Water Replenishment District
of Southern California

REGIONAL GROUNDWATER MONITORING REPORT
WATER YEAR 2007-2008

Central and West Coast Basins
Los Angeles County, California

June 2009

REGIONAL GROUNDWATER MONITORING REPORT
CENTRAL AND WEST COAST BASINS
LOS ANGELES COUNTY, CALIFORNIA
WATER YEAR 2007-2008

Water Replenishment District of
Southern California
4040 Paramount Boulevard
Lakewood, California 90712

(562) 921-5521

Robb Whitaker	**General Manager**
Robert Siemak	**Chief of Engineering and Planning**
Ted Johnson	**Chief Hydrogeologist**

Prepared by:

Tony Kirk	**Hydrogeologist**
Jason Weeks	**Senior Engineer**
Mat Kelliher	**Hydrogeologist**
Benny Chong	**Associate Hydrogeologist**
Hoover Ng	**Water Quality Program Manager**
Hélène Mendoza	**Technical Specialist**
Phuong Ly	**Water Quality Specialist**

JUNE 2009

Executive Summary

The Water Replenishment District of Southern California (WRD or the District) was formed in 1959 to manage the groundwater replenishment and groundwater quality activities for 4 million people in 43 cities that overlie the Central and West Coast Basins (CWCB) in southern Los Angeles County. These basins currently supply about 40 percent of the water used by the population in the region. Our mission is to protect and preserve high-quality groundwater in the basins through innovative, cost-effective, and environmentally sensitive management practices for the benefit of residents and businesses of the CWCB.

To that end, WRD has a dedicated Board and staff that engage in year-round activities to closely monitor groundwater conditions. The District performs extensive collection, analysis, and reporting of groundwater data to ensure proper resource management. The publication of this Regional Groundwater Monitoring Report is one result of these efforts, which presents information on groundwater production, groundwater replenishment, groundwater levels, and groundwater quality for the previous Water Year (WY) which runs from October 1 – September 30 of each year. This current report is for WY 2007/08. Detailed information is presented in the body of the report with a summary below:

Groundwater Production

Groundwater is pumped from the CWCB aquifers to help meet municipal, industrial, and agricultural demands. The maximum allowable pumping from the basins has been set through court adjudications at 281,835 acre feet per year (AFY). Actual pumping is normally less than this due to factors such as the District's In-Lieu program, which provides incentives not to pump to decrease basin overdraft, or because numerous water wells are inoperative for maintenance, water quality, or permitting reasons.

In WY 2007/08, total production was 244,732 AF which is 37,103 AF (13.2%) below the adjudicated amount. Last year's pumping was a 3.7% increase from the previous year's pumping of 235,770 AF and a 3.0% increase from previous 5-year average of 237,344 AF.

Groundwater Replenishment

WRD supplements natural groundwater recharge with artificial replenishment to make up the pumping overdraft. These replenishment activities combined with controlled adjudicated pumping have ensured a sustainable, reliable supply of groundwater in the CWCB. Artificial replenishment water sources used by WRD include imported surface water from northern California and the Colorado River and reclaimed municipal wastewater (recycled water) from local wastewater treatment plants.

Artificial replenishment occurs at the Montebello Forebay Spreading Grounds, the seawater barrier injection wells, and the In-Lieu program. In WY 2007/08, a total of 95,795 AF was replenished at the spreading grounds, including 54,518 AF of local water (storm water), 1,510 AF of imported water, and 39,767 AF of recycled water. This is only 77% of normal due to the general unavailability of imported water and lower than planned recycled water. As a result, water levels fell and storage decreased as described in the next section.

At the seawater barrier injection wells, a total of 28,045 AF were injected including 12,880 AF of imported water and 15,165 AF of recycled water. This is a 5.4% increase from the previous 5-year average. There was no In-Lieu replenishment in WY 2007/08 due to the Metropolitan Water District of Southern California's (MWD) suspension of the In-Lieu water due to drought and water shortage.

Groundwater Levels

In the Central Bain, groundwater levels decreased up to 15 feet in WY 2007/08 due primarily to the lack of replenishment water and increased pumping as described in the previous two sections. Water levels in the West Coast Basin, however, remained relatively stable with small localized increases as pumping was generally balanced by recharge. Groundwater in storage decreased over 44,000 AF basin-wide, mostly in the Central Basin in the Montebello Forebay and Los Angeles Forebay areas.

Groundwater Quality

WRD has taken an active role in monitoring and protecting the groundwater and replenishment water quality in the CWCB. We have established the Regional Groundwater Monitoring Program which consists of a network of nearly 250 monitoring wells at over 50 locations throughout the District. WRD collects nearly 500 groundwater samples from these wells on an annual basis and analyzes them for over 100 water quality constituents to produce nearly 50,000 individual data points to help track the water quality in the basins. By analyzing and reviewing the results on a regular basis, any new or growing water quality concerns can be identified and dealt with in an expedited manner.

The results of all the monitoring and detailed analysis is presented in Chapters 2 and 4 of this report. But in summary, the waters that the District uses for groundwater replenishment continue to meet our high standards for quality. And overall, the groundwater in the CWCB continues to be of high quality and suitable for potable and non-potable uses. There are localized areas of marginal to poor water quality that may require treatment prior to use. The causes of these lesser quality areas are from natural or human sources. But, WRD will continue to focus on these areas to monitor trends and look for ways to cleanup any contamination that makes the groundwater unsuitable for use.

Upcoming Activities and Challenges Ahead

WRD remains committed to its statutory charge to protect and preserve the groundwater resources in the CWCB. To that end, WRD will be installing additional monitoring wells in the upcoming year to enhance its monitoring well network and will perform other projects and programs to meet this charge. One of the biggest challenges currently facing the District is the rising cost of imported water and the shortage of imported water for replenishment. The District has gone nearly 2 years without imported water for the spreading grounds resulting in falling water levels and loss from storage. The District seeks to eliminate this reliance on imported water for replenishment and looks to expand its use of local sources including storm water and recycled water. We call this initiative our Water Independence Now (WIN) program – a program designed to ensure a reliable source of replenishment water to keep the groundwater basins useable and of high quality for all the groundwater users in the WRD service area.

Further information may be obtained at the WRD web site at http://www.wrd.org, or by calling WRD at (562) 921-5521. WRD welcomes any comments or suggestions to this Regional Groundwater Monitoring Report.

TABLE OF CONTENTS

Section 1
Introduction

Section 2
Groundwater Replenishment

Section 3
Groundwater Production and Water Levels

Section 4
Groundwater Quality

Section 5
Summary of Findings

Section 6
Future Activities

Section 7
References

List of Tables

List of Figures

List of Figures (Cont'd)

SECTION 1
INTRODUCTION

The Water Replenishment District of Southern California (WRD or the District) manages groundwater replenishment and water quality activities for the Central and West Coast Basins (CWCB) in southern Los Angeles County (**Figure 1.1**). Our mission is to protect and preserve high-quality groundwater in the basins through innovative, cost-effective, and environmentally sensitive management practices for the benefit of residents and businesses of the CWCB.

As part of accomplishing this mission, WRD maintains a thorough and current understanding of groundwater conditions in the CWCB and strives to predict and prepare for future conditions. This is achieved through groundwater monitoring, modeling, and planning, which provide the necessary information to determine the "health" of the basins. This information in turn provides WRD, the pumpers in the District, other interested stakeholders, and the public with the knowledge necessary for responsible water resources planning and management.

1.1 BACKGROUND OF THE REGIONAL GROUNDWATER MONITORING PROGRAM

Since its formation in 1959, WRD has been actively involved in groundwater replenishment, water quality monitoring, contamination prevention, data management, and data publication. Historical over pumping of the CWCB caused overdraft, seawater intrusion and other groundwater management problems related to supply and quality. Adjudication of the basins in the early 1960s set a limit on allowable production in order to control the over pumping. Concurrent with adjudication, WRD was formed to address issues of groundwater recharge and groundwater quality. The Regional Groundwater Monitoring Program is an important District program which tracks water levels and water quality in the CWCB to ensure the usability of this groundwater reservoir.

Prior to 1995, WRD relied heavily upon groundwater monitoring data collected, interpreted, and presented by other entities such as the Los Angeles County Department of Public Works (LACDPW), the California Department of Water Resources (DWR), and the private sector for understanding current basin conditions. However, these data were collected primarily from production wells, which are typically screened across multiple aquifers to maximize water inflow. The result is a mixing of the waters from the different aquifers connected by a single well casing, causing an averaging of water levels and water quality.

In order to obtain more accurate data for specific aquifers from which to infer localized water level and water quality conditions, depth-specific (nested) monitoring wells that tap discrete aquifer zones are necessary. **Figure 1.2** illustrates the capabilities of nested monitoring wells to assess individual aquifers compared to typical production wells. Data are generally provided for a Water Year (WY), which occurs from October 1 to the following September 30. During WY 1994-1995, WRD and the United States Geological Survey (USGS) began a cooperative study to improve the understanding of the geohydrology and geochemistry of the CWCB. The study was documented in USGS Water Resources Investigations Report 03-4065, *Geohydrology, Geochemistry and Ground-Water Simulation-Optimization of the Central and West Coast Basins, Los Angeles County, California* (Reichard et al. 2003). This study was the nucleus of the Regional Groundwater Monitoring Program. In addition to compiling existing available data, this study recognized that the sampling of production wells did not adequately characterize the layered multiple aquifer systems of the CWCB. The study focused on new data collection through drilling and construction of nested groundwater monitoring wells and conducting depth-specific water quality sampling. **Figure 1.3** shows the locations of wells in the resultant WRD nested monitoring well network. A listing and construction details for the WRD wells are presented in **Table 1.1.** WRD and the USGS are currently expanding the nested monitoring well network. Four 4 new wells are scheduled to be completed during 2008-2009 (**Figure 1.3**), with additional wells scheduled from 2009-2012 to fill data gap areas and address significant groundwater management issues.

An *Annual Report on the Results of Water Quality Monitoring* (*Annual Report*) was published by WRD from Water Years 1972-1973 through 1994-1995, and was based on a basinwide monitoring program outlined in the *Report on Program of Water Quality Monitoring* (Bookman-Edmonston Engineering, Inc., January 1973). The latter report recommended a substantial expansion of the then-existing program, particularly the development of a detailed and intensive program of monitoring the quality of groundwater in the Montebello Forebay. The Regional Groundwater Monitoring Program was designed to serve as an expanded, more representative basinwide monitoring program for the CWCB. This Regional Groundwater Monitoring Report is published in lieu of the previous *Annual Reports*.

1.2 CONCEPTUAL HYDROGEOLOGIC MODEL

As described above, the Regional Groundwater Monitoring Program changes the focus of groundwater monitoring efforts in the CWCB from production zones with averaged groundwater level and groundwater quality information, to a layered multiple aquifer system with individual zones of groundwater quality and groundwater levels. WRD views each aquifer as a significant component of the groundwater system and recognizes the importance of the interrelationships between water-bearing zones. The most accepted hydrogeologic description of the basin and the names of water-bearing zones were provided in California Department of Water Resources, *Bulletin No. 104: Planned Utilization of the Ground Water Basins of the Coastal Plain of Los Angeles County, Appendix A – Ground Water Geology* (DWR, 1961). WRD generally follows the naming conventions of this report (Bulletin 104), redefining certain aspects when new data become available.

The locations of idealized geologic cross-sections AA' and BB' through the CWCB are shown on **Figure 1.3**. Cross-sections AA' and BB' are presented on **Figures 1.4** and **1.5**, respectively. These cross-sections are derived from cross-sections presented in Bulletin 104 as well as recent data from the Regional Groundwater Monitoring Program, and illustrate a simplified aquifer system in the CWCB. The main potable production aquifers are shown, including the deeper Lynwood, Silverado, and Sunnyside aquifers of the lower Pleistocene San Pedro Formation. Other main shallower aquifers, which locally produce potable water, include the Gage and Gardena aquifers of the upper Pleistocene Lakewood Formation. Also shown on the geologic sections are the aquitards separating aquifers. Throughout this report the aquifers shown on the geologic sections are referred to as discrete groundwater zones. Many references are made to the Silverado aquifer which is typically the main producing aquifer in the CWCB. Substantial production can come from the Lynwood and Sunnyside aquifers as well.

1.3 GIS DEVELOPMENT AND IMPLEMENTATION

WRD uses a sophisticated Geographic Information System (GIS) as a tool for CWCB groundwater management. Much of the GIS was compiled during the WRD/USGS cooperative study. The GIS links spatially-related information (e.g., well locations, geologic features, cultural features, contaminated sites) to data on well production, water quality, water levels, and replenishment amounts. WRD uses the industry standard ArcGIS® software for data analysis and preparation of spatially-related information (maps and graphics tied to data). WRD utilizes Global Positioning System (GPS) technology to survey the locations of basinwide production wells, nested monitoring wells and other geographic features for use in the GIS database.

WRD is constantly updating the GIS with new data and newly-acquired archives of data acquired by staff or provided by pumpers and other agencies. The GIS is a primary tool for WRD and other water-related agencies to more accurately track current and past use of groundwater, track groundwater quality, and project future water demands, thus allowing improved management of the basins.

In early 2003, WRD completed the development of its Internet-based GIS, which was made available to the public for access to CWCB groundwater information. WRD's Internet-based GIS can be accessed through our GIS web site at *http://gis.wrd.org*. The web site provides the public with access to much of the water level and water quality data contained in this report. The well information can be accessed through interactive map or a text searches and the results can be displayed in both tabular and graphical formats.

1.4 SCOPE OF REPORT

This report updates information on groundwater conditions in the CWCB for WY 2007-2008, and discusses the status of the Regional Groundwater Monitoring Program. Section 1 provides an overview of WRD and its Regional Groundwater Monitoring Program. Section 2 discusses the types, quantities, and quality of different source waters used by WRD for replenishment at the Montebello Forebay Spreading Grounds and the seawater barriers. Section 3 summarizes groundwater production in the CWCB, and evaluates water level, storage change, and groundwater elevation data for WY 2007-2008. Section 4 presents water quality data for the WRD nested monitoring wells and basinwide production wells. Section 5 summarizes the findings of this report. Section 6 describes future regional groundwater monitoring activities. Section 7 lists the references used in this report. Figures and tables are presented at the end of the report. Copies of this report can be downloaded from the WRD web site at www.wrd.org.

SECTION 2
GROUNDWATER REPLENISHMENT

Natural groundwater replenishment occurs through the deep infiltration of precipitation and applied surface waters (such as irrigation) into the aquifers, the capture of stormwater in groundwater recharge facilities known as spreading grounds, and groundwater underflow from adjacent basins. However, there is insufficient natural replenishment to sustain the allowed groundwater pumping that takes place in the CWCB. Therefore, WRD provides for supplemental of artificial groundwater replenishment through the purchase of imported and recycled waters to make up the difference between groundwater pumping and natural replenishment. Artificial replenishment occurs at the Rio Hondo and San Gabriel River Spreading Grounds, at the Alamitos Gap, Dominguez Gap, and West Coast Basin seawater barrier project, and through the District's In-Lieu Program. This section describes the sources, quantities, and quality of water used for artificial replenishment in the CWCB during WY 2007-2008.

2.1 SOURCES OF REPLENISHMENT WATER

Replenishment water comes from imported, recycled, and local sources. These types are described below:

- <u>Imported water:</u> This source comes from the Colorado River and/or the State Water Project via pipelines and aqueducts. WRD purchases this water from member agencies of the Metropolitan Water District of Southern California (MWD) both for surface recharge at the Montebello Forebay Spreading Grounds and for injection at the seawater barriers. For the spreading grounds, the water is replenished from the sources without further treatment, as the source quality is high and the water is treated naturally as it percolates through the vadose zone soils (unsaturated zone). For the seawater barrier wells, the water is treated to meet drinking water standards before injection, since it will not be percolating through vadose zone soils. Spreading water has been available seasonally at a discounted rate from MWD if they have excess reserves although it is anticipated that this water will not be available next year. A premium price is paid for the potable, non-interruptible injection water at the barriers to maintain deliveries throughout the year and during droughts.

