

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

**ORDER NO. R4-2008-0040**

**AMENDING WASTE DISCHARGE REQUIREMENTS  
FOR**

**(CITY OF LOS ANGELES)  
LOS ANGELES-GLENDALE WATER RECLAMATION PLANT  
ORDER NO. R4-2007-0006 (FILE NO. 68-085)**

**AND**

**(CITY OF LOS ANGELES)  
DONALD C. TILLMAN WATER RECLAMATION PLANT  
ORDER NO. R4-2007-0008 (FILE NO. 70-117)**

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

1. The following publicly owned treatment works (POTWs) reuse recycled water generated from their respective POTWs for the purposes of irrigation and surface impoundments and other industrial uses. The potential percolation of constituents that may be contained in recycled water to the underlying groundwater aquifer is regulated under the following Waste Discharge Requirements (WDRs):

WDR NO.	Discharge Location (Receiving Water)	Type of Waste (Flow)	File No. (Adoption Date)
Los Angeles-Glendale Water Reclamation Plant (Order No. R4-2007-0006)	Los Angeles-Glendale WRP 4600 Colorado Boulevard Los Angeles, CA  (Los Angeles River)	Tertiary-treated municipal wastewater  (20 million gallons per day)	File No. 68-085  (January 11, 2007)
Donald C. Tillman Water Reclamation Plant (Order No. R4-2007-0008)	Donald C. Tillman WRP 6100 Woodley Avenue Van Nuys, CA  (Los Angeles River)	Tertiary-treated municipal wastewater  (80 million gallons per day)	File No. 70-117  (January 11, 2007)

2. The aforementioned WDRs adopted on January 11, 2007, by this Regional Water Board, contain reopener language in section IV.2. that states:

*"The City of Los Angeles, Heal the Bay, and Regional Board staff will convene a workgroup to determine the best approach to addressing the competing issues associated with promoting water recycling and protecting groundwater in Los Angeles County. This order and the related Monitoring and Reporting Program shall be reopened by June 15, 2008. In the interim: (1) the groundwater monitoring requirements shall be stayed, (2) the permittee will not be required to design or construct additional wells to comply with the aforesaid monitoring requirements, and (3) the trigger mechanisms, set forth in section I. paragraph 5., shall be stayed."*

3. Stakeholder meetings were conducted on March 28, 2007, May 14, 2007, August 22, 2007, and November 6, 2007, to discuss these competing issues. The Stakeholder group was made up of participants much broader than Regional Water Board staff, the City, and Heal the Bay, and included representatives from water supply, the California Department of Public Health, other environmental groups, and other producers of recycled water. While positive discussions took place, meetings were halted while the State Water Resources Control Board developed its Water Recycling Policy. That Policy has not yet been adopted.
4. On April 21, 2008, the City of Los Angeles (City) and the Regional Water Board staff met to discuss the City's proposal to address the conditions specified in the above-mentioned reopener, considering many of the elements discussed at the Stakeholder meetings. The City submitted a Workplan entitled *Groundwater Monitoring of Chloride and TDS in the San Fernando Basin*. The Workplan also includes Gantt chart to track progress. The purpose of this Workplan is to implement an interim and long-term groundwater monitoring approach that monitors and protects the overall health of the San Fernando Groundwater Basin and supports the City's goal to increase water supply reliability by maximizing the use of recycled water. The Workplan and Gantt chart (collectively as Workplan is presented as Attachment 1) incorporated herein and made part of this Order.
5. The purpose of this Order is to amend section I.5. of the WDRs and sections III.2.c. and V.2. of the Monitoring and Reporting Programs of the aforementioned WDRs.

The Regional Water Board notified the Discharger and interested agencies and persons of its intent to adopt the amended waste discharge requirements.

The Regional Water Board, in a public hearing, heard and considered all testimony pertinent to this matter. All Orders referred to above, Regional Water Board files on this matter, and records of hearings and testimony therein are included in the administrative record for this matter.

