the DHS.

V. GROUNDWATER MONITORING

1. No Exceedance(s)

- A. If no effluent concentration(s) exceed the most current applicable Maximum Contaminant Levels (MCLs) for drinking water established by the DHS (Attachments A-1 to A-5) and Chemicals with NLs (Attachment A-6), the City shall conduct groundwater monitoring at the three monitoring wells listed in Table M4. The groundwater samples shall be analyzed for the following constituents listed in Table M3 below.

Table M3 – Groundwater Monitoring			
Constituent	Units	Type of Sample	Minimum Frequency of Analysis
Total dissolved solids	mg/L	grab	quarterly
Chloride	mg/L	grab	quarterly

Table M4 – Well Numbers and Locations	
PO-VPB-01	Located on Brunswick Avenue in the southern part of the Los Angeles River Narrows Area.
PO-VPB-03	Located on Garden Avenue in the southern part of the Los Angeles River Narrows Area.
Pollock Well No.6	Located on Perlita Avenue south of Fletcher Drive in the southern part of Los Angeles River Narrows Area.

If any of the above cannot be sampled, the City shall propose, subject to Executive Officer approval, an alternate well that shall be sampled. The City may propose an alternative to the groundwater monitoring network, including the use of existing wells, shallower monitoring wells, soil lysimeters, etc., subject to the Executive Officer’s approval.

B. Requirements For Chloride Assessment

Each well shall use a 5-year running average (most recent 5 years of chloride data) to track concentration changes over time. In the event that blending in groundwater is not occurring as anticipated, the following trigger is established for the assessment of chlorides in the groundwater. The trigger occurs when the 5-year running average chloride concentration for any of the above wells is higher than the initial average background concentration plus 50% of the difference between the initial average background concentration and the previous recycled water limit of 150 mg/l. Upon activating the trigger, the Los Angeles Department of Water and Power shall collect 5 additional monthly samples. If all of the 5 additional tests do not exceed the trigger, then the Los Angeles Department of Water and Power may return to a normal sampling

frequency. If one sample exceeds the trigger, then the additional monitoring will continue until 5 consecutive monthly samples are below the trigger. If two of any additional monthly samples exceed the trigger, then a meeting will be held between staff from the Regional Board and the City to assess the observed condition. This assessment will be based on the relative hydrologic conditions, imported water conditions, and other observed chloride trends to determine appropriate actions. These actions may range from additional data collection and analysis to modification of recycled water deliveries to irrigation customers.

2. Exceedance(s)

Assessment for MCLs and Chemicals with NLs

If annual averages of effluent concentrations exceed any MCLs or Chemicals with NLs, then groundwater monitoring will be initiated to track concentration changes over time. A 5-year running average (most recent five years of constituent[s] data) will be used to track concentration changes over time. The following trigger is established for the assessment of constituent(s): When the 5-year running average constituent(s) concentration for any of the above wells is higher than the background plus 50 percent of the difference between the initial average groundwater background concentration and the corresponding MCL(s) or/and Chemicals with NLs, the Los Angeles Department of Water and Power (DWP) shall collect five additional monthly samples. If all of the five additional tests do not exceed the trigger, then the DWP may return to normal sampling frequency. If one sample exceeds the trigger, then the additional monitoring will continue until five consecutive monthly samples are below the trigger. If two of any additional monthly samples exceed the trigger, then a meeting will be held between staff from the Regional Board, the DWP, and the Los Angeles Department of Public Works Bureau of Sanitation to assess the observed condition.

This assessment will be based on the relative hydrologic conditions, and other observed constituent(s) trends to determine appropriate actions. These actions may range from additional data collection and analysis to modification of recycled water deliveries to irrigation customers.

3. The results of groundwater monitoring shall be submitted with the recycled water monitoring reports.
4. Monitoring activities associated with these major use areas will be considered representative of irrigation use of LAG WRP effluent on the San Fernando Valley Groundwater Basin. For example, if recycled water is piped to the Los Angeles Coastal Plain Groundwater Basin for wide-spread irrigation use, then the Regional Board may require monitoring of additional wells located in that Basin

VI. GENERAL MONITORING AND REPORTING REQUIREMENTS

1. For every item where the requirements are not met, the City shall submit a statement of the actions undertaken or proposed which will bring the tertiary-treated and disinfected effluent used for the recycled water program into full compliance with requirements at the earliest possible time, and submit a timetable for implementation of the corrective measures.
2. Monitoring reports shall be signed by either the principal Executive Officer or ranking elected official. A duly authorized representative of the aforementioned signatories may sign documents if:
 - A. The authorization is made in writing by the signatory;
 - B. The authorization specifies the representative as either an individual or position having responsibility for the overall operation of the regulated facility or activity; and
 - C. The written authorization is submitted to the Executive Officer of this Regional Board.
3. The monitoring report shall contain the following completed declaration:

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

Executed on the ____ day of ____ at _____

Signature

Title

4. The City shall retain records of all monitoring information, including all calibration and maintenance, monitoring instrumentation, and copies of all reports required by this Order, for a period of at least three (3) years from the date of sampling measurement, or report. This period may be extended by request of the Regional Board or the DHS at any time and shall be extended during the course of any unresolved litigation regarding the regulated activity.
5. Records of monitoring information shall include:
 - A. The date, exact place, and time of sampling or measurements;
 - B. The individual(s) who performed the sampling or measurements;
 - C. The date(s) analyses were performed;

- D. The individual(s) who performed the analysis;
 - E. The analytical techniques or methods used; and
 - F. The results of such analyses.
6. The City shall submit to the Regional Board, together with the first monitoring report required by this Order, a list of all chemicals and proprietary additives which could affect the quality of the tertiary-treated and disinfected effluent used for recycled water, including quantities of each. Any subsequent changes in types and/or quantities shall be reported promptly. An annual summary of the quantities of all chemicals, listed by both trade and chemical names, which are used in the treatment process shall be included in the annual report.

Ordered by:



Jonathan S. Bishop
Executive Officer

Date: January 11, 2007

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