- Recycled water: This source's relatively low unit cost and good quality coupled with its year-round availability make it highly desirable as a replenishment source. However, its use is limited by regulatory agencies, including the California Department of Public Health (CDPH) and the Los Angeles Regional Water Quality Control Board (LARWQCB). Tertiary-treated recycled water is used for replenishment at the spreading grounds. Tertiary-treated recycled water followed by advanced treatment using microfiltration, reverse osmosis, and sometimes ultra-violet light is used for injection at the West Coast, Alamitos Gap, and Dominguez Gap Barriers.
- Make-Up Water: "Make-Up Water" is occasionally delivered to the Montebello Forebay Spreading Grounds from the Main San Gabriel Basin. This water, termed the "Lower Area Annual Entitlement", was established in accordance with the judgment in Case No. 722647 of Los Angeles County, City of Long Beach, et al vs. San Gabriel Valley Water Co., et al (Long Beach Judgment). During WY 2007-2008, Make-Up Water was not delivered to the Lower Area.
- Local water: Local water consists of channel flow from local sources (e.g., stormflow, rising water, incidental surface flows) captured and conserved in the Montebello Forebay Spreading Grounds by the LACDPW.
- Precipitation: Precipitation falling on the basin floor and water applied to the ground (such as irrigation water) percolate into the subsurface contribute to natural recharge.
- Subsurface water: Groundwater flows into and out of the CWCB from adjacent groundwater basins (Santa Monica, Hollywood, Main San Gabriel, Orange County) and the Pacific Ocean. The amounts of inflow and outflow depend on the hydrogeologic properties of the aquifers and the groundwater gradients at the basin boundaries.

2.2 QUANTITIES OF REPLENISHMENT WATER

Current and historical quantities of water conserved (replenished) in the Montebello Forebay Spreading Grounds are presented on **Table 2.1**. Current and historical seawater barrier injection amounts are shown on **Table 2.2**. The calculations required to determine the total quantity of artificial replenishment water necessary for the CWCB prior to each Water Year are outlined in the District's annual *Engineering Survey and Report* (ESR).

At the Montebello Forebay Spreading Grounds (**Table 2.1**), the following are noted for the quantities of replenishment water for WY 2007-2008:

- Total water conserved in the Rio Hondo System (consisting of the Rio Hondo Spreading Grounds and percolation behind the Whittier Narrows Dam) and the San Gabriel System (consisting of the unlined San Gabriel River south of the Whittier Narrows Dam and the San Gabriel River Spreading Grounds) was 95,795 acre-feet (AF). This is less than the previous 5-year average of 134,117 AF (WY 2002-2003 through 2006-2007).

- The quantity of local water conserved during WY 2007-2008 was 54,518 AF. The previous 5-year average was 64,595 AF (WY 2002-2003 through 2006-2007).

- Imported water was not available to purchase for spreading by WRD during WY 2007-2008 because MWD cut off this supply, however, DWR reported that the cities of Cerritos, Downey, and Lakewood each purchased from MWD through the Central Basin Municipal Water District, 500 AF of Tier 1 imported water for a total of 1,500 AF. LACDPW reported spreading 1,510 AF in November and December 2007 on behalf of these cities. The previous 5-year average of imported water conserved was 28,681 AF. The future availability of MWD imported water is uncertain.

- The quantity of recycled water conserved at the spreading grounds during WY 2007-2008 was 39,767 AF. This is lower than the previous 5-year average of 40,841 AF.

- In addition to the water sources shown on **Table 2.1**, the Montebello Forebay received an estimated 7,100 AF of recharge due to infiltration of precipitation falling on the forebay floor, and an estimated 24,100 AF of groundwater underflow from San Gabriel Valley. The total replenishment to the Montebello Forebay was therefore 126,995 AF, of which 31.3% was recycled water. The previous five-year average recycled water used was 40,841 AF, and the previous five-year averaged percent recycled water component was 25.2%.

At the seawater intrusion barriers (**Table 2.2**), the following trends are noted for the quantities of artificial replenishment water for WY 2007-2008:

- At the West Coast Basin Barrier, 14,616 AF were injected, which included 3,662 AF of imported water and 10,954 AF of recycled water (75%). Up to 75% recycled water injection is currently permitted at the West Coast Basin barrier. The previous 5-year average (WY 2002-2003 through 2006-2007) was 12,699 AF. Recycled water has been injected since June 1995 at the West Coast Basin Barrier.

- At the Dominguez Gap Barrier, 6,920 AF were injected of which 4,468 AF was imported and 2,452 AF was recycled (35%). Up to 50% recycled water and no more than 5 million gallons per day (MGD) is currently permitted. The previous 5-year average (WY 2002-2003 through 2006-2007) was 7,761 AF. Recycled water has been injected since February 2006 at the Dominguez Gap Barrier.

- At the Alamitos Barrier, both WRD and Orange County Water District (OCWD) provide injection water; WRD purchases the water on the Los Angeles County side, and OCWD on the Orange County side. During WY 2007-2008, a total of

6,509 AF were injected into the barrier system, 4,751 AF by WRD (3,467 AF imported and 1,284 AF recycled) and 1,758 AF by OCWD (1,283 AF imported and 475 AF recycled). The total recycled water contribution was 27%, and up to 50% is allowed by permit. The previous 5-year average (WY 2002-2003 through 2006-2007) was 4,041 AF. Recycled water has been injected since October 2005 at the Alamitos Barrier.

2.3 QUALITY OF REPLENISHMENT WATER

This section discusses water quality data for key parameters in WRD replenishment water and local surface water. Although numerous other constituents are monitored, the constituents reported here are the ones found to be most prevalent at elevated levels or are of current regulatory interest. The data are classified according to their sources. The key water quality parameters of this discussion are: total dissolved solids (TDS), hardness, sulfate, chloride, nitrogen, iron, manganese, trichloroethylene (TCE), tetrachloroethylene (PCE), total organic carbon (TOC), and perchlorate. Monitoring the concentrations of these constituents is necessary for an understanding of the general chemical nature of the recharge source, and its suitability for replenishing the groundwater basins. A brief description of each parameter follows. Various criteria are used in discussing water quality. A Notification Level (NL) and Response Level (RL) are non-enforceable health-based advisory levels established by the CDPH based on preliminary review of health effects studies for which enforceable levels have not been established. Notification Levels and Response Levels replaced State Action Levels effective January 1, 2005 per California Health and Safety Code Section 116455. A Public Health Goal (PHG) is an advisory level that is developed by the Office of Environmental Health Hazard Assessment (OEHHA) after a thorough review of health effects and risk assessment studies. A Primary Maximum Contaminant Level (MCL) is an enforceable drinking water standard that CDPH establishes after health effects, risk assessments, detection capability, treatability, and economic feasibility are considered. A Secondary MCL is established for constituents that impact aesthetics of the water, such as taste, odor, and color, and do not impact health. It should also be noted that constituents with NLs often are considered unregulated contaminants for which additional monitoring may be required to determine the extent of exposure before PHGs and MCLs are established.

- Total Dissolved Solids (TDS): TDS is a measure of the total mineralization of water and is indicative of general water quality. In general, the higher the TDS, the less desirable a given water supply is for beneficial uses. The recommended Secondary MCL for TDS is 500 milligrams per liter (mg/L). The upper limit (Secondary) MCL is 1,000 mg/L, and the short-term (Secondary) MCL is 1,500 mg/L.
- Hardness: For most municipal uses, hardness (a measure of calcium and magnesium ions that combine with carbonates to form a precipitate in water) is an important mineral characteristic of water. Some degree of hardness is considered to be beneficial to human health; studies suggest that it helps to lower cholesterol levels. Excessive hardness is undesirable because it results in increased consumption of cleaning products, scale on pipes, and other undesirable effects. There is no MCL for hardness, but generally waters are considered soft when it is less than 75 mg/L and very hard when greater than 300 mg/L.
- Sulfate: Sulfate is generally not a water quality concern in the CWCB. In excess amounts, it can act as a laxative. CDPH has established a Secondary MCL for sulfate at 250 mg/L and up to 600 mg/L for short-term use. Sulfate is, however a useful water quality constituent in the CWCB for use in tracking flow and observing travel times of artificial recharge water. Colorado River water and recycled water used for recharge in CWCB have relatively higher sulfate concentrations than native groundwater and State Water Project water with relatively lower sulfate concentrations.
- Chloride: Chloride in reasonable concentrations is not harmful to human health. It is the characteristic constituent used to identify seawater intrusion. While recharge sources contain moderate concentrations of chloride, these concentrations are well below the Secondary MCL for chloride of 250 mg/L. Water containing chloride concentrations above this level begins to taste salty. When the ratio of chloride to other anions such as sulfate and bicarbonate becomes high, there is a strong indication of seawater intrusion or possible industrial brine impact to groundwater.

- Nitrogen species: CDPH Primary MCLs limit two forms of nitrogen in drinking water, nitrite and nitrate. Nitrate cannot exceed concentrations of 45 mg/L (measured as Nitrate), corresponding to 10 mg/L as Nitrogen. Nitrite is limited to 1 mg/L as Nitrogen. The combined total of nitrite and nitrate cannot exceed 10 mg/L as nitrogen. These constituents are of concern because they pose an acute health risk and can cause anoxia in infants. When consumed in excess of these limits, they reduce the uptake of oxygen causing shortness of breath, lethargy, and a bluish color.
- Iron: Typically, iron occurs naturally in groundwater. It is also leached from minerals or steel pipes as rust. Small concentrations of iron in water can affect the water's suitability for domestic or industrial purposes. The Secondary MCL for iron in drinking water is 0.3 mg/L because iron in water stains plumbing fixtures and clothing, encrusts well screens, clogs pipes, and may impart a salty taste. It is considered an essential nutrient, important for human health, and does not pose significant health effects except in special cases. Some industrial processes cannot tolerate more than 0.1 mg/L iron.
- Manganese: Manganese, also naturally occurring, is objectionable in water in the same general way as iron. Stains caused by manganese are black and are more unsightly and harder to remove than those caused by iron. The Secondary MCL for manganese is 50 micrograms per liter (µg/L). Like iron, it is considered an essential nutrient for human health.
- Trichloroethylene (TCE): TCE is a solvent used in metal degreasing, textile processing, and dry cleaning. Because of its potential health effects, it has been classified as a probable human carcinogen. The Primary MCL for TCE in drinking water is 5 µg/L.
- Perchloroethylene (PCE): PCE (also known as tetrachloroethylene, perc, perclene, and perchlor) is a solvent used heavily in the dry cleaning industry, as well as in metal degreasing and textile processing. Like TCE, PCE is a probable human carcinogen. The Primary MCL for PCE in drinking water is 5 µg/L.
- Total Organic Carbon: Total organic carbon (TOC) is the broadest measure of all organic molecules in water. TOC can be naturally-occurring, wastewater-derived, or a combination of both (National Research Council, 1998). While there is no MCL

established for TOC, regulators are generally concerned with wastewater-derived TOC as a measurable component of recycled water. It is a surrogate parameter which may indicate the potential for production of disinfection byproducts and the presence of emerging contaminants.

- Perchlorate: Perchlorate is used in a variety of defense and industrial applications, such as rockets, missiles, road flares, fireworks, air bag inflators, lubricating oils, tanning and finishing leather, and the production of paints and enamels. When ingested, it can inhibit the proper uptake of iodide by the thyroid gland, which causes a decrease in hormones for normal growth and development and normal metabolism. In October 2007, the CDPH finalized a new MCL at 6 µg/L for perchlorate.

Quality of Imported Water

As stated previously, treated imported water is used at the seawater barriers. This water meets all drinking water standards and is suitable for direct injection. Average water quality data for treated imported water are presented in **Table 2.3**.

Untreated imported water ("raw water") is used for recharge at the Montebello Forebay spreading grounds. The untreated imported water can be 100% State Project Water or a blend of State project Water and Colorado River Water due to Colorado River Water's relatively higher concentrations of TDS and other salts.

The average TDS concentration of untreated Colorado River water was 675 mg/L in 2007. The average TDS concentration of untreated State Project Water was 252 mg/L.

The average hardness of untreated Colorado River water was 316 mg/L. The average hardness of untreated State Project Water was 112 mg/L.

Nitrate averages were below the detection limit in untreated Colorado River water and the average nitrate concentration of State Project Water was 0.6 mg/L. Recently and historically, both Colorado River and State Project Water nitrate concentrations have been far below the MCL.

The average iron and manganese concentrations of untreated Colorado River Water have remained below detection limits. Iron and manganese in State Project Water was also below detection limits. Both Colorado River and State Project Water iron and manganese concentrations have historically been below the MCL.

The average chloride and sulfate concentrations of Colorado River Water and State Project Water have not changed significantly over the past several years. State Project Water chloride and sulfate concentrations have historically been below their respective MCLs as has the chloride concentration in Colorado River Water. The average sulfate concentration in Colorado River Water exceeded the secondary MCL at 274 mg/L in 2007. However as described above, Colorado River Water is typically blended with State Project Water for artificial recharge in the CWCB.

Total organic carbon was reported at 2.8 mg/L in both untreated Colorado River and State Project Water. According to the MWD, TCE and PCE have not been detected in Colorado River Water or State Project Water during the 2007 reporting period. Perchlorate was not detected in untreated Colorado River Water or State Project Water in 2007.

Quality of Recycled Water

Recycled water is introduced into the CWCB through the spreading grounds percolation and barrier injection. In the Montebello Forebay, recycled water from the Whittier Narrows Water Reclamation Plant (WRP), San Jose Creek East WRP, San Jose Creek West WRP, and Pomona WRP is diverted into spreading basins where it percolates into the subsurface. The water quality from these WRPs is carefully controlled and monitored, as required by permits, and typically shows little variation over time. **Table 2.3** presents average water quality data from these WRPs. All constituents listed have remained stable over recent Water Years. Furthermore, TCE, PCE and perchlorate have either not been detected or have been detected well below their respective MCL in recycled water from these four WRPs.

Recycled water from the West Basin Municipal Water District WRP undergoes advanced treatment using microfiltration, reverse osmosis, ultraviolet light, and advanced oxidation with hydrogen peroxide, and is blended with imported water, then injected at the West Coast Barrier. This water is treated to comply with all drinking water standards and is suitable for direct injection. The blend of recycled water and imported water is injected to prevent the intrusion of seawater and to replenish the groundwater basins. The West Basin Municipal Water District received approval from the LARWQCB for 75 percent and conditional approval for up to 100 percent recycled water. **Table 2.3** presents average water quality data for this injected recycled water.

The Alamitos Seawater Barrier receives a blend of imported water and recycled water from the Leo J. Vander Lans Treatment Facility, owned by WRD. Disinfected tertiary effluent from the Long Beach Water Reclamation Plant of the County Sanitation Districts of Los Angeles County (CSDLAC) is further treated with microfiltration, reverse osmosis, and ultraviolet light. The water meets drinking water quality standards and also other stringent requirements required by the regulatory agencies for injection into a seawater barrier. This project began deliveries in October 2005. **Table 2.3** presents average water quality of the recycled water prior to blending.

Tertiary effluent from the City of Los Angeles Terminal Island Treatment Plant (TITP) is treated further at the Advanced Water Treatment Facility (AWTF) with microfiltration, reverse osmosis, and disinfection with chlorine to produce recycled water. The water meets drinking water quality standards and also other stringent requirements by regulatory agencies for injection into a seawater barrier. Deliveries began in February 2006. **Table 2.3** presents average water quality data of the blend of recycled water and imported water at the TITP AWTF. Some of the constituents were not analyzed for in the blend, but results were available for the TITP AWTF effluent and are included in **Table 2.3**.

Quality of Stormwater

As discussed in Section 2.1, stormwater infiltrates to some degree throughout the District. It is also intentionally diverted from the major storm channels and percolated along with imported and recycled water at the Montebello Forebay Spreading Grounds. Periodic stormwater quality analyses have been performed by LACDPW throughout the history of operations at the Montebello Forebay Spreading Grounds. Average stormwater quality data for 2007 are presented on **Table 2.3**. The average TDS, hardness, sulfate, chloride, nitrate, TCE, and PCE in stormwater in the Montebello Forebay are relatively low. TOC was 9.5 mg/L, which is higher than other sources but is degraded in the subsurface by soil aquifer treatment (SAT).

SECTION 3
GROUNDWATER PRODUCTION, WATER LEVELS AND STORAGE CHANGE

Groundwater production (pumping) for municipal, agricultural, and industrial use provides about 40 percent of the total annual water demand in the CWCB. It is WRD's responsibility to ensure sufficient supplies of groundwater to meet those demands through replenishment at the spreading grounds, the barrier wells, the In-Lieu Program, and through other means. In order to properly manage the groundwater resource, WRD tracks the amount of pumping that occurs in the basins, measures the water levels in the aquifers, and calculates the change in groundwater storage in the basins. The remainder of this Section presents the latest information on these items.

3.1 GROUNDWATER PRODUCTION

Prior to the 1960s, groundwater production in the CWCB was unregulated and continued to increase as the population grew. Although the natural safe yield of the basins was estimated at 173,000 acre-feet per year (AFY) by the DWR (1962), pumping was nearly double this amount. Between WY 1934-1935 and 1956-1957 the annual pumping in the basins ranged from 206,800 AF to 331,600 AF, averaging 281,904 AFY (DWR, 1962). The result of pumping exceeding natural recharge was severe basin overdraft, loss of groundwater from storage, declining water levels, and seawater intrusion.