**IT IS HEREBY ORDERED** that the following Orders, adopted by this Regional Water Board on January 11, 2007, are hereby amended as follows (additions are underlined, deletions are lined through):

A. Waste Discharge Requirements Section I.5. Pages 7-8 of Order R4-2007-0006 for the Los Angeles-Glendale WRP, and Pages 7-8 of Order R4-2007-0008 for the Donald C. Tillman WRP, shall read as follows:

5. Maximum Contaminant Levels (MCLs) and Notification Levels (NLs) Triggers (non-enforceable)

a. Trigger Mechanism

The effluent will be monitored for all constituents with current applicable MCLs for drinking water established by the Department of Health Services (DHS) included in the Attachments A-1, A-2, A-3, A-4, A-5, and A-6 (chemicals with NLs). If annual average of these constituents are exceeded (target chemicals), using the criteria established in section V.2. of the Monitoring and Reporting Program (MRP) ~~No. 6183~~, the City will perform accelerated groundwater monitoring for these target chemicals. The trigger for accelerated groundwater monitoring shall become effective December 15, 2008.

b. Attenuation Study

An attenuation study will be conducted for the target chemicals where MCLs are exceeded in accordance with Section V.2. of the MRP. The trigger for an attenuation study shall become effective December 15, 2008. If the attenuation study is triggered by a chemical that has Notification Level only, the requirement for conducting attenuation study shall be stayed until a Maximum Contaminant Level (MCL) has been developed for the target chemical. The study will be a minimum of two years or until sufficient data is established to calculate the appropriate attenuation factor, if warranted. The City is required to submit a Workplan acceptable to the Executive Officer, which details the proposed attenuation study within 120 days after an average annual exceedance of the trigger.

c. Calculated Numeric Effluent Limits

The derivation of end-of-pipe numeric effluent limits for the target chemicals will be determined based upon the MCL multiplied by the attenuation factor (AF) and brought back to the Regional Board for consideration at a future board meeting.

B. Monitoring and Reporting Program No. 6183 Section III.2.C. - Reporting Requirements, on Page T-6 of Order R2007-0006 for the Los Angeles-Glendale WRP, and Monitoring and Reporting Program No. 8371 Section III.2.C. - Reporting Requirements, on Page T-6 of Order R2007-0008 for the Donald C. Tillman WRP, shall read as follows:

C. An in-depth discussion of the results of the groundwater monitoring and tertiary-treated effluent monitoring programs conducted during the previous year: This in-depth discussion will be submitted annually until the deliverables specified in Attachment 1 are approved and includes:

- a. All chloride and total dissolved solids monitoring data collected from the WRP tertiary treated and disinfected effluent, and the 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 (including minerals) 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 to the Board if chloride and TDS levels are increasing.

C. Monitoring and Reporting Program No. 6183, Section V – Groundwater Monitoring, Pages T-10 and T-11 of Order R4-2007-0006 for the Los Angeles-Glendale WRP, and Monitoring and Reporting Program No. 8371, Pages T-9, T-10 and T-11 of Order R4-2007-0008 for the Donald C. Tillman WRP, shall read as follows:

#### V. GROUNDWATER MONITORING

##### 1. No Exceedance(s)

**(The proceeding section is applicable only to Order R4-2007-0006, Los Angeles Glendale WRP)**

- 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. Groundwater monitoring shall be initiated on December 15, 2008. The

groundwater samples shall be analyzed for the following constituents listed in Table M3 below.

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

<b>II. Table M4 – Well Numbers and Locations</b>	
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.

**(The proceeding section is applicable only to Order R4-2007-0008, Donald C. Tillman WRP)**

- 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 the groundwater monitoring for those constituents (in Table MM3) listed in the Basin Plan as well as at monitoring wells in Table MM4. Groundwater monitoring shall be initiated on December 15, 2008.

<b>III. Table MM3 – Groundwater Monitoring</b>			
<b>Constituent</b>	<b>Units</b>	<b>Type of Sample</b>	<b>Minimum Frequency of Analysis</b>
Total dissolved solids	mg/L	Grab	Quarterly
Chloride	mg/L	Grab	Quarterly

IV. Table MM4 – Well Numbers and Locations	
Well No. 1	Located on Oxnard Street approximately 500 feet from the east boundary of the Sepulveda Basin.
Well No. 2	Located on Oxnard Street approximately 1500 feet from the east boundary of the Sepulveda Basin.
Well EV-01	Located in the middle of the Hansen Spreading Grounds.
Well EV-03	Located on Branford St. approximately 200 feet from the South Boundary of the Hansen Golf Course.