To remedy this overdraft problem, three main actions occurred: 1) In the early 1950s, the Los Angeles County Flood Control District began installing seawater barrier injection wells to halt the seawater intrusion; 2) In 1959, the WRD was established to provide artificial replenishment water to make up the overdraft; and 3) In the early 1960s, the groundwater basins were adjudicated to regulate pumping at 64,468.25 AFY in the West Coast Basin and 217,367 AFY in the Central Basin, for a total allowable pumping in both basins of 281,835 AFY.

The adjudicated pumping rights were set higher than the natural groundwater replenishment deliberately knowing that WRD would be the entity to make up the difference. WRD purchases artificial replenishment water in the form of imported water from MWD's member agencies or highly treated recycled water from waste water treatment facilities to be put into the ground to make up the overdraft. The amounts and qualities of WRD's replenishment water were discussed in Section 2. A replenishment assessment is levied on the pumping of groundwater in the CWCB to collect the funds necessary to purchase the replenishment water. Therefore, the users of the groundwater pay to replace the groundwater.

During WY 2007-2008, groundwater production in the CWCB was 244,732 AF, of which 206,260 AF occurred in the Central Basin and 38,472 AF occurred in the West Coast Basin. This represents a 3.7% increase from the previous year (4.0% increase in the Central Basin and a 2.1% increase in the West Coast Basin). As a comparison, over the past five years, production has averaged 237,344 AFY (196,882 AFY in the Central Basin and 40,408 AFY in the West Coast Basin). **Table 3.1** presents the historical groundwater production amounts for the CWCB. **Figure 3.1** illustrates the distribution and relative amounts of pumping throughout the CWCB during the WY 2007-2008.

3.2 GROUNDWATER LEVELS

Groundwater levels are an indication of the amount of water in the basins. They indicate areas of recharge and discharge from the basins. They reveal which way the groundwater is moving so that recharge water or contaminants can be tracked. They are used to determine when additional replenishment water is required and are used to calculate storage changes. Groundwater levels can also be used to demonstrate possible source areas for seawater intrusion or show the effectiveness of seawater barrier wells.

WRD tracks groundwater levels throughout the year by measuring the depth to water in production wells and monitoring wells located throughout the CWCB. In order to capture the daily and seasonal variations in water levels, WRD has installed automatic data-logging equipment in numerous wells to collect water levels daily. WRD also obtains water level data from cooperating entities such as the pumpers, DWR, and

LACDPW, who collect water levels from their wells. These data are entered into WRD's GIS for analysis. Groundwater elevation contour maps and water level hydrographs are prepared to illustrate the current and historical groundwater levels in the basins. The change in groundwater storage is determined based on water level fluctuations across the basins.

Figure 3.2 is a contour map showing the groundwater elevations for Spring 2008. Water levels in the spring (March/April) are normally the highest levels of the year due to the winter/spring wet season that provides natural replenishment water, overall reduced water demand, and the pumpers' use of MWD seasonal water if available. The figure shows that in the Central Basin, the highest water levels are in the Montebello Forebay; water levels decrease to the south and west towards the Long Beach area and the Los Angeles Forebay, respectively. In the West Coast Basin, water levels are highest along the West Coast Basin Barrier Injection Project, and decrease to the east where they are at their lowest elevation in Gardena between the Charnock Fault and Newport Inglewood Uplift, both of which are geologic structural features that restrict groundwater flow.

Figure 3.3 is a contour map for Fall 2008. Water levels in the fall (September/October) are normally the lowest of the year because of the higher amounts of pumping and the reduction in natural replenishment during summer and fall (dry season). Water level highs and lows and flow directions are similar to the spring map, except that water levels are lower over much of the CWCB. As shown in **Figure 3.4**, water levels between Spring and Fall 2008 varied little in the West Coast Basin, but in the Central Basin they varied (decreased) as much as 30 feet in the Long Beach area. The flow path southward from the Montebello Forebay to the Long Beach area showed the greatest seasonal decreases. Significant decreases were also observed from the Montebello Forebay to the Los Angeles Forebay and western Central Basin pressure areas. The seasonal swing in water levels observed this past water year was less pronounced than typical years, especially in the confined aquifers in the Long Beach area.

Figure 3.5 illustrates the monthly groundwater production quantities for WY 2007-2008. In the Central Basin, monthly pumping ranged from about 14,300 AF in December to 19,100 AF in August. The 7-month average (the wet season) between October and April is 16,300 AF/month compared to the 5-month average (the dry season) between May and September of 18,400 AF/month. This difference of about 2,000 AF/month mostly explains the large water level fluctuations between spring and fall. In the West Coast Basin, pumping fluctuations were less pronounced, averaging 3,200 AF/month throughout the year.

WRD also uses long-term hydrographs to track the changes in water levels in wells over time. Hydrographs reveal periods of dry years, over-pumping, water level declines, and loss from storage versus times of surplus water, reduced pumping, and water level recovery. For example, **Figures 3.6 through 3.9** are long-term hydrographs of water level data going back to the 1930s and 1940s in the Montebello Forebay, Los Angeles Forebay, Central Basin Pressure Area, and West Coast Basin, respectively. The hydrographs illustrate the general history of groundwater conditions in the CWCB: 1) Steep water level declines occurred in the 1930s through 1950s as a result of excessive pumping (overdraft); 2) In the mid-1950s to early 1960s, there was a sharp reversal in this downward trend due to initiation of resource management policies, water levels rose through the 1970s and 1980s in response to reduced pumping, artificial replenishment by WRD, and seawater barrier construction and injection; and 3) Over the past 10 to 15, years water levels have remained relatively stable as replenishment has balanced withdrawal. In the past year, however, long-term hydrographs indicate water levels in the Montebello Forebay have dropped around 20 feet. Los Angeles Forebay groundwater levels decreased around 4 feet and portions of the Central Basin Pressure area may have decreased up to 20 feet. In the West Coast Basin, water levels rose up to 4 feet per year from 2001 through 2006, but have stabilized or slightly decreased over the past several years.

Hydrographs that track annual water level changes are also used for detailed, aquifer-specific information. The data for these annual hydrographs are collected from WRD’s network of nested monitoring wells. **Table 3.2** presents manual groundwater level measurements collected from the District's nested monitoring wells during the 2007-2008 WY. **Figures 3.10 through 3.13** are annual hydrographs of selected wells for the WY 2007-2008 for the Montebello Forebay, Los Angeles Forebay, Central Basin Pressure Area, and West Coast Basin, respectively. These hydrographs demonstrate the water elevation differences between individual aquifers at each nested well location. The differences in elevation are caused when a well taps an aquifer that is not in direct hydraulic communication with another aquifer at that same location due to the presence aquitards, and due to the influence of recharge or discharge (i.e., pumping wells) in one aquifer that is not present in another. Observations from **Figures 3.10 through 3.13** are explained below.

Figure 3.10 is a hydrograph for WRD's Rio Hondo #1 nested monitoring well located in the Montebello Forebay at the southeast corner of the Rio Hondo Spreading Grounds. It has six individual wells (zones) that are screened in the following aquifers (from shallowest to deepest); Gardena, Lynwood, Silverado, and Sunnyside (3 different zones), with depths ranging from 140 feet below ground surface (bgs) to 1,130 feet bgs. Because this well is in the Montebello Forebay, where the aquifers are in general hydraulic communication with each other, water level responses in all of the wells are similar and respond to the seasonal highs and lows caused by recharge and pumping. Water elevations are lowest in Zone 4, the Silverado Aquifer, suggesting that this aquifer is the most heavily pumped in the area. Water levels in Zone 4 decreased over the Water Year by about six feet.

Figure 3.11 is a hydrograph for WRD's Huntington Park #1 nested monitoring well located in the Los Angeles Forebay near the intersection of Slauson Avenue and Alameda Street. It has five individual zones that are screened in the following aquifers (from shallowest to deepest): Gaspur, Exposition, Gage, Jefferson, and Silverado, with depths ranging from 134 feet bgs to 910 feet bgs. Only four of the zones are shown on the hydrograph because the shallowest well (screened from 114 feet to 134 feet in the Gaspur Aquifer) is dry, and therefore no water elevations can be shown on the graph. The large separation in water levels between Zone 4 and the deeper three zones suggest the presence of a low permeability aquitard(s) between them that hydraulically isolates the Exposition Aquifer from the deeper aquifers. Water levels in the deepest 2 zones in the Silverado and Jefferson aquifers were generally similar and trended downward through the year, decreasing by about 2 feet during the year.

Figure 3.12 is a hydrograph for WRD's Long Beach #1 nested monitoring well located in the Central Basin Pressure Area, about a half mile south of the intersection of the 605 Freeway and Willow Street. It has 6 individual zones that are screened in the following aquifers (from shallowest to deepest): Gage, Jefferson, Lynwood, Silverado, and Sunnyside (2 zones), with depths ranging from 175 feet bgs to 1,450 feet bgs. Because this area in the Central Basin Pressure Area has multiple confined aquifers and experiences heavy seasonal pumping cycles, water level fluctuations can be significant. For example, in WY 2007-2008, water levels in Zone 3, representing the Silverado Aquifer, varied about 40 feet throughout the year, from a high of 50 feet below sea level in April to a low of about 90 feet below sea level in September. Many years, Zone 3 can drop nearly 100 feet between spring and fall. Water levels of the six zones generally followed the same trend throughout the year, with lows in the late summer and fall and highs in spring. The annual decrease in water levels began in late April, as seasonal pumping commenced (recall **Figure 3.5**). Water levels in Zone 3 finished the year about the same as the start of the year.

Figure 3.13 is a hydrograph for WRD's Carson #1 nested monitoring well located in the West Coast Basin about 1.5 miles northwest of the intersection of the 405 Freeway and Alameda Street. It has 4 individual zones that are screened in the following aquifers (from shallowest to deepest): Gage, Lynwood, Silverado, and Sunnyside, with depths ranging from 270 feet bgs to 1,110 feet bgs. Water levels in Zone 1 track very similar to Zone 2 throughout the year, and Zone 3 tracks similar to Zone 4. A difference of about 35 feet in groundwater elevation between the upper two zones and lower two zones suggest the presence of a low permeability aquitard(s) between them that hydraulically isolates the shallower aquifers from the deeper ones. Water levels in Zone 2 (Silverado

Aquifer) finished the year about the same as the start of the year.

The results of groundwater level changes observed throughout the Water Year are illustrated in **Figure 3.14**, which is a water level change map. In the Central Basin, water levels were up to 15 feet lower at the end of the year than at the start. The greatest decreases were in the Montebello Forebay around the Rio Hondo and San Gabriel spreading grounds. Most of the Central Basin Pressure Area dropped from 1 to 10 feet, except in the northwestern portion and the Long Beach area, where levels remained the same or increased very slightly from the previous year. In the West Coast Basin, water levels remained relatively flat on the western portion, and rose slightly in the Dominguez Gap area and in the eastern portion around the Gardena area between the Newport Inglewood Uplift and Charnock Fault, which act as barriers to groundwater flow.

3.3 GROUNDWATER STORAGE CHANGE

Groundwater enters the CWCB through natural and artificial replenishment and leaves the basins primarily through pumping. If the amount of groundwater entering the basins equals the amount leaving, then water levels remain relatively constant and the basin is at "steady state". When the amount of groundwater entering the basins exceeds the amount leaving, then there is a surplus and water levels rise and the amount of groundwater in storage increases. Conversely, when the amount of groundwater leaving the basins exceeds the amount entering, then there is a deficit (overdraft) and water levels drop and the amount of groundwater in storage is reduced.

The change in groundwater storage over the course of the Water Year is determined by calculating the water level changes and multiplying those values by the storage coefficients of the aquifers. Water level changes were obtained from WRD's nested monitoring wells and are presented as **Figure 3.14**. The aquifer storage coefficients were obtained from the detailed MODFLOW computer model of the District prepared for WRD by the USGS (Reichard et al, 2003). Groundwater storage changes are relatively small in the confined aquifers because the aquifers are fully saturated and storage coefficients are generally small (averaging about 0.0005). Water level changes in these areas are really pressure changes versus the actual filling or draining of aquifer materials. That is why a very large water level change can be observed and yet there is very little corresponding storage change. The most significant storage changes occur in the Montebello and Los Angeles forebay areas, which have unconfined aquifers with storage coefficient (specific yield) values on the order of 0.075 to 0.15. Water level changes in these areas are the result of the filling or draining of sediments and can have relatively large storage changes with relatively small water level changes.

Based on the calculations of the water level change map and the storage coefficient grids from the model, WRD has determined that 44,000 AF of water was removed from storage in the CWCB during the WY 2007-2008.

SECTION 4
GROUNDWATER QUALITY

This section discusses the vertical and horizontal distribution of several key water quality parameters based on data from WRD's monitoring wells for WY 2007-2008 and purveyor's production wells for WYs 2005-2008. Semi-annual groundwater samples from nested wells were submitted to a CDPH-certified laboratory for analytical testing for general water quality constituents, known or suspected contaminants, and special interest constituents. Water quality data for production wells were provided by the CDPH based on results submitted over the past three years by purveyors for their Title 22 compliance. **Figures 4.1 through 4.28** are maps which present water quality data for key parameters and special interest constituents in the WRD nested monitoring wells and production wells in the CWCB. The figures present the maximum values for data where more than one result is available over the time frame. **Table 1.1** presents well construction information and aquifer designations for WRD wells. **Table 4.1** categorizes groundwater at the WRD wells into major mineral water quality groups. **Table 4.2** lists the water quality analytical results alphabetically by well location for the wells in the Central Basin during WY 2007-2008. **Table 4.3** lists the water quality analytical results alphabetically by well location for the wells in the West Coast Basin during WY 2007-2008.

4.1 MAJOR MINERAL CHARACTERISTICS OF GROUNDWATER IN THE CENTRAL AND WEST COAST BASINS

Major minerals data obtained from laboratory analyses were used to characterize groundwater from discrete vertical zones of each WRD well (**Table 4.1**). Research by the USGS has provided three distinct groupings of groundwater compositions. Group A groundwater is typically calcium bicarbonate or calcium bicarbonate/sulfate dominant. Group B groundwater has a typically calcium-sodium bicarbonate or sodium bicarbonate character. Group C has a sodium chloride character. A few of the WRD wells yield groundwater samples which do not fall into one of the three major groups and are grouped separately.

Groundwater from Group A likely represents recent recharge water containing a significant percentage of imported water. Groundwater from Group B represents older native groundwater replenished by natural local recharge. Groundwater from Group C represents groundwater impacted by seawater intrusion or connate saline brines. **Table 4.1** lists the groundwater group for each WRD nested monitoring well. Comparison of groundwater groups with well locations indicates that, in general, Group A groundwater is found at and immediately downgradient from the Montebello Forebay Spreading Grounds in all but the deepest zones. Group B groundwater is found farther down the flow path of the Central Basin and inland of the salt water wedge and injected water in the West Coast Basin. Group C water is generally found near the coastlines or in deeper zones. Several wells, grouped as “Other” on **Table 4.1**, exhibit a chemical character range different from Group A, B, and C ranges and represents unique waters not characteristic of the dominant flow systems in the basins. The USGS is currently conducting trace element isotope analyses of water from these wells to identify their hydrogeologic source(s).

The major mineral compositions of water from the WRD nested monitoring wells sampled this Water Year have not changed substantially from previous years. It is expected that continued analysis will show gradual changes in major mineral compositions over time, as older native water is extracted from the basins and replaced by younger naturally and artificially replenished water.

4.2 TOTAL DISSOLVED SOLIDS (TDS)

TDS is a measure of the total mineralization of water and is indicative of general water quality. In general, the higher the TDS, the less desirable a given water supply is for beneficial uses. The Secondary MCL for TDS ranges from 500 milligrams per liter (mg/L), which is the recommended level, to an upper level of 1,000 mg/L, and to 1,500 mg/L, which is the upper level allowed for short-term use.

WRD nested monitoring well data for WY 2007-2008 indicate relatively low TDS concentrations for groundwater in the deeper producing aquifers of the Central Basin (**Figure 4.1**). TDS concentrations in the Central Basin ranged from 168 mg/L in Norwalk #1 zone 4 to 2,730 mg/L in Whittier #1 zone 1. In the Central Basin, Silverado Aquifer zones in 19 out of 26 WRD nested monitoring wells had low TDS concentrations, below 500 mg/L. The Silverado aquifer zones in 25 out of 26 Central Basin wells tested had at least one interval less than the CDPH upper level for TDS of 1,000 mg/L. Generally, TDS concentrations above 1,000 mg/L were limited to localized very deep or very shallow zones of Inglewood #2, Long Beach #1, Long Beach #2, Montebello #1, Whittier #1, and Whittier Narrows #1. TDS greater than 1,000 mg/L was found in the Silverado zones at Whittier #1 and Whittier #2. The average TDS concentration for all WRD Central Basin monitoring wells tested in WY 2007-2008 is 531 mg/L.

In contrast, West Coast Basin nested monitoring well data show generally higher TDS concentrations. TDS in WRD nested monitoring wells in the West Coast Basin ranged from 192 mg/L in Carson #1 zone 1, to 11,900 mg/L in PM-4 Mariner zone 2. Only the most inland nested monitoring wells, Carson #1, Carson #2, Gardena #1, and Gardena #2 indicate TDS values below 500 mg/L consistently for zones below the shallowest. Elevated TDS concentrations are seen on the northern, western and southern margins of the West Coast Basin. Wilmington #1 and Wilmington #2, located near the Dominguez Gap Barrier have significantly high TDS values, each with elevated TDS in multiple zones, including Silverado aquifer zones. Many zones of the Inglewood #1, Long Beach #8, and Lomita #1 nested monitoring wells exceed 750 mg/L with one or more zones greater than 1,000 mg/L. The average TDS concentration for all WRD West Coast Basin monitoring wells tested in WY 2007-2008 is 1,090 mg/L.

Figure 4.2 presents CDPH water quality data for TDS in production wells across the CWCB during WYs 2005-2008. In the Central Basin, TDS generally ranged between 250 and 750 mg/L over most of the basin. The average TDS concentration from Central Basin production wells was 429 mg/L. In a localized area along the San Gabriel River in the general vicinity of and downgradient of the Rio Hondo and San Gabriel River

Spreading Grounds, many wells had TDS concentrations between 500 and 750 mg/L. A few wells in this area contained TDS in excess of 750 mg/L. Another localized area in the northernmost portion of the Central Basin shows a grouping of production wells between 500 and 750 mg/L. Data from many of the production wells in the southernmost portion of the Central Basin indicated TDS less than 250 mg/L.

Data from West Coast Basin wells indicate that most drinking water wells in production had TDS concentrations below 750 mg/L. Several production wells located close to the coast in the Hawthorne/Torrance areas had TDS concentrations above 750 mg/L. The average TDS concentration from West Coast Basin production wells was 568 mg/L.

4.3 IRON

Iron occurs naturally in groundwater. Additionally, it is leached from minerals or steel pipes. Sufficient concentrations of iron in water can affect the water's suitability for domestic or industrial purposes. The Secondary MCL for iron in drinking water is 0.3 mg/L. High concentrations of iron in water stains plumbing fixtures and clothing, encrusts well screens, clogs pipes, and may impart a salty taste. It is considered an essential nutrient, important for human health, and does not pose significant health effects except in special cases. Some industrial processes cannot tolerate more than 0.1 mg/L iron.

Dissolved iron in groundwater has historically been a water quality concern in portions of the CWCB. An abundant natural source of iron is present in the minerals making up the aquifers of the basins. The presence of dissolved iron (that is, iron dissolving from minerals into the groundwater) is controlled by a variety of geochemical factors discussed at the end of this section. In the Central Basin, iron in nested monitoring wells (**Figure 4.3**) ranged from less than the detection limit (numerous wells) to 9.6 mg/L (Whittier Narrows #1, zone 1). Iron was below the MCL in Silverado zones in 25 out of the 26 nested wells tested. In zones above or below the Silverado, iron was detected above the MCL in only 3 out of the 26 Central Basin nested wells. Iron was detected above the MCL in only one Silverado zone (Pico #1, zone 3), and in only three wells above or below the Silverado (Inglewood #2, zones 1 and 2, Whittier Narrows #1 zone 1, and Whittier #1, zones 1 and 2).

In the West Coast Basin, elevated iron occurs locally. Iron concentrations ranged from less than the detection limit (numerous wells) to 0.95 mg/L (Long Beach #8, zone 6). Iron is generally detected in one or more zones at all 15 well locations at concentrations below the MCL. One well in the West Coast Basin had an iron concentration in the Silverado exceeding the MCL (Inglewood #1, zone 3). Three wells had iron concentrations above the MCL in shallow zones above the Silverado.

Figure 4.4 presents CDPH water quality data for iron in production wells across the CWCB during WYs 2005-2008. The data show elevated iron concentrations in many production wells throughout the CWCB and some purveyors opt to treat groundwater to remove the iron. Typical treatment is oxidation of relatively soluble ferrous to less soluble ferric iron, followed by precipitation and filtering. There does not appear to be a distinct pattern to the occurrence of elevated iron. Production wells exhibiting high iron concentrations appear in and around many with non-detectable iron.

Data from CDPH indicate 29 of 236 Central Basin production wells tested, with most located in the northern portion of the Basin, have iron concentrations exceeding the secondary MCL. In the West Coast Basin, 9 production wells out of 34 have iron concentrations exceeding the secondary MCL.

Although a definitive source cannot be identified for the various elevated iron concentrations described above, some general geochemical relationships for dissolved iron in groundwater may apply to the iron distribution patterns. First, dissolved iron tends to form under reducing groundwater conditions. Groundwater having a pH value between 6 and 8 can be sufficiently reducing to retain as much as 50 mg/L of dissolved ferrous iron at equilibrium, when bicarbonate activity does not exceed 61 mg/L (Hem, 1992). Second, iron is a common component of many igneous rocks and is found in trace amounts in virtually all sediments and sedimentary rocks; therefore, abundant natural sources of iron are present throughout the CWCB and under specific geochemical conditions, the natural iron in the sediments can dissolve into the groundwater. Third, water may pick up iron from metal casing and pipe (the main materials of older production wells and pumps and distribution systems), thus production wells and distribution piping may contribute iron to water supplies after being pumped from the aquifers.

4.4 MANGANESE

Manganese, like iron, is also naturally occurring and is objectionable in water in the same general way as iron. Stains caused by manganese are black and are more unsightly and harder to remove than those caused by iron. The Secondary MCL for manganese is 50 µg/L. Like iron, it is considered an essential nutrient for human health.

Manganese concentrations (**Figure 4.5**) in the WRD nested monitoring wells exhibit widespread vertical and horizontal variations across the CWCB. In the Central Basin, manganese ranges from below the detection limit (numerous wells) to 630 µg/L (Cerritos #2 zone 6). In the southern portion of the basin, elevated manganese typically occurs in shallower aquifers above the Silverado producing zones. In the northern portion of the Central Basin, manganese is present in shallow zones, the Silverado zones, and the deeper zones. Five nested monitoring wells in the Central Basin had manganese concentrations exceeding the MCL in the Silverado zone including Commerce #1, Compton #1, Montebello #1, Whittier #1, and Whittier #2.

In the West Coast Basin, manganese concentrations in nested monitoring wells ranged from below the detection limit (numerous wells) up to 1,200 µg/L (Long Beach 8 zone 6). In the southern portion of the West Coast Basin, like iron, elevated manganese concentrations were limited to aquifer zones above the Silverado. In the western and northern portions of the West Coast Basin, manganese concentrations typically exceed the MCL in over half of the zones with concentrations exceeding the MCL within, above, and below the Silverado aquifer zone. The average manganese concentration in West Coast Basin nested wells was 108 µg/L, while the average in the

Central Basin was 46 μg/L.

Figure 4.6 presents CDPH water quality data for manganese in production wells across the CWCB during WYs 2005-2008. In the Central Basin, data show a large number of wells having elevated manganese concentrations with 49 out of 236 production wells tested exceeding the MCL. The production wells with elevated manganese tend to be widespread, but there does appear to be an area around and south of the Montebello Forebay Spreading Grounds and a second area at the southern end of the Central Basin where manganese is consistently below the MCL. In the West Coast Basin 19 out of 30 production wells tested had concentrations of manganese exceeding the MCL. The wells tend to be somewhat clustered in the northern portion of the basin. Typical treatment for manganese is oxidation followed by filtration, similar to treatment used for iron.

4.5 NITRATE

CDPH Primary MCLs limit two forms of nitrogen in drinking water, nitrite and nitrate. Nitrate cannot exceed concentrations of 45 mg/L (measured as Nitrate), corresponding to 10 mg/L as Nitrogen. Nitrite is limited to 1 mg/L as Nitrogen. The combined total of the nitrite and nitrate, measured as total nitrogen cannot exceed 10 mg/L. These constituents are of concern because they present an acute health risk and can cause anoxia in infants. When consumed in excess of these limits, they reduce the uptake of oxygen causing shortness of breath, lethargy, and a bluish color.

Nitrate concentrations in groundwater are a concern because their presence indicates that a degree of contamination has occurred due to the degradation of organic matter. Native groundwater typically does not contain nitrate. It is usually introduced into groundwater from agricultural practices such as fertilizing crops or lawns and leaching of animal wastes. Low concentrations of nitrogen compounds, including nitrate and nitrite, are below regulatory and permitted levels in treated recycled water and may contribute nitrate to groundwater. Typically, organic nitrogen and ammonia are the initial byproducts of the decomposition of human or animal wastes. Upon oxidation, the organic nitrogen and ammonia are converted first to nitrite and then nitrate ions in the subsurface. A portion of the nitrite and nitrate are converted to nitrogen gas and hence, are returned to the atmosphere. Nitrate itself is not harmful; however, it can be converted back to nitrite, which can be harmful.

Figure 4.7 presents nitrate (as nitrogen) water quality data for nested monitoring wells in the CWCB during WY 2007-2008. In the Central Basin, nitrate (as nitrogen) concentrations ranged from below the detection limit (numerous wells) to 14 mg/L (Los Angeles #1 zone 5). Nested monitoring wells in the very near vicinity of the Montebello Forebay Spreading Grounds indicate concentrations of nitrate slightly above detection limits but below the MCL. Rio Hondo #1 and Pico #2 show detectable concentrations of nitrate from the shallowest zones down to zones 3 and 1, respectively. South Gate #1, Downey #1, Bell Gardens #1, and Cerritos #2 show detectable concentrations in one or more of the middle zones, which are on the margins of the spreading grounds and directly down the flow path. Silverado and deeper zones of nested wells more distant from the spreading grounds have no detectable concentrations of nitrate. The detectable but relatively low concentrations of nitrate at and near the spreading grounds may be due to the local water and/or recycled water component of recharge at the spreading grounds. Nitrate is also observed in shallow zones at Los Angeles #1, Huntington Park #1, Commerce #1, Montebello #1, Pico #1, Norwalk #2, Whittier #1, Whittier #2, Whittier Narrows #1, and La Mirada #1. These shallow occurrences of nitrate, may be attributed to local surface recharge from former agricultural activities prior to the extensive land development that began in the 1950s.

In the West Coast Basin nested monitoring wells, nitrate concentrations ranged from below the detection limit (numerous wells) to 21 mg/L (Chandler #3 zone 2). Concentrations exceeding the nitrate MCL included the shallowest zones of Chandler #3, and Gardena #1. Detections below the MCL in the shallowest zone at Hawthorne #1 and Inglewood #1 were observed. As in the Central Basin, shallow zone occurrences of nitrate with deeper zones below detection limits may be attributable to local surface recharge from former agricultural activities prior to the extensive land development that began in the 1950s.

Figure 4.8 presents CDPH water quality data for nitrate in production wells across the CWCB during WYs 2005-2008. Detectable concentrations below the MCL were generally located in the vicinity and downgradient of the San Gabriel River and Rio Hondo Spreading Grounds (SG) of the Montebello Forebay, and in several scattered locations in the northwestern portion of the Central Basin. Production wells in the immediate vicinity of the SG and the southern portion of the Central Basin and all of the West Coast Basin show relatively low nitrate concentrations below 3 mg/L. The nitrate MCL was not exceeded in any production well in the CWCB during the 2005-2008 period. Like the nitrate observed in the nested monitoring wells, nitrate in production wells may be attributable to local surface recharge from agricultural activities prior to the extensive development that began in the 1950s.

4.6 HARDNESS

For most municipal uses, hardness (a measure of calcium and magnesium ions that combine with carbonates to form a precipitate in water) is an important mineral characteristic of water. Some degree of hardness is considered to be beneficial to human health; studies suggest that it helps to lower cholesterol levels. Excessive hardness is undesirable because it results in increased consumption of cleaning products, scale on pipes, and other undesirable effects. There is no MCL for hardness, but generally waters are considered soft when it is less than 75 mg/L and very hard when greater than 300 mg/L.

Figure 4.9 presents water quality data for total hardness in WRD nested monitoring wells in the CWCB during WY 2007-2008. In the Central Basin, total hardness ranged from 6.4 (Long Beach 1 zone 1) to 1,080 mg/L (Whittier #1 zone 1), while in the West Coast Basin, hardness ranged from 8.7 mg/L (Carson #2 zone 1) to 5,270 mg/L (PM-4 Mariner zone 2). In general, the deeper aquifers characterized as having older native groundwater in the southern portion of the Central Basin and locally in the West Coast Basin show low total hardness. Most other zones in both basins have moderate to high hardness.

Figure 4.10 presents CDPH water quality data for total hardness in production wells in the CWCB during WYs 2005-2008. Groundwater from production wells in the West Coast Basin have moderate hardness. Production wells in the southern and western portions of the Central Basin show groundwater with low to moderate hardness. In the northern portion of the Central Basin, production wells show groundwater with generally moderate to high hardness.

4.7 SULFATE

Sulfate is generally not a water quality concern in the CWCB. In excess amounts, it can act as a laxative. CDPH has established a Secondary MCL recommended lower level for sulfate at 250 mg/L and an upper level at 500 mg/L. Sulfate, however is a very useful water quality constituent in the CWCB for use in tracking flow and observing travel times of artificial recharge water. Colorado River water and recycled water used for recharge in CWCB have characteristically high sulfate concentrations while native groundwater and State Water Project water have relatively low sulfate concentrations.

Figure 4.11 presents water quality data for sulfate in WRD nested monitoring wells in the CWCB during WY 2007-2008. In the Central Basin, sulfate ranged from below the detection limit (numerous wells) to 1,300 mg/L (Whittier #1 zone 1), while in the West Coast Basin sulfate ranged from below the detection limit (numerous wells) to 870 mg/L (PM-4 Mariner zone 2). In general, the data indicate that the lowest sulfate concentrations are found in most of the deeper zones of the West Coast Basin and southern portion of the Central Basin. Again, these are areas characterized in previous sections as having characteristics representative of older native groundwater. The uppermost one or two zones in many of these wells typically show elevated sulfate concentrations, likely due to local surface recharge. In the northeast portion of the Central Basin, higher sulfate concentrations are observed in most zones primarily due to the relatively high sulfate in imported Colorado River water. In the Central Basin, a Silverado zone of Whittier #1, in an area of generally poor water quality, has sulfate over the MCL, as does Whittier #2 zone 4 which is above the Silverado aquifer. In the West Coast Basin, PM-4 Mariner, which is impacted by sea water intrusion, has sulfate over the MCL in the Silverado aquifer and Hawthorne #1 has sulfate over the MCL in the shallowest zone, above the Silverado aquifer.

Figure 4.12 presents CDPH water quality data for sulfate in production wells in the CWCB during WYs 2005-2008. The production well data indicate patterns of sulfate concentrations similar to those observed in the deeper zones of WRD nested monitoring wells. Sulfate concentrations are generally low in the central and eastern areas of the West Coast Basin and southern portion of the Central Basin, and somewhat higher along the western margin of the West Coast Basin and in the northern portion of the Central Basin.

4.8 CHLORIDE

Chloride in reasonable concentrations is not harmful to human health. Recharge sources contain low to moderate concentrations of chloride, which are well below the Secondary MCL upper level of 500 mg/L for chloride. Water with chloride concentrations above this level begins to taste salty. Chloride is the characteristic constituent used to identify seawater intrusion. When the ratio of chloride to other anions, such as sulfate and bicarbonate increases, there is a strong indication of seawater intrusion or possible industrial brine impact to groundwater.

Figure 4.13 presents water quality data for chloride in WRD nested monitoring wells in the CWCB during WY 2007-2008. In the Central Basin, chloride concentrations ranged from 5 mg/L (Downey #1 zone 1) to 670 mg/L (Montebello #1 zone 1). The Silverado aquifer zones of the Central Basin nested monitoring wells contain very low to low chloride concentrations, with a maximum concentration of 270 mg/L at Whittier #2 zone 4. In the West Coast Basin, chloride ranged from 13 mg/L (Gardena #2 zone 1) to 8,000 mg/L (PM-4 Mariner zone 2). Chloride concentrations exceeded the Secondary upper MCL limit in the Silverado aquifer zones in 5 of the 15 West Coast Basin nested wells, primarily in areas where seawater intrusion could be the source (Long Beach #8, Long Beach #3, Wilmington #1, Wilmington #2, and PM-4 Mariner) or from sources yet to be identified. Numerous wells in the West Coast Basin show chloride impacts above and below the Silverado aquifer.