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.

~~a. Well No. 1 and Well No. 2 located adjacent to the Sepulveda Basin, are proposed to be constructed. The City shall construct these new wells at the locations noted above near the Sepulveda Basin to monitor chemicals specified in Table MM5. The cost of constructing two monitoring wells based on City's estimate is approximately US\$800,000. The city will complete the construction and establish chloride background concentrations within one year of beginning recycled water deliveries to the Woodley Golf Course in the Sepulveda Basin.~~

**(The proceeding section is applicable to both Order R4-2007-0006 for Los Angeles Glendale WRP and Order R4-2007-0008 for Donald C. Tillman WRP)**

**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. If accelerated groundwater monitoring is necessary, monitoring shall be effective on December 15, 2008. 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. If accelerated groundwater monitoring is necessary, monitoring shall be effective on December 15, 2008.

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/DCT 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
- D. The Tasks and deliverables specified in Attachment 1, are incorporated herein and made part of this Order, and must be completed according to the time schedule specified by the Discharger. Extensions may be granted by the Executive Officer for just cause.

City of Los Angeles  
Los Angeles-Glendale Water Reclamation Plant  
Donald C. Tillman Water Reclamation Plant

- E. The Expiration date, and all other Limitations, Requirements, and Provisions of Order Nos. R4-2007-0006 and R4-2007-0008 are unchanged and shall remain in full force and effect.

**IT IS SO ORDERED.**

I, Tracy J. Egoscue, Executive Officer, do hereby certify that the foregoing is a full, true and correct copy of an order adopted by the California Regional Water Quality Control Board, Los Angeles Region, on July 10, 2008.

*David A. Bacharowski, AFO*  
*fw* Tracy J. Egoscue  
Executive Officer



**ATTACHMENT 1**  
**City of Los Angeles Proposal for Groundwater Monitoring  
of Chloride and TDS in the San Fernando Basin**

***Purpose/Objective***

To implement an interim and long-term groundwater monitoring approach that monitors and protects the overall health of the San Fernando Groundwater Basin and supports the City of Los Angeles' goal to increase water supply reliability by maximizing the use of recycled water.

***Proposed Interim Measures***

**1. Prepare summary of existing conditions**

(Estimated duration: 6 months, estimated completion: December 2008)

- A. Summarize and chart existing monitoring data for:
  - 1. DCT/LAG effluent concentrations for TDS and chloride (1998-Present)
  - 2. Potable source water: Los Angeles Aqueduct and State Water Project (1998-Present)
- B. Summarize existing groundwater monitoring data at LA River Narrows and Hansen Dam
- C. Summarize background salt characteristics and compare to DCT/LAG Basin Plan Objectives
- D. Prepare maps showing groundwater velocities by area and other relevant soil conditions
- E. Compile long-term recycled water plan for the Cities of Los Angeles and Glendale
- F. Meet with Regional Board staff to present existing conditions

**2. Establish Interim Groundwater Sampling & Analysis**

(Estimated duration: 6 months, estimated start of monitoring: December 2008)

- A. Initiate quarterly Chloride and TDS monitoring at two wells in the Hansen Dam Area (EV-01 and EV-03) and at three wells in the Los Angeles River Narrows Area (PO-VPB-01, PO-VPB-03, and Pollock No. 6)
- B. Identify preliminary list of existing representative LADWP production wells
- C. Select a total of 3 existing wells in the Tujunga, Rinaldi-Toluca, or North Hollywood well fields.
- D. Meet with Regional Board to get approval of interim plan
- E. Perform interim quarterly monitoring for Chloride and TDS at the above 8 wells until San Fernando GW Monitoring Plan is developed and incorporate results into database

**3. Review the Salt Mass Balance Analysis**

(Estimated duration: 3 months, estimated completion: July 2008)

- A. Validate original assumptions for irrigation usage and chloride/TDS concentrations
- B. Incorporate updated data points where available

**4. Peer review of revised Salt Mass Balance**

(Estimated duration: 6 months, estimated completion: January 2009)

- A. Develop structure of peer review
- B. City and Regional Board to identify experts for peer review panel
- C. Submit mass balance for peer review
- D. Present report recommendations to Regional Board