Figure 4.14 presents CDPH water quality data for chloride in production wells in the CWCB during WYs 2005-2008. Chloride was not detected above the Secondary upper MCL level in any of the Central Basin production wells. In the southern portion of the Central Basin, chloride concentrations in production wells were generally below 50 mg/L. In the northeastern portion of the Central Basin, chloride concentrations ranged from 50 to 100 mg/L. In the West Coast Basin, available CDPH data indicate that one production well on the west side of the basin had a chloride concentration above the MCL. Several other production wells two to four miles inland from the coast show somewhat elevated chloride concentrations. Production wells further inland in the West Coast Basin have very low chloride concentrations.

4.9 TRICHLOROETHYLENE (TCE)

TCE is a solvent used in metal degreasing, textile processing, and dry cleaning. Because of its potential health effects, it has been classified as a probable human carcinogen. The Primary MCL for TCE in drinking water is 5 µg/L. Its presence in groundwater likely originated from improper disposal practices. If present in water, it can be removed easily by common treatment processes, including packed tower aeration or granular activated carbon.

TCE (**Figure 4.15**) was detected in nine WRD nested monitoring well locations in the Central Basin and in three nested well locations in the West Coast Basin. In the Central Basin, TCE concentrations ranged from below the detection limit (numerous wells) to 67 µg/L (Los Angeles #1 zone 5). No nested well contained a detectable TCE concentration in the Silverado aquifer. Eight locations (Los Angeles #1 zones 4 and 5, Huntington Park #1 zones 3 and 4, South Gate #1 zone 4, Bell Gardens #1 zones 5 and 6 Commerce #1 zone 5, Whittier #2 zone 5, Norwalk #2 zone 4, and Downey #1 zone 5) had detections of TCE in zones above the Silverado aquifer. The detections in Los

Angeles #1 zones 4 and 5 were above the MCL. At Whittier Narrows #1, TCE was detected in zone 3, below the Silverado aquifer.

In the West Coast Basin, TCE concentrations ranged from below the detection limit (numerous wells) to 35 µg/L (Hawthorne #1 zone 6). In the shallowest zone at PM-3 Madrid and the shallowest and deepest zones at Inglewood #1, TCE was detected below the MCL. In the shallowest zone of Hawthorne #1, TCE was detected above the MCL.

Figure 4.16 presents CDPH water quality data for TCE in production wells across the CWCB during WYs 2005-2008. A total of 280 wells were tested for TCE. The data show that over the past three years, TCE has been detected in 51 production wells in the Central Basin. Nine detections were above the MCL. Wells impacted by TCE are located in the northern portion of the Central Basin, within or near the Montebello and Los Angeles Forebay areas. In the West Coast Basin, TCE was not detected in any production wells.

4.10 TETRACHLOROETHYLENE (PCE)

PCE (also known as tetrachloroethylene, perc, perclene, and perchlor) is a solvent used commonly in the dry cleaning industry, as well as in metal degreasing and textile processing. Like TCE, PCE is a probable human carcinogen. The Primary MCL for PCE in drinking water is 5 µg/L. Through improper disposal practices, PCE has contaminated many groundwater basins. PCE can be removed using packed tower aeration or granular activated carbon treatment.

During WY 2007-2008, PCE (**Figure 4.17**) was detected at 10 nested well locations in the Central Basin, with concentrations ranging from below the detection limit (numerous wells) to 5.9 µg/L (Pico #2 zone 3). Generally, PCE detected in nested wells occurred within or near the vicinity of the Montebello and Los Angeles Forebays. At South Gate #1, PCE was detected above the MCL above the Silverado aquifer. At Downey #1 and South Gate #1, PCE was detected below the MCL in the Silverado aquifer. Whittier

Narrows #1 shows PCE detected below the MCL in zone 3, below the Silverado aquifer. At Huntington Park #1, PCE was detected below the MCL in zone 4, above the Silverado aquifer. At Los Angeles #1, PCE was detected below the MCL in the two shallowest zones, both above the Silverado aquifer. At Norwalk #2 and Bell Gardens #1, PCE was detected below the MCL above the Silverado aquifer. At Pico #2, PCE was detected in 3 zones below the Silverado aquifer; above the MCL in zone 3 and below the MCL in zones 1 and 2. In the West Coast Basin, PCE was not detected in any of the nested monitoring wells.

Figure 4.18 presents CDPH water quality data for PCE in production wells across the CWCB during WYs 2005-2008. In the Central Basin, PCE was detected in 55 production wells. Ten of the 55 wells exceeded the MCL for PCE. Production wells with detectable PCE are primarily located within the vicinity of the Los Angeles and Montebello Forebays and extend out into the west-central portion of the Central Basin. PCE was not detected in any production wells tested in the West Coast Basin.

4.11 SPECIAL INTEREST CONSTITUENTS

Several additional water quality constituents have been monitored and studied by WRD to address emerging water quality issues related to hazardous waste contamination, recycled water use in the CWCB, and proposed revisions to water quality regulations. Current special interest constituents include arsenic, chromium, total organic carbon (TOC), and apparent color. Studies have included focused sampling of WRD nested monitoring wells and evaluation of CDPH Title 22 program data for the special interest constituents. The following subsections present the data collected for each of these constituents.

4.11.1 Arsenic

The Safe Drinking Water Act, as amended in 1996, required the United States Environmental Protection Agency (EPA) to revise the existing drinking water standard for arsenic, which they have done. The Federal MCL for arsenic is 10 µg/L, effective as of January 2006. The CDPH established the California MCL at 10 µg/L on November 28, 2008, equal to the Federal MCL.

Arsenic is an element that occurs naturally in the earth's crust and accordingly, there are natural sources of exposure. Natural sources of arsenic include weathering and erosion of rocks, deposition of arsenic in water bodies, and uptake of the metal by animals and plants. Consumption of food and water are the major sources of arsenic exposure for the majority of U.S. citizens. Over 90% of commercial arsenic is used as a wood preservative in the form of chromate copper arsenate to prevent dry rot, fungi, molds, termites, and other pests. People may also be exposed from industrial applications, such as semiconductor manufacturing, petroleum refining, animal feed additives, and herbicides. Arsenic is classified as a known human carcinogen by the EPA, and also causes other health effects, such as high blood pressure and diabetes.

Figure 4.19 presents arsenic water quality data for WRD nested monitoring wells during WY 2007-2008. In the Central Basin, arsenic concentrations ranged from non-detectable (numerous wells) to 36 µg/L in the (shallowest zone at Cerritos #1 zone 6). Arsenic concentrations greater than the MCL in the Central Basin were found at 8 out of 26 nested wells. Arsenic concentrations exceeding the MCL in the Silverado aquifer zones were found at Cerritos #1 and South Gate #1.

In the West Coast Basin, arsenic was detected above the MCL in the Silverado aquifer at one nested location, PM-4 Mariner zone 2, at 11 µg/L. The deepest zone in Gardena #1, below the Silverado aquifer, had an arsenic concentration of 100 µg/L, exceeding the MCL.

Figure 4.20 presents CDPH water quality data for arsenic in production wells across the CWCB during WYs 2005-2008. Eleven production wells in the Central Basin contained arsenic concentrations above the revised MCL. Arsenic did not exceed the MCL in any West Coast Basin production wells.

4.11.2 Chromium

Chromium is a metal used in the manufacture of stainless steel, metal plating operations, and other applications. Chromium has the potential to contaminate groundwater from spills and leaking tanks. It comes in two basic forms: chromium 3 (trivalent) and chromium 6 (hexavalent) ions. Chromium 3 is a basic nutrient that is quite commonly ingested by adults in doses of 50 to 200 µg/day. Chromium 6 is an oxidized form of chromium 3 that is a known carcinogen when inhaled and is a concern for occupational exposures in chromium plating and other related industries. It is unclear if ingestion of chromium 6 is harmful. The reduction of chromium 6 to chromium 3 that occurs from gastric juices during digestion is a key factor in determining whether the ingested chromium 6 is carcinogenic at a specific concentration.

Currently the MCL for total (all forms of) chromium is 50 µg/L. In February 1999, OEHHA established a Public Health Goal for total chromium at 2.5 µg/L, based on a health protective level for chromium 6 at 0.2 µg/L and the assumption that 7% of total chromium in drinking water is chromium 6. In November 2001, OEHHA announced that it rescinded this PHG. A scientific panel convened by the University of California, known as the Chromate Toxicity Review Committee, reviewed the study that OEHHA originally used as a basis for their PHG and concluded that the data were flawed and should not be used for health risk assessment. At the request of both CDPH and OEHHA, the National Toxicological Program of the National Institute of Environmental Health Sciences is performing a long-term health effects study on rodents to evaluate the potential carcinogenicity of ingested chromium 6. CDPH has added chromium 6 to its list of Unregulated Chemicals Requiring Monitoring (UCRM) in production wells.

Health and Safety Code Section 116365.5 required CDPH to adopt a chromium 6 MCL by January 1, 2004. However, OEHHA has not yet issued a new draft chromium 6 PHG, and therefore, CDPH has not proceeded with the regulatory process to establish an MCL.

Figure 4.21 presents total chromium water quality data for WRD nested monitoring wells. In the Central Basin, only the two uppermost zones in the Los Angeles #1 nested well exceeded the MCL of 50 μg/L for total chromium. Trace levels of total chromium were detected in one or more zones of all but four Central Basin nested wells. Total chromium was not detected above the MCL in the West Coast Basin. Trace levels of total chromium were detected in 11 out of 15 nested wells in the West Coast Basin.

Figure 4.22 presents CDPH water quality data for total chromium in production wells across the CWCB during WYs 2005-2008. No production wells in the Central Basin exceeded the MCL for total chromium. In the majority of production wells sampled in the Central Basin, total chromium was not detected. A total of 29 production wells in the Central Basin contained detectable total chromium below the MCL. Total chromium was detected in two of the production wells tested in the West Coast Basin.

4.11.3 Total Organic Carbon

Total organic carbon (TOC) is the broadest measure of the concentration of organic molecules in water and is of interest because it gives an indication of the potential formation of disinfectant byproducts, some of which are harmful. TOC can be naturally occurring, result from domestic and commercial activities, or can be a product of wastewater treatment processes. While there is no MCL established for TOC, regulators are generally concerned with TOC of wastewater origin as a measurable component of recycled water. Typically, wastewater that has been subjected to effective secondary treatment contains 5 to 8 mg/L of TOC. Advanced treatment can effectively lower the TOC concentration to less than 1 mg/L. Likewise, percolating water through the soil has also been proven to be an effective method in reducing TOC in reclaimed water. However, TOC in groundwater may also occur naturally and have no relation to wastewater. Studies indicate that the TOC measured in groundwater samples in both nested monitoring wells and production wells in the CWCB naturally occurs in the aquifer systems and was derived from organic material and decaying vegetation either deposited with the aquifer sediments as the basins were filling or originally contained in imported water (AWWA, 2001).

Figure 4.23 presents TOC water quality data for WRD nested monitoring wells during

WY 2007-2008. In the Central Basin, TOC was detected in multiple zones of all 26 nested monitoring wells. Where TOC is present, concentrations are typically below 1 mg/L and less frequently between 1 and 5 mg/L. The lower concentrations occur in the shallow and middle zones of the nested wells; higher concentrations of TOC are generally found in the deeper zones. Six wells in the Central Basin have zones with TOC greater than 5 mg/L, including the deepest 3 zones at Long Beach #6, the deepest zone at Long Beach #2, the deepest two zones at Inglewood #2, the deepest zone at Compton #2, the deepest zone at Whittier Narrows #1, and the deepest two zones sampled at Montebello #1. The deeper wells with TOC greater than 5 mg/L are likely to contain naturally occurring organic carbon, and not wastewater related organic carbon. In the West Coast Basin, TOC greater than 1 mg/L is present in one or more zones at all 15 nested monitoring wells tested, and at concentrations greater than 5 mg/L in one or more zones at 7 of the 15 West Coast Basin nested monitoring wells tested.

Figure 4.24 presents limited CDPH water quality data for TOC in production wells across the CWCB during WYs 2005-2008. During the three-year period, only 61 production wells were tested for TOC. Five of the 61 wells had TOC concentrations below the detection limit. Most of the wells had TOC detected at concentrations ranging from the detection limit to 5 mg/L and were not associated with any specific area.

4.11.4 Apparent Color

Apparent color in groundwater (colored groundwater) is not toxic or harmful. An MCL of 15 apparent color units (ACUs) has been established as an aesthetic standard. Colored groundwater results from colloidal organic particles suspended in the water that display colors ranging from pale yellow to a dark tea brown. There is an observed relationship between apparent color and TOC, especially in the higher concentration range. Colored groundwater can be treated and served, however treatment can be expensive.

Figure 4.25 presents apparent color water quality data for WRD nested monitoring wells in the CWCB during WY 2007-2008. Apparent color is present above the MCL in the deepest zones of 15 out of 26 nested monitoring wells. Several nested wells have apparent color above the MCL in intermediate zones. Apparent color does not exceed the MCL in the uppermost zone in any nested monitoring wells tested. This relationship between apparent color and depth, along with the relationship between color and TOC, is probably due to an increase in the content of natural organic matter in the deeper sediments of the basins.

Figure 4.26 presents CDPH water quality data for apparent color in production wells across the CWCB during WYs 2005-2008. These data indicate that colored groundwater is not widespread, but only a localized problem in the basins. Most production wells tested below the MCL. Locally in the Long Beach, Inglewood, Commerce/Bell Gardens, and Los Angeles areas, several wells did test above the MCL for apparent color. Some water purveyors in these areas have treatment systems operating to remove color from the groundwater.

4.11.5 MTBE

MTBE is a synthetic chemical added to gasoline to improve air quality as required by the Federal Clean Air Act. Limited quantities have been used in gasoline in California since the 1970s. In 1992, oil companies began using it extensively in California to meet reformulated gas requirements of the State Air Resources Board. Its use enables gasoline to burn more completely. However, MTBE has been detected in groundwater and surface water throughout California from sources including leaking underground storage tanks, pipelines, and spills, and from emissions of boat engines into lakes and reservoirs. MTBE is a potential human carcinogen. Effective May 17, 2000, a primary MCL of 13 μg/L was established by CDPH. A secondary standard of 5 μg/L was established in response to taste and odor concerns. Effective Janaury 1, 2004, the use of MTBE was banned.

Figure 4.27 presents MTBE water quality data for WRD nested monitoring wells during WY 2007-2008. MTBE was not detected in any of the WRD nested monitoring wells. MTBE will continue to be monitored in the future in WRD nested monitoring wells.

Figure 4.28 presents CDPH water quality data for MTBE in production wells across the CWCB during WYs 2005-2008. MTBE was not detected in any production wells in the CWCB during the reporting period.

SECTION 5
SUMMARY OF FINDINGS

This Regional Groundwater Monitoring Report was prepared by WRD to provide a comprehensive review of groundwater conditions in the CWCB during WY 2007-2008. A summary of findings is presented below.

- Artificial replenishment activities combined with natural replenishment and controlled pumping have ensured a sustainable, reliable supply of groundwater in the CWCB. Artificial replenishment water sources used by WRD include imported water from the MWD, recycled water from the CSDLAC, and recycled water with advanced treatment from WBMWD, the City of Los Angeles, and WRD's Leo J. Vander Lans water treatment facility.
- At the Montebello Forebay, imported water was not available to WRD for replenishment during WY 2007-2008. A total of 39,767 AF of recycled water was conserved for spreading in the Montebello Forebay. A total of 12,880 AF of imported water was injected to the seawater barriers. A total of 15,165 AF of recycled water was purchased for injection into the seawater barriers.
- Groundwater production in the CWCB was 244,732 AF for Water Year 2007-2008. This amount is less than the adjudicated amount of 281,835 AF.
- Groundwater levels (heads) were monitored continuously in the CWCB during the Water Year. The WRD nested monitoring wells show clear, significant differences in groundwater elevations between the various aquifers. The water level differences in the WRD nested monitoring wells reflect both hydrogeologic and pumping conditions in the CWCB. Vertical head differences between 1 and 40 feet occur between zones above and within the producing zones. The greatest head differences between aquifers tend to occur in the Long Beach area of the Central Basin and the Gardena and Carson areas of the West Coast Basin, while the smallest differences occur in the Montebello Forebay recharge area, and the Torrance area, which has thick, merged aquifers.

- Basinwide hydrographs and groundwater elevations measured in nested monitoring wells and key production wells indicate significant decreases in water levels over most of the Central Basin, up to 15 feet in Montebello Forebay. Water levels were generally stable to slightly decreasing in the West Coast Basin during WY 2007-2008. On average, water levels decreased in the unconfined Montebello Forebay area about 10 to 15 feet, but did not change substantially in the Los Angeles Forebay during WY 2007-2008. Elsewhere in the confined portions of the deeper aquifers of the basin, water levels generally decreased 1 to 10 feet during WY 2007-2008. Overall, the change in groundwater storage for the CWCB was calculated at a loss of approximately 44,000 AF.
- The water quality associated with key constituents in untreated imported water used at the Montebello Forebay Spreading Grounds remains good. Average TDS, hardness, iron, and manganese concentrations in imported water (either 100% State Project Water or blended State Project/Colorado River Water) used for recharge, comply with their respective MCLs. Meanwhile, TCE and PCE were not detected in either water source.
- The water quality associated with key constituents in recycled water used at the Montebello Forebay Spreading Grounds and barrier injection wells also remains in compliance and is monitored regularly to ensure its safe use.
- Stormwater samples are occasionally collected and analyzed for water quality parameters. The most recent available data show that average stormwater TDS concentrations and hardness are lower than most other sources of replenishment water and other constituent concentrations make stormwater a good replenishment source.
- Based on the data obtained from the WRD nested monitoring wells during WY 2007-2008, the water quality associated with key constituents in groundwater differs both vertically between aquifers and horizontally across the CWCB.
- TDS concentrations for WRD wells located in the Central Basin are relatively low, while TDS concentrations for WRD wells located in the West Coast Basin are elevated in portions of the basin, primarily the Torrance and Dominguez Gap areas. The elevated TDS concentrations may be caused by seawater intrusion or connate

brines, or possibly oil field brines. During this reporting period, concentrations in the Central Basin ranged from 168 mg/L to 2,730 mg/L and averaged 531 mg/L. In the West Coast Basin TDS concentrations in nested monitoring wells ranged from 192 mg/L to 11,900 mg/L, and averaged 1,090 mg/L.

- Iron concentrations are potentially problematic in portions of the CWCB. During the current reporting period, concentrations in the Central Basin ranged from non-detectable to 9.6 mg/L, and in the West Coast Basin from non-detectable to 0.95 mg/L. The Secondary MCL for iron is 0.3 mg/L. Sources of the localized high iron concentrations have not yet been identified, but are possibly naturally occurring.
- Similar to the iron concentrations, manganese concentrations exceed the MCL (50 µg/L) in a large number of nested monitoring wells and production wells across the CWCB. During the current reporting period, nested well concentrations in the Central Basin ranged from non-detectable to 630 µg/L, and in the West Coast Basin from non-detectable to 1,200 µg/L. Similar to iron, sources of the localized high manganese concentrations have not yet been identified, but are possibly naturally occurring.
- Nitrate (as nitrogen) concentrations in WRD nested monitoring wells in the Central Basin ranged from non-detectable to 14 mg/L, and in the West Coast Basin from non-detectable to 21 mg/L. Concentrations approaching or exceeding the MCL (10 mg/L) tend to be limited to the uppermost zone at a particular nested well and are likely due to localized infiltration and leaching. Concentrations above the MCL were not observed in the Silverado aquifer. CDPH data indicates that none of the CWCB production wells tested for nitrate above the MCL during WYs 2005-2008.
- TCE was not detected in the Silverado Aquifer in any of the WRD wells sampled. During the current reporting period, concentrations in nested monitoring wells in the Central Basin ranged from non-detectable to 67 µg/L, and in the West Coast Basin from non-detectable to 35 µg/L. CDPH data indicate that TCE was detected in 51 production wells in the Central Basin during WYs 2005-2008; 9 out of the 51 detections exceed the MCL for TCE. In the West Coast Basin, TCE was not detected above the MCL in any production wells.
- PCE was detected in 10 WRD nested monitoring wells in the Central Basin and none

in the West Coast Basin. PCE was detected in the Silverado aquifer in two WRD nested wells. During the current reporting period, concentrations in the Central Basin ranged from non-detectable to 5.9 µg/L. CDPH data indicate that PCE was detected in 55 production wells in the Central Basin during WYs 2005-2008. A total of 10 out of the 55 detections exceeded the MCL for PCE. PCE was not detected in any of the West Coast Basin production wells.

- EPA and CDPH revised the arsenic standard for drinking water, decreasing the MCL of 50 µg/L to 10 µg/L. Enforcement of the Federal MCL began in 2006. WRD nested monitoring wells indicate that arsenic concentrations in the south-central and especially near the eastern side of the Central Basin can exceed the State MCL. Eleven production wells, all in this portion of the Central Basin, have arsenic concentrations exceeding the MCL of 10 µg/L. Arsenic was not detected above the MCL in any of the West Coast Basin production wells.
- Chromium was detected above the MCL in groundwater samples from one WRD nested monitoring well. However, no production wells in the CWCB exceeded the MCL. Additional monitoring wells and production wells contained detectable chromium concentrations below the MCL.
- Total organic carbon and apparent color are being monitored and studied in relation to the use of recycled water for artificial recharge and future development of potential groundwater production from deeper portions of the CWCB that have typically been utilized in the past. Lower concentrations were found in shallow and moderate zones, and higher concentrations (>5 mg/L) were found in deeper zones.
- As shown by the data presented herein, groundwater in the CWCB is of generally good quality and is suitable for use by the pumpers in the District, the stakeholders, and the public. Localized areas of marginal to poor water quality are either currently receiving or may require treatment prior to being used as a potable source.

SECTION 6
FUTURE ACTIVITIES

WRD will continue to update and augment its Regional Groundwater Monitoring Program to best serve the needs of the District, the pumpers, and the public. Some of the activities planned or which utilize data generated from this program for the upcoming WY 2008-2009 are listed below.

- WRD will continue to maximize recycled water use at the Montebello Forebay Spreading Grounds without exceeding regulatory limits; recycled water is a high quality, reliable, and relatively low-cost replenishment water source. Due to the anticipated unreliability of imported water deliveries from MWD, WRD is developing the Water Independence Now (WIN) initiative, which includes increasing the safe use of recycled water for groundwater recharge and reducing the reliance on imported water supplies.
- WRD will continue to maximize recycled water use at the West Coast Barrier and will promote maximum permitted recycled water injection at the Dominguez Gap and Alamitos Gap Barriers. Extensive monitoring of these recycled water injection projects will be performed to comply with applicable permit conditions and to track subsurface movement of the recycled water.
- WRD will continue to monitor the quality of replenishment water sources to ensure the CWCB are being recharged with high-quality water.
- Total injection quantities at the Dominguez Gap Barrier have increased in the past several years as additional barrier wells came on-line and recycled water was blended to increase the effectiveness to prevent sea water intrusion. Injection quantities at the West Coast Barrier have increased over the past two years overcoming operational issues along with utilization of nearly 75% recycled water. The Alamitos Gap Barrier and the Dominguez Gap Barrier are expected to fully utilize the permitted 50% recycled water over the coming year. WRD will work with the pumpers over the next year to identify solutions to reduce the injection water demands. Basin management

alternatives including Aquifer Storage and Recovery (ASR) projects, pipeline construction, and other conjunctive use projects and programs will be explored to address future groundwater resource management challenges.

- WRD continues refining the regional understanding of groundwater occurrence, movement, and quality. Water levels will be recorded using automatic dataloggers to monitor groundwater elevation differences throughout the year.
- WRD is currently expanding its network of nested monitoring wells to get a better understanding of groundwater levels and groundwater quality. Four new locations, one in the Los Angeles Forebay, one between the Los Angeles and Montebello Forebays, and two in the saline plume of the West Coast Basin, will be completed in WY 2008-2009. Each year, WRD evaluates the need to fill data gaps in the water level data, water quality data, and hydrogeologic conceptual model with additional geologic data provided from drilling, construction, and monitoring of nested wells.
- WRD will continue to sample groundwater from nested monitoring wells, and analyze the samples for general water quality constituents. In addition, WRD will continue to focus on constituents of interest to WRD, the pumpers, and other stakeholders such as TCE, PCE, arsenic, fuel oxygenates, TOC, and apparent color. New chemicals of concern which have not been comprehensively monitored include pesticides, n-nitrosodimethylamine (NDMA), 1,4-dioxane, pharmaceuticals, and others. Constituents studied in the past, including chromium 6 and perchlorate, may also warrant revisiting in the future.
- WRD staff will be working on refining the hydrogeologic conceptual model of the CWCB using data from the RGWMP and other data to improve the framework for understanding the dynamics of the groundwater system and use as a planning tool.
- WRD will continue efforts under its Groundwater Contamination Prevention Program in order to minimize or eliminate threats to groundwater supplies. The Groundwater Contamination Prevention Program includes several ongoing efforts, including the Central and West Coast Basin Groundwater Contamination Forum with key stakeholders including EPA, DTSC, LARWQCB, CDPH, USGS, and various cities. Stakeholders meet regularly (meetings are held 3 to 4 times per year at WRD) and share data on contaminated groundwater sites within the District. WRD has acted as

the meeting coordinator and data repository/distributor, helping stakeholders to characterize contamination, and developing optimal methods for addressing contamination. WRD has developed a list of high-priority contaminated groundwater sites within the District. Currently, the list includes approximately 47 sites across the CWCB.

- In 2003, WRD developed a scope of work with the Los Angeles County Department of Health Services to clarify the status of 217 potentially abandoned (a.k.a., "unknown status") wells located within District boundaries, as identified through researching WRD's groundwater production database. WRD was able to reduce the number of "unknown status" wells from 217 to 20, and most of the remaining 20 are suspected to have been paved over during development of industrial and residential neighborhoods.
- WRD will will continue to be proactively involved in the oversight of the most significant contaminated sites that threaten CWCB groundwater resources.
- WRD will continue to fund the Well-Head Treatment Program to address VOC impacted groundwater, especially by PCE and TCE in the CWCB.
- WRD will continue to use the data generated by the Regional Groundwater Monitoring Program along with WRD's advanced GIS capabilities to address current and upcoming issues related to water quality and groundwater replenishment in the Central and West Coast Basins.

SECTION 7
REFERENCES

American Water Works Association Research Foundation (AWWA), *Soil Aquifer treatment for Sustainable Water Reuse*, 2001.

Bookman-Edmonston Engineering, Inc., *Report on Program of Water Quality Monitoring*, January 1973.

California Department of Water Resources (DWR), *Bulletin No. 104: Planned Utilization of the Ground Water Basins of the Coastal Plain of Los Angeles County, Appendix A – Ground Water Geology*, 1961.

County Sanitation Districts of Los Angeles County (CSDLAC), *Montebello Forebay Groundwater Recharge Engineering Report*, November 1997.

County Sanitation Districts of Los Angeles County (CSDLAC), *Montebello Forebay Groundwater Recharge-WQCB order No. 91-100, Monitoring and Reporting Program No. 5728, Annual Monitoring Reports*, 2006.

Driscoll, Fletcher G, Ph.D., *Groundwater and Wells*, Johnson Filtration Systems, Inc. 1989.

Fetter, C.W., *Applied Hydrogeology, Third Edition*, Prentice-Hall, 1994.

Hem, John D., *Study and Interpretation of the Chemical Characteristics of Natural Water, Third Edition*, U.S. Geological Survey Water-Supply Paper 2254, 1992.

Mathany, Timothy M., Land, Michael, and Belitz, Kenneth, *Ground-Water Quality Data in the Coastal Los Angeles Basin Study Unit, 2006: Results from the California GAMA Program*, U.S. Geological Survey Data Series 387, 2006.

Mendenhall, W.D., 1905, *Development of underground waters in the central coastal plain region of southern California*: U.S. Geological Survey Water Supply Paper 137, 140p.

Metropolitan Water District of Southern California (MWD), *Annual Report to Member Agencies*, 2006.

Montgomery Watson, *Report for West Coast Basin Desalinization Feasibility/Siting Study*, February 1997.

Montgomery Watson, *West Coast Basin Plume Mitigation Study*, September 1992.

National Research Council, *Issues in Potable Reuse*, National Academy Press, 1998.

Reichard, Eric G.; Land, Michael; Crawford, Steven M.; Johnson, Tyler; Everett, Rhett; Kulshan, Trayle V.; Ponti, Daniel J.; Halford, Kieth J.;Johnson, Theodore A.; Paybins, Katherine S.; and Nishikawa, Tracey: *Geohydrology, Geochemistry, and Ground-Water Simulation-Optimization of the Central and West Coast Basins, Los Angeles County, California*, United States Geological Survey Water Resources Investigations Report 03-4065; Sacramento, California, 2003.

United States Environmental Protection Agency (EPA), *Whittier Narrows Operable Unit Feasibility Study Addendum*, October 1998.

Water Replenishment District of Southern California (WRD), *Engineering Survey and Report*, 2008.

West Basin Municipal Water District, West Basin Water Reclamation Treatment Facility, Annual Report, 2006.

TABLES

Page Left Intentionally Blank

TABLE 1.1
CONSTRUCTION INFORMATION FOR WRD NESTED MONITORING WELLS

Well Name	Zone	WRD ID Number	Depth of Well (feet)	Top of Perforation (feet)	Bottom of Perforation (feet)	Aquifer Designation
Bell Gardens #1	1	101954	1795	1775	1795	Not Interpreted
	2	101955	1410	1390	1410	Not Interpreted
	3	101956	1110	1090	1110	Not Interpreted
	4	101957	875	855	875	Not Interpreted
	5	101958	575	555	575	Not Interpreted
	6	101959	390	370	390	Not Interpreted
Carson #1	1	100030	1010	990	1010	Sunnyside
	2	100031	760	740	760	Silverado
	3	100032	480	460	480	Lynwood
	4	100033	270	250	270	Gage
Carson #2	1	101787	1250	1230	1250	Sunnyside
	2	101788	870	850	870	Silverado
	3	101789	620	600	620	Silverado
	4	101790	470	450	470	Lynwood
	5	101791	250	230	250	Gage
Cerritos #1	1	100870	1215	1155	1175	Sunnyside
	2	100871	1020	1000	1020	Sunnyside
	3	100872	630	610	630	Lynwood
	4	100873	290	270	290	Gage
	5	100874	200	180	200	Artesia
	6	100875	135	125	135	Artesia
Cerritos #2	1	101781	1470	1350	1370	Sunnyside
	2	101782	935	915	935	Silverado
	3	101783	760	740	760	Silverado
	4	101784	510	490	510	Jefferson
	5	101785	370	350	370	Gage
	6	101786	170	150	170	Gaspur
Chandler #3B	1	100082	363	341	363	Gage/Lynwood/Silverado
Chandler #3A	2	100083	192	165	192	Gage/Lynwood/Silverado
Commerce #1	1	100881	1390	1330	1390	Pico Formation
	2	100882	960	940	960	Sunnyside
	3	100883	780	760	780	Sunnyside
	4	100884	590	570	590	Silverado
	5	100885	345	325	345	Hollydale
	6	100886	225	205	225	Exposition/Gage
Compton #1	1	101809	1410	1370	1390	Sunnyside
	2	101810	1170	1150	1170	Sunnyside
	3	101811	820	800	820	Silverado
	4	101812	480	460	480	Hollydale
	5	101813	325	305	325	Gage
Compton #2	1	101948	1495	1475	1495	Sunnyside
	2	101949	850	830	850	Sunnyside
	3	101950	605	585	605	Silverado
	4	101951	400	380	400	Hollydale
	5	101952	315	295	315	Gage
	6	101953	170	150	170	Exposition