**ATTACHMENT 1**  
**City of Los Angeles Proposal for Groundwater Monitoring**  
**of Chloride and TDS in the San Fernando Basin**

**Proposed Long-Term Plan for the San Fernando Basin**

**1. Development of Groundwater Monitoring Plan for Chloride and TDS**

(Estimated duration: 24 months; estimated completion: July 2010)

**A. Form the San Fernando Basin Groundwater Monitoring Committee**

- LARWQCB
- City of Los Angeles
- Upper Los Angeles River Area Watermaster
- City of Burbank
- City of Glendale
- City of San Fernando
- Crescenta Valley Water District
- Metropolitan Water District
- Los Angeles County Department of Public Works (stormwater recharge)
- California Department of Public Health (would be selected/invited by LARWQCB)
- San Fernando Basin Specific Non Governmental Organizations (would be selected/invited by LARWQCB)

**B. Develop Groundwater Monitoring Committee's work plan, budget, and cost sharing agreement among all stakeholders**

**C. Inform Stakeholders**

**D. Establish Master contact list**

**E. Conduct literature review and develop Survey or Questionnaire for recycled water beneficial users**

**F. Collect data from existing representative monitoring wells and create database**

**G. Define and Establish Representative Study Areas within San Fernando Basin**

**H. Establish existing water quality ("background") for each study area as a whole**

**I. Identify information data gaps and develop plan to address data gaps**

**J. Produce Groundwater Monitoring Plan Summary Report**

**K. Present Summary Report for Regional Board consideration**

**2. Development of "San Fernando Basin Salt Management Plan"**

(Estimated duration: 24 months; estimated completion July 2012)