TABLE 1.1
CONSTRUCTION INFORMATION FOR WRD NESTED MONITORING WELLS

Well Name	Zone	WRD ID Number	Depth of Well (feet)	Top of Perforation (feet)	Bottom of Perforation (feet)	Aquifer Designation
Downey #1	1	100010	1190	1170	1190	Sunnyside
	2	100011	960	940	960	Silverado
	3	100012	600	580	600	Silverado
	4	100013	390	370	390	Hollydale/Jefferson
	5	100014	270	250	270	Gage
	6	100015	110	90	110	Gaspur
Gardena #1	1	100020	990	970	990	Sunnyside
	2	100021	465	445	465	Silverado
	3	100022	365	345	365	Lynwood
	4	100023	140	120	140	Gage
Gardena #2	1	101804	1335	1275	1335	Sunnyside
	2	101805	790	770	790	Silverado
	3	101806	630	610	630	Silverado
	4	101807	360	340	360	Lynwood
	5	101808	255	235	255	Gardena
Hawthorne #1	1	100887	990	910	950	Sunnyside
	2	100888	730	710	730	Silverado
	3	100889	540	520	540	Silverado
	4	100890	420	400	420	Silverado
	5	100891	260	240	260	Lynwood
	6	100892	130	110	130	Gage
Huntington Park #1	1	100005	910	890	910	Silverado
	2	100006	710	690	710	Jefferson
	3	100007	440	420	440	Gage
	4	100008	295	275	295	Exposition
	5	100009	134	114	134	Gaspur
Inglewood #1	1	100091	1400	1380	1400	Pico Formation
	2	100092	Abandoned Well			
	3	100093	450	430	450	Silverado
	4	100094	300	280	300	Lynwood
	5	100095	170	150	170	Gage
Inglewood #2	1	100824	860	800	840	Pico Formation
	2	100825	470	450	470	Sunnyside
	3	100826	350	330	350	Silverado
	4	100827	245	225	245	Lynwood
Lakewood #1	1	100024	1009	989	1009	Sunnyside
	2	100025	660	640	660	Silverado
	3	100026	470	450	470	Lynwood
	4	100027	300	280	300	Gage
	5	100028	160	140	160	Artesia
	6	100029	90	70	90	Bellflower
La Mirada #1	1	100876	1150	1130	1150	Sunnyside
	2	100877	985	965	985	Silverado
	3	100878	710	690	710	Lynwood
	4	100879	490	470	490	Jefferson
	5	100880	245	225	245	Gage
Lomita #1	1	100818	1340	1240	1260	Sunnyside
	2	100819	720	700	720	Sunnyside
	3	100820	570	550	570	Silverado
	4	100821	420	400	420	Silverado
	5	100822	240	220	240	Gage
	6	100823	120	100	120	Gage

TABLE 1.1
CONSTRUCTION INFORMATION FOR WRD NESTED MONITORING WELLS

Well Name	Zone	WRD ID Number	Depth of Well (feet)	Top of Perforation (feet)	Bottom of Perforation (feet)	Aquifer Designation
Long Beach #1	1	100920	1470	1430	1450	Sunnyside
	2	100921	1250	1230	1250	Sunnyside
	3	100922	990	970	990	Silverado
	4	100923	619	599	619	Lynwood
	5	100924	420	400	420	Jefferson
	6	100925	175	155	175	Gage
Long Beach #2	1	101740	1090	970	990	Sunnyside
	2	101741	740	720	740	Sunnyside
	3	101742	470	450	470	Silverado
	4	101743	300	280	300	Lynwood
	5	101744	180	160	180	Gage
	6	101745	115	95	115	Gaspur
Long Beach #3	1	101751	1390	1350	1390	Sunnyside
	2	101752	1017	997	1017	Silverado
	3	101753	690	670	690	Silverado
	4	101754	550	530	550	Silverado
	5	101755	430	410	430	Lynwood
Long Beach #4	1	101759	1380	1200	1220	Pico Formation
	2	101760	820	800	820	Sunnyside
Long Beach #6	1	101792	1530	1490	1510	Pico Formation
	2	101793	950	930	950	Sunnyside
	3	101794	760	740	760	Sunnyside
	4	101795	500	480	500	Silverado
	5	101796	400	380	400	Lynwood
	6	101797	240	220	240	Gage
Long Beach #8	1	101819	1495	1435	1455	Pico Formation
	2	101820	1040	1020	1040	Sunnyside
	3	101821	800	780	800	Silverado
	4	101822	655	635	655	Silverado
	5	101823	435	415	435	Lynwood
	6	101824	185	165	185	Gage
Los Angeles #1	1	100926	1370	1350	1370	Pico Formation
	2	100927	1100	1080	1100	Sunnyside
	3	100928	940	920	940	Silverado
	4	100929	660	640	660	Lynwood
	5	100930	370	350	370	Gage
Los Angeles #2	1	102003	1370	1330	1370	Not Interpreted
	2	102004	730	710	730	Not Interpreted
	3	102005	525	505	525	Not Interpreted
	4	102006	430	410	430	Not Interpreted
	5	102007	265	245	265	Not Interpreted
	6	102008	155	135	155	Not Interpreted
Montebello #1	1	101770	980	900	960	Pico Formation
	2	101771	710	690	710	Sunnyside
	3	101772	520	500	520	Silverado
	4	101773	390	370	390	Lynwood
	5	101774	230	210	230	Gage
	6	101775	110	90	110	Exposition

TABLE 1.1
CONSTRUCTION INFORMATION FOR WRD NESTED MONITORING WELLS

Well Name	Zone	WRD ID Number	Depth of Well (feet)	Top of Perforation (feet)	Bottom of Perforation (feet)	Aquifer Designation
Norwalk #1	1	101814	1420	1400	1420	Sunnyside
	2	101815	1010	990	1010	Silverado
	3	101816	740	720	740	Lynwood
	4	101817	450	430	450	Jefferson
	5	101818	240	220	240	Gage
Norwalk #2	1	101942	1480	1460	1480	Not Interpreted
	2	101943	1280	1260	1280	Not Interpreted
	3	101944	980	960	980	Not Interpreted
	4	101945	820	800	820	Not Interpreted
	5	101946	500	480	500	Not Interpreted
	6	101947	256	236	256	Not Interpreted
Pico #1	1	100001	900	860	900	Pico Formation
	2	100002	480	460	480	Silverado
	3	100003	400	380	400	Silverado
	4	100004	190	170	190	Gardena
Pico #2	1	100085	1200	1180	1200	Sunnyside
	2	100086	850	830	850	Sunnyside
	3	100087	580	560	580	Sunnyside
	4	100088	340	320	340	Silverado
	5	100089	255	235	255	Lynwood
	6	100090	120	100	120	Gaspur
PM-1 Columbia	1	100042	600	555	595	Sunnyside
	2	100043	505	460	500	Silverado
	3	100044	285	240	280	Lynwood
	4	100045	205	160	200	Gage
PM-3 Madrid	1	100034	685	640	680	Sunnyside
	2	100035	525	480	520	Silverado
	3	100036	285	240	280	Lynwood
	4	100037	190	145	185	Gage
PM-4 Mariner	1	100038	715	670	710	Sunnyside
	2	100039	545	500	540	Silverado
	3	100040	385	340	380	Lynwood
	4	100041	245	200	240	Lynwood
Rio Hondo #1	1	100064	1150	1110	1130	Sunnyside
	2	100065	930	910	930	Sunnyside
	3	100066	730	710	730	Sunnyside
	4	100067	450	430	450	Silverado
	5	100068	300	280	300	Lynwood
	6	100069	160	140	160	Gardena
South Gate #1	1	100893	1460	1440	1460	Pico Formation
	2	100894	1340	1320	1340	Sunnyside
	3	100895	930	910	930	Silverado
	4	100896	585	565	585	Lynwood
	5	100897	250	220	240	Exposition
Westchester #1	1	101776	860	740	760	Pico Formation
	2	101777	580	560	580	Sunnyside
	3	101778	475	455	475	Silverado
	4	101779	330	310	330	Lynwood
	5	101780	235	215	235	Gage

TABLE 1.1
CONSTRUCTION INFORMATION FOR WRD NESTED MONITORING WELLS

Well Name	Zone	WRD ID Number	Depth of Well (feet)	Top of Perforation (feet)	Bottom of Perforation (feet)	Aquifer Designation
Whittier #1	1	101735	1298	1180	1200	Sunnyside
	2	101736	940	920	940	Sunnyside
	3	101737	620	600	620	Silverado
	4	101738	470	450	470	Lynwood
	5	101739	220	200	220	Gage
Whittier #2	1	101936	1390	1370	1390	Sunnyside
	2	101937	1110	1090	1110	Sunnyside
	3	101938	675	655	675	Silverado
	4	101939	445	425	445	Silverado
	5	101940	335	315	335	Lynwood
	6	101941	170	150	170	Gardena
Whittier Narrows #1	1	100046	769	749	769	Sunnyside
	2	100047	769	609.5	629	Sunnyside
	3	100048	769	462.5	482.5	Sunnyside
	4	100049	769	392.5	402	Silverado
	5	100050	769	334	343.5	Silverado
	6	100051	769	272.5	282.5	Lynwood
	7	100052	769	233.5	243	Jefferson
	8	100053	769	163	173	Gardena
	9	100054	769	95	104.5	Gaspur
Willowbrook #1	1	100016	905	885	905	Sunnyside
	2	100017	520	500	520	Silverado
	3	100018	380	360	380	Lynwood
	4	100019	220	200	220	Gage
Wilmington #1	1	100070	1040	915	935	Sunnyside
	2	100071	800	780	800	Sunnyside
	3	100072	570	550	570	Silverado
	4	100073	245	225	245	Lynwood
	5	100074	140	120	140	Gage
Wilmington #2	1	100075	1030	950	970	Sunnyside
	2	100076	775	755	775	Silverado
	3	100077	560	540	560	Lynwood
	4	100078	410	390	410	Lynwood
	5	100079	140	120	140	Gage

TABLE 2.1
SUMMARY OF SPREADING OPERATIONS AT MONTEBELLO FOREBAY
(Acre-feet)

Water Year	Rio Hondo (Includes Spreading Grounds & Whittier Narrows Reservoir)				San Gabriel (Includes Unlined River & Spreading Grounds)				Total Recharge			
	Imported	Recycled	Local	Total	Imported	Recycled	Local	Total	Imported	Recycled	Local	Total
1957/58	64,026	-	41,153	105,179	26,644	-	46,405	73,049	90,670		87,558	178,228
1958/59	22,602	-	15,772	38,374	24,338	-	16,015	40,353	46,940		31,787	78,727
1959/60	30,214	-	12,398	42,612	32,227	-	7,666	39,893	62,441		20,064	82,505
1960/61	61,853	-	4,264	66,117	51,090	-	4,854	55,944	112,943		9,118	122,061
1961/62	97,075	-	19,622	116,697	77,183	-	19,926	97,109	174,258		39,548	213,806
1962/63	29,218	8,898	9,159	47,275	38,798	-	5,406	44,204	68,016	8,898	14,565	91,479
1963/64	44,366	4,758	6,013	55,137	40,150	4,145	3,979	48,274	84,516	8,903	9,992	103,411
1964/65	70,394	2,501	8,616	81,511	69,995	4,867	4,481	79,343	140,389	7,368	13,097	160,854
1965/66	62,067	9,984	31,317	103,368	32,125	3,129	14,437	49,691	94,192	13,113	45,754	153,059
1966/67	46,322	14,117	37,428	97,867	20,813	2,106	22,392	45,311	67,135	16,223	59,820	143,178
1967/68	66,501	16,299	27,885	110,685	12,402	1,976	11,875	26,253	78,903	18,275	39,760	136,938
1968/69	12,442	6,105	69,055	87,602	4,895	7,772	50,340	63,007	17,337	13,877	119,395	150,609
1969/70	25,800	13,475	24,670	63,945	35,164	3,682	28,247	67,093	60,964	17,157	52,917	131,038
1970/71	83,604	22,256	48,736	154,596	42,422	16,734	40,778	99,934	126,026	38,990	89,514	254,530
1971/72	15,413	12,584	10,962	38,959	14,077	4,959	6,726	25,762	29,490	17,543	17,688	64,721
1972/73	47,712	12,238	33,061	93,011	32,823	9,767	12,016	54,606	80,535	22,005	45,077	147,617
1973/74	45,848	10,876	20,627	77,351	34,271	10,516	8,544	53,331	80,119	21,392	29,171	130,682
1974/75	34,234	13,799	19,305	67,338	32,974	8,084	10,360	51,418	67,208	21,883	29,665	118,756
1975/76	18,202	11,158	14,310	43,670	19,611	10,297	7,763	37,671	37,813	21,455	22,073	81,341
1976/77	18,767	7,157	14,087	40,011	5,462	15,707	5,165	26,334	24,229	22,864	19,252	66,345
1977/78	22,716	9,442	72,350	104,508	11,249	9,938	74,967	96,154	33,965	19,380	147,317	200,662
1978/79	39,259	8,132	51,609	99,000	15,143	14,367	17,250	46,760	54,402	22,499	68,859	145,760
1979/80	13,061	9,833	67,067	89,961	6,602	14,549	39,753	60,904	19,663	24,382	106,820	150,865
1980/81	45,266	9,825	41,730	96,821	13,823	16,283	8,860	38,966	59,089	26,108	50,590	135,787
1981/82	20,496	10,291	39,647	70,434	11,239	19,143	8,283	38,665	31,735	29,434	47,930	109,099
1982/83	3,262	7,618	89,183	100,063	5,975	9,419	36,893	52,287	9,237	17,037	126,076	152,350
1983/84	20,594	10,608	42,043	73,245	912	17,123	18,667	36,702	21,506	27,731	60,710	109,947
1984/85	35,483	8,438	25,875	69,796	3,091	18,617	13,224	34,932	38,574	27,055	39,099	104,728
1985/86	8,599	10,324	53,136	72,059	10,918	14,988	13,830	39,736	19,517	25,312	66,966	111,795
1986/87	51,051	11,094	23,154	85,299	4,639	23,525	4,459	32,623	55,690	34,619	27,613	117,922
1987/88	18,429	15,513	27,943	61,885	6,529	24,678	22,125	53,332	24,958	40,191	50,068	115,217
1988/89	-	-	-	71,227	-	-	-	40,174	55,973	38,331	17,096	111,400
1989/90	-	-	-	83,683	-	-	-	42,000	66,186	50,109	9,388	125,683
1990/91	-	-	-	102,544	-	-	-	43,323	56,285	53,864	35,717	145,866
1991/92	-	-	-	182,796	-	-	-	43,567	43,103	46,903	136,357	226,363
1992/93	-	-	-	131,537	-	-	-	81,586	16,561	48,864	147,699	213,124
1993/94	-	-	-	90,751	-	-	-	39,537	20,411	53,981	55,896	130,288
1994/95	-	-	-	84,475	-	-	-	71,240	21,837	33,300	100,578	155,715
1995/96	14,062	27,366	49,211	90,639	3,899	26,496	13,709	44,104	17,961	53,862	62,920	134,743
1996/97	15,258	21,874	40,547	77,679	4,732	28,085	17,715	50,532	19,990	49,959	58,262	128,211
1997/98	953	17,423	64,126	82,502	0	19,594	32,580	52,174	953	37,017	96,706	134,676
1998/99	0	29,102	20,023	49,125	0	18,099	11,990	30,089	0	47,201	32,013	79,214
1999/00	-	-	-	65,234	-	-	-	43,681	45,037	43,271	20,607	108,915
2000/01	-	-	-	49,921	-	-	-	59,597	23,451	46,343	39,724	109,518
2001/02	-	-	-	72,874	-	-	-	47,597	41,269	60,598	18,605	120,471
2002/03	-	-	-	83,757	-	-	-	39,606	17,296	42,727	63,340	123,363
2003/04	-	-	-	64,399	-	-	-	38,512	27,522	44,925	30,464	102,911
2004/05	-	-	-	125,487	-	-	-	77,835	25,145	29,504	148,673	203,322
2005/06	-	-	-	86,228	-	-	-	49,400	33,230	42,022	60,376	135,628
2006/07	-	-	-	60,007	-	-	-	36,742	40,214	45,028	11,508	96,749
2007/08	-	-	-	60,206	-	-	-	35,589	982	39,767	55,047	95,795

Notes:

1) These amounts may differ from those shown in WRD's Annual Engineering Survey and Report (ESR). The ESR reflects only water that WRD purchased for replenishment. However, some of this water may percolate or evaporate in San Gabriel Valley before it reaches the spreading grounds. Other entities such as LACDPW or the Main San Gabriel Basin Watermaster may also purchase replenishment water that is spread and accounted for in the above table. Recycled water is also provided by CSDLAC's Pomona treatment plant and is not paid for by WRD. This table reflects water which was actually conserved in the spreading grounds as reported by LACDPW in monthly worksheets.

2) Data for shaded areas in the above table were not available from LACDPW. In recent years, only total system recharge volumes could be reported, not relative imported/recycled/local volumes. Corresponding local water rechage volumes were calculated by subtracting imported and reclaimed water volumes from the total volume.