**A. Identify the various activities and the parties responsible for salinity contributions**

**B. Form the San Fernando Basin Salt Management Committee**

**C. Develop Committee's work plan, budget, and cost sharing agreement among all responsible parties**

**D. Develop funding plan based on cost sharing agreements**

**E. Responsible parties will develop Draft San Fernando Basin Salt Management Plan for Chloride and TDS**

**F. Present Draft Plan for Regional Board consideration**

**List of Attachment:**

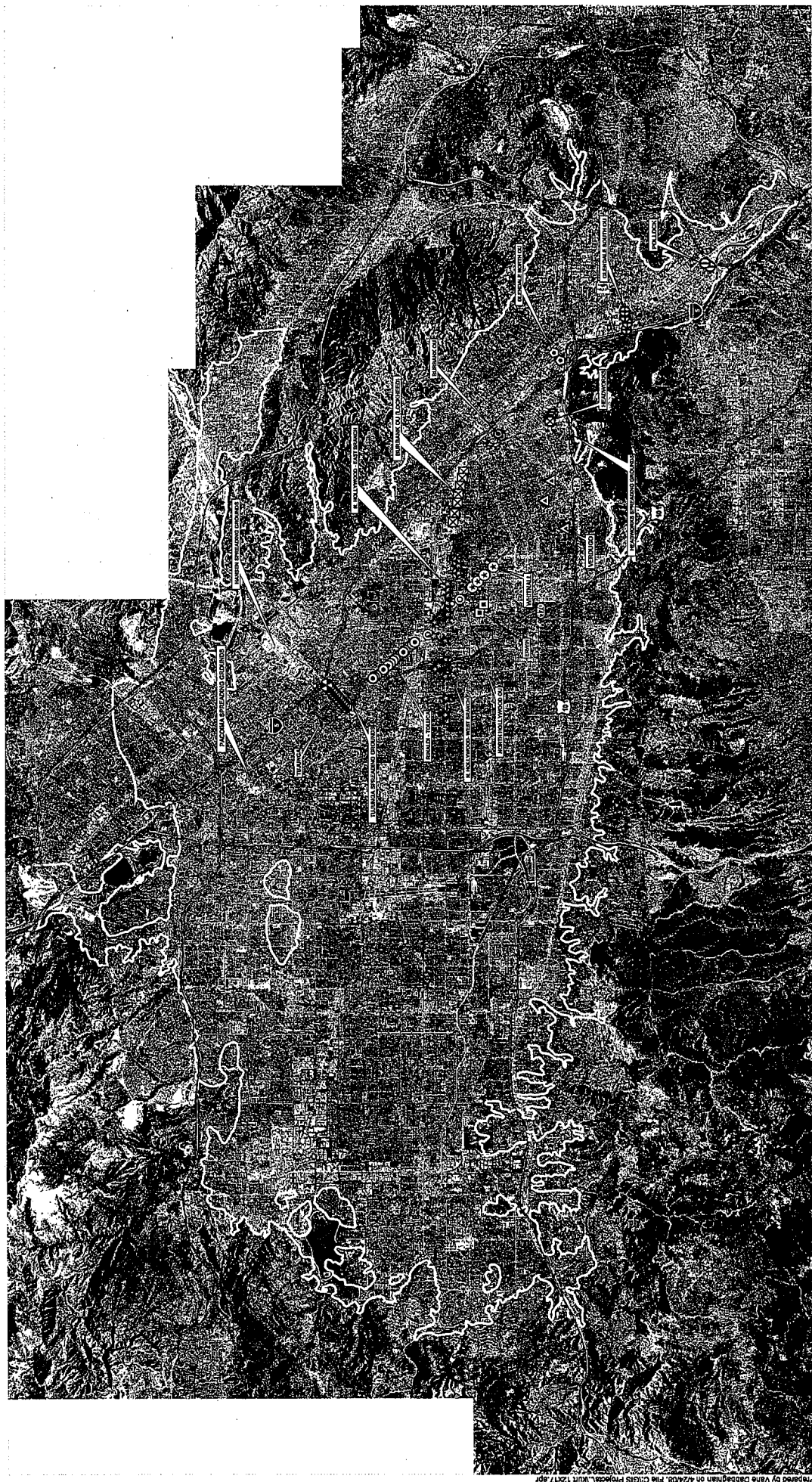
- Gantt Chart

**DRAFT**  
**CITY OF LOS ANGELES PROPOSAL FOR**  
**GROUNDWATER MONITORING OF CHLORIDE/TDS**  
**IN THE SAN FERNANDO BASIN**

ID	Task Name	Start	Finish	2008	2009	2010	2011	2012	
1	PROPOSAL FOR CHLORIDE/TDS MONITORING IN SF BASIN (4 Years 2 Months)	Thu 5/1/08	Wed 7/25/12						
2	Proposed Interim Measures (8 Months)	Thu 5/1/08	Wed 1/7/09						
3	Prepare summary of existing conditions	Tue 7/1/08	Mon 12/15/08						
4	Establish Interim Groundwater Sampling & analysis	Tue 7/1/08	Mon 12/15/08						
5	Prep total of 8 sampling locations	Tue 7/1/08	Mon 12/15/08						
6	Initiate INTERIM quarterly monitoring for TDS/chloride	Mon 12/15/08	Mon 12/15/08						
7	Review the Salt Mass Balance Analysis	Thu 5/1/08	Wed 7/23/08						
8	Peer Review of revised Salt Mass Balance	Thu 7/24/08	Wed 1/7/09						
9	Proposed Long-Term Plan for San Fernando Basin (48 Months)	Thu 7/24/08	Wed 7/25/12						
10	Develop Groundwater Monitoring Plan for Chloride/TDS	Thu 7/24/08	Wed 7/28/10						
11	Develop "San Fernando Basin Salt Management Plan"	Thu 7/29/10	Wed 7/25/12						

Project: GWmonitoring\_SFBasin-Chlor  
Date: Fri 5/9/08

Task: Milestone:   
Split: Summary:   
Progress: Project Summary:   
External Tasks: External Milestone:   
Deadline:



**LEGEND**

- ★ North Hollywood well field
- Erwin well field
- ⊕ Whittall well field
- ⊕ Verdugo well field
- ⊕ Rinaldi - Toluca well field
- ⊕ Tujunga well field
- ⊕ North Hollywood OU extraction well
- ⊕ Burbank OU (Lockhead) extraction well
- ⊕ Burbank OU extraction well
- ⊕ Pollock well
- ⊕ Glendale North OU extraction well
- ⊕ Glendale South OU extraction well
- ⊕ Headworks well
- San Fernando Basin Boundary

**SAN FERNANDO GROUNDWATER BASIN**




Los Angeles Department of Water & Power  
Water Resources Division  
Groundwater Management Group