TABLE 2.2
HISTORICAL QUANTITIES OF ARTIFICIAL REPLENISHMENT WATER AT SEAWATER INTRUSION BARRIERS
(Acre-Feet)

WATER YEAR	ALAMITOS BARRIER (a)							DOMINGUEZ GAP BARRIER			WEST COAST BASIN BARRIER			TOTAL
	WRD			OCWD			Total							
	Imported	Recycled	Total	Imported	Recycled	Total		Imported	Recycled	Total	Imported	Recycled	Total	
1952/53											1,140		1,140	1,140
1953/54											3,290		3,290	3,290
1954/55											2,740		2,740	2,740
1955/56											2,840		2,840	2,840
1956/57											3,590		3,590	3,590
1957/58											4,330		4,330	4,330
1958/59											3,700		3,700	3,700
1959/60											3,800		3,800	3,800
1960/61											4,480		4,480	4,480
1961/62											4,510		4,510	4,510
1962/63											4,200		4,200	4,200
1963/64											10,450		10,450	10,450
1964/65	2,760		2,760	200		200	2,960				33,020		33,020	35,980
1965/66	3,370		3,370	350		350	3,720				44,390		44,390	48,110
1966/67	3,390		3,390	490		490	3,880				43,060		43,060	46,940
1967/68	4,210		4,210	740		740	4,950				39,580		39,580	44,530
1968/69	4,310		4,310	950		950	5,260				36,420		36,420	41,680
1969/70	3,760		3,760	720		720	4,480				29,460		29,460	33,940
1970/71	3,310		3,310	822		822	4,132	848		848	16,520		16,520	21,500
1971/72	4,058		4,058	936		936	4,994	9,551		9,551	26,491		26,491	41,036
1972/73	4,298		4,298	883		883	5,181	8,468		8,468	28,149		28,149	41,798
1973/74	6,136		6,136	1,148		1,148	7,284	7,827		7,827	27,542		27,542	42,653
1974/75	4,028		4,028	658		658	4,686	4,713		4,713	24,109		24,109	33,508
1975/76	4,089		4,089	565		565	4,654	4,938		4,938	35,219		35,219	44,811
1976/77	4,891		4,891	885		885	5,776	9,276		9,276	34,260		34,260	49,312
1977/78	4,020		4,020	833		833	4,853	5,742		5,742	29,642		29,642	40,237
1978/79	4,219		4,219	898		898	5,117	5,665		5,665	23,718		23,718	34,500
1979/80	3,564		3,564	459		459	4,023	4,469		4,469	28,632		28,632	37,124
1980/81	3,938		3,938	524		524	4,462	3,552		3,552	26,345		26,345	34,359
1981/82	4,534		4,534	392		392	4,926	4,720		4,720	24,644		24,644	34,290
1982/83	3,268		3,268	1,946		1,946	5,214	6,023		6,023	33,954		33,954	45,191
1983/84	2,447		2,447	1,402		1,402	3,849	7,637		7,637	27,996		27,996	39,482
1984/85	3,401		3,401	1,444		1,444	4,845	7,447		7,447	25,209		25,209	37,501
1985/86	3,415		3,415	1,863		1,863	5,278	6,183		6,183	20,226		20,226	31,687
1986/87	4,170		4,170	2,887		2,887	7,057	6,230		6,230	26,146		26,146	39,433
1987/88	3,993		3,993	2,173		2,173	6,166	7,053		7,053	24,266		24,266	37,485
1988/89	3,902		3,902	1,674		1,674	5,576	5,223		5,223	22,734		22,734	33,533
1989/90	4,111		4,111	1,929		1,929	6,040	5,737		5,737	20,281		20,281	32,058
1990/91	4,095		4,095	1,818		1,818	5,913	7,756		7,756	16,038		16,038	29,707
1991/92	4,171		4,171	1,552		1,552	5,723	6,895		6,895	22,180		22,180	34,798
1992/93	3,351		3,351	1,565		1,565	4,916	4,912		4,912	21,517		21,517	31,345
1993/94	2,796		2,796	1,309		1,309	4,105	5,524		5,524	15,482		15,482	25,111
1994/95	2,882		2,882	890		890	3,772	4,989		4,989	14,238	1,482	15,720	24,481
1995/96	3,758		3,758	2,010		2,010	5,768	5,108		5,108	12,426	4,171	16,597	27,473
1996/97	3,856		3,856	1,750		1,750	5,606	5,886		5,886	11,372	6,239	17,611	29,103
1997/98	3,678		3,678	1,504		1,504	5,182	3,769		3,769	8,173	8,308	16,481	25,432
1998/99	4,013		4,013	1,689		1,689	5,702	4,483		4,483	10,123	6,973	17,096	27,280
1999/00	4,027		4,027	1,707		1,707	5,734	6,010		6,010	11,174	7,459	18,632	30,376
2000/01	3,710		3,710	1,964		1,964	5,674	3,923		3,923	13,988	6,838	20,826	30,423
2001/02	3,961		3,961	2,232		2,232	6,193	5,459		5,459	12,724	7,276	20,000	31,652
2002/03	3,445		3,445	1,197		1,197	4,642	8,056		8,056	10,378	6,192	16,611	29,309
2003/04	3,875		3,875	2,092		2,092	5,967	6,089		6,089	9,030	3,669	12,973	25,029
2004/05	2,870		2,870	1,685		1,685	4,555	8,557		8,557	4,444	3,920	8,468	21,580
2005/06	1,042	921	1,963	330	254	584	2,547	7,494	1,216	8,710	5,985	4,249	10,234	21,491
2006/07	1,568	219	1,787	543	165	708	2,495	5,576	1,817	7,393	4,250	10,960	15,210	25,098
2007/08	3,467	1,284	4,751	1,283	475	1,758	6,509	4,468	2,452	6,920	3,662	10,954	14,616	28,045

(a) Alamitos Barrier Water is purchased by WRD on the Los Angeles County side of the barrier, and by Orange County Water District on the Orange County side.

TABLE 2.3
WATER QUALITY OF REPLENISHMENT WATER

Constituent	Units	Colorado River/ State Project Water[a] 2007	Untreated Colorado River Water[b] 2007	Untreated State Project Water[c] 2007	West Basin MWD WRP[d] 2007	Terminal Island Treatment Plant[e] 2007	WRD Vander Lans WRP[f] 2007	Whittier Narrows WRP[g] 2007-2008	San Jose Creek East WRP[g] 2007-2008	San Jose Creek West WRP[g] 2007-2008	Pomona WRP[g] 2007-2008	Stormwater[h] 2007
Arsenic	ug/L	ND	2.5	2.1	0.1	ND	ND	1.29	0.09	0.48	1.09	2.6
Boron	ug/L	150/180	140	180	NA	477.2[j]	230	340	410	430	380	NA
Chloride	mg/L	86/61	99	58	3.9	60.7[j]	8.8	112	158	117	132	67.0
Chromium, Total	ug/L	ND/ND	ND	ND	0.8	0.19	ND	0.93	0.28	0.69	0.86	7.4
Chromium VI	ug/L	0.13/0.12	ND	0.10	NA	NA	NA	ND	ND	ND	ND	0.25
Copper, Total	ug/L	ND/ND	ND	ND	5.1	1.15	ND	4.88	3.41	4.64	5.15	28.5
1,4-Dioxane	ug/L	NA	NA	NA	ND	ND	ND	NA	NA	NA	NA	NA
Haloacetic Acids (HAA5)	ug/L	19/5.9	NA	NA	0.6	7.6	ND	NA	NA	NA	NA	NA
Iron	mg/L	ND/ND	ND	ND	ND	0.0039	ND	0.00358	ND	ND	0.00633	5.6
Manganese	ug/L	ND/ND	ND	ND	0.067	2.0	ND	6.5	26.2	22.6	5.9	NA
Methyl-tert-butyl-ether (MTBE)	ug/L	ND/ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA
Nitrate (as N)	mg/L	0.5/0.6	ND	0.6	0.20	0.73	0.88	6.33	3.13	6.61	5.44	NA
Nitrite (as N)	mg/L	ND/ND	ND	ND	ND	3.3	0.12	0.0004	0.032	ND	0.10	0.09
Perchlorate	ug/L	ND/ND	ND	ND	ND	0.49	ND	NA	NA	NA	NA	NA
pH	Units	8.2/8.3	8.1	7.8	7.4	7.7[j]	8.21	7.4	7.0	7.1	7.5	7.54
Selenium	ug/L	ND/ND	ND	ND	ND	0.18	ND	ND	ND	ND	ND	1.83
Specific Conductance	µS/cm	751/477	1,090	451	87.6	275	91	NA	NA	NA	NA	688.3
Sulfate	mg/L	140/52	274	45	1.7	40.1[j]	3.6	100	127	88	74	80.5
Tetrachloroethylene (PCE)	ug/L	ND/ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
Trichloroethylene (TCE)	ug/L	ND/ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
Total Alkalinity	mg/L	88/82	126	80	40.8	27.8	NA	163	160	156	175	109.8
Total Dissolved Solids (TDS)	mg/L	437/267	675	252	58.8	207.2[j]	59	561	649	536	570	446
Total Hardness	mg/L	181/112	316	112	28.8	30.3	4.7	204	238	212	232	173.3
Total Organic Carbon (TOC)	mg/L	2.2/2.2	2.8	2.8	0.20	0.47	0.34	5.06	5.92	5.01	7.13	9.5
Total Trihalomethanes (TTHMs)	ug/L	46/22	NA	NA	0.8	15.0	1.1	47	26	23	28	NA
Turbidity	NTU	0.06/0.04	1.5	1.3	0.04	0.05	0.06	0.7	0.7	0.5	0.9	2.2

Notes:
a = Used at the seawater intrusion barriers, generally Weymouth Plant product to Dominguez Gap and Alamitos Barriers, and Jensen Plant product to the West Coast Barrier
b = Used at the Montebello Forebay spreading grounds (Lake Mathews)
c = Used at the Montebello Forebay spreading grounds (Castaic Lake)
d = Effluent of treatment plant before blending with treated Colorado River/State Project water; used at the West Coast Basin Barrier
e = Effluent of treatment plant; used at the Dominguez Gap Barrier and blended with treated Colorado River/State Project water
f = Effluent of treatment plant before blending with treated Colorado River/State Project water; used at Alamitos Barrier
g = Average of weekly and/or quarterly samples collected from the effluent of treatment plant; used at the Montebello Forebay spreading grounds
h = Average of samples collected by LADWP from San Gabriel River Station S14 in 2007 (3 storm events total)
i = Range of concentrations detected in the MWD distribution system
j = Average concentration after blending with treated Colorado River/State Project water, before usage at Dominguez Gap Barrier

Sources of Data:
2007 Water Quality Report to MWD Member Agencies (Metropolitan Water District of Southern California [MWD], 2008)
October 2007 - September 2008 Annual Monitoring Report, Montebello Forebay Groundwater Recharge (County Sanitation Districts of Los Angeles County, December 2008)
2007 Annual Report, West Coast Basin Barrier Project, Edward C. Little Water Recycling Facility (West Basin Municipal Water District [WBMWD], 2008)
2007-08 Stormwater Monitoring Report, Los Angeles County (Los Angeles County Department of Public Works [LACDPW], 2008)
2007 Annual Summary Report, Harbor Water Recycling/Dominguez Gap Barrier Project (Los Angeles Department of Water and Power [LADPW], March 2008)
2007 Annual Monitoring Report, Alamitos Barrier Recycled Water Project, Leo J. Vander Lans Water Treatment Facility (Water Replenishment District of Southern California [WRD], April 2008)

NA = Not Available/Analyzed
ND = None Detected
MCLG = Maximum Contaminant Level Goal
WRP = Water Reclamation Plant

TABLE 3.1
HISTORICAL AMOUNTS OF GROUNDWATER PRODUCTION
(Acre-feet)

WATER YEAR	CENTRAL BASIN	WEST COAST BASIN	TOTAL
1960/61	292,500	61,900	354,400
1961/62	275,800	59,100	334,900
1962/63	225,400	59,100	284,500
1963/64	219,100	61,300	280,400
1964/65	211,600	59,800	271,400
1965/66	222,800	60,800	283,600
1966/67	206,700	62,300	269,000
1967/68	220,100	61,600	281,700
1968/69	213,800	61,600	275,400
1969/70	222,200	62,600	284,800
1970/71	211,600	60,900	272,500
1971/72	216,100	64,800	280,900
1972/73	205,600	60,300	265,900
1973/74	211,300	55,000	266,300
1974/75	213,100	56,700	269,800
1975/76	215,300	59,400	274,700
1976/77	211,500	59,800	271,300
1977/78	196,600	58,300	254,900
1978/79	207,000	58,000	265,000
1979/80	209,500	57,100	266,600
1980/81	211,915	57,711	269,626
1981/82	202,587	61,874	264,461
1982/83	194,548	57,542	252,090
1983/84	196,660	51,930	248,590
1984/85	193,085	52,746	245,831
1985/86	195,889	52,762	248,650
1986/87	196,587	48,026	244,613
1987/88	194,561	43,833	238,394
1988/89	200,105	44,162	244,267
1989/90	197,811	47,904	245,715
1990/91	186,977	53,075	240,052
1991/92	196,382	55,964	252,346
1992/93	150,386	40,058	190,444
1993/94	156,930	41,768	198,697
1994/95	181,164	41,396	222,560
1995/96	182,067	52,759	234,826
1996/97	187,452	52,581	240,033
1997/98	188,988	51,841	240,829
1998/99	204,418	51,331	255,749
1999/00	197,946	53,579	251,525
2000/01	195,255	53,842	249,047
2001/02	199,900	50,066	249,966
2002/03	190,082	51,789	241,871
2003/04	200,332	47,965	248,297
2004/05	188,673	41,235	229,908
2005/06	191,030	36,714	227,744
2006/07	198,115	37,655	235,770
2007/08	206,260	38,472	244,732

TABLE 3.2
GROUNDWATER ELEVATIONS, WATER YEAR 2007-2008

	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6
Bell Gardens #1						Reference Point Elevation: 118
Depth of Well	1775-1795	1390-1410	1090-1110	855-875	555-575	370-390
Aquifer Name	Not Interpreted					
10/26/2007	9.5	6.92	10.25	19.41	23.28	21.98
12/26/2007	7.41	6.95	11.99	20.05	25.6	24.98
2/29/2008	14	13.9	19.89	25.98	29.36	26.84
3/25/2008	14.01	14.7	19.09	25.8	28.57	25.78
5/12/2008	13.17	13.48	16.41	22.48	25.6	22.5
6/30/2008	9.1	7.91	9.89	16.24	18.98	17
9/25/2008	3.13	2.97	5.17	12.44	16.22	15.22
Carson #1						Reference Point Elevation: 24.16
Depth of Well	990-1010	740-760	460-480	250-270		
Aquifer Name	Sunnyside	Silverado	Lynwood	Gage		
12/24/2007	-51.42	-49.9	-15.65	-14.03		
3/19/2008	-50.51	-49.07	-15.18	-13.62		
5/2/2008	-51.54	-49.68	-15.13	-13.52		
6/26/2008	-52.34	-50.47	-15.24	-13.61		
9/2/2008	-50.54	-48.65	-14.96	-13.16		
9/15/2008	-50.61	-48.75	-15.01	-13.44		
Carson #2						Reference Point Elevation: 39.81
Depth of Well	1230-1250	850-870	600-620	450-470	230-250	
Aquifer Name	Sunnyside	Silverado	Silverado	Lynwood	Gage	
12/24/2007	-37.68	-32.05	-31.75	-28.7	-26.47	
3/17/2008	-36.62	-31.04	-30.74	-27.71	-25.49	
3/20/2008	-36.71	-31.1	-30.82	-27.73	-25.55	
4/7/2008	-36.88	-30.82	-30.53	-27.44	-25.29	
7/1/2008	-37.6	-31.92	-31.62	-28.52	-26.25	
8/27/2008	-37.24	-31.51	-31.11	-28.04	-25.87	
9/30/2008	-36.75	-32.95	-32.6	-28.94	-26.4	
Cerritos #1						Reference Point Elevation: 40.72
Depth of Well	1155-1175	1000-1020	610-630	270-290	180-200	125-135
Aquifer Name	Sunnyside	Sunnyside	Lynwood	Gage	Artesia	Artesia
11/7/2007	-52	-52.47	-45.97	10.94	15.97	15.99
1/4/2008	-40.21	-44.49	-41.98	12.54	17.54	17.61
2/1/2008	-36.58	-40.93	-39.52	13.24	18.18	18.22
3/20/2008	-38.3	-42.56	-38.75	14.08	18.85	18.84
4/16/2008	-37.86	-37.71	-37.51	14.38	17.27	17.26
6/27/2008	-56.34	-63.39	-50.79	12.2	15.88	15.86
9/8/2008	-58.53	-64.55	-51.66	9.42	14.36	14.36
9/30/2008	-58.82	-65.2	-52.02	9.87	15.02	15.02
Cerritos #2						Reference Point Elevation: 75.27
Depth of Well	1350-1370	915-935	740-760	490-510	350-370	150-170
Aquifer Name	Sunnyside	Silverado	Silverado	Jefferson	Gage	Gaspur
11/7/2007	-20.14	-29	-26.92	-5.42	22.62	30.9
12/31/2007	-17.34	-22.68	-24.49	-3.16	23.22	31.29
3/20/2008	-11.54	-19.59	-23.01	-2.1	23.91	31.78
4/15/2008	-10.02	-18.52	-24.01	-2.76	23.62	31.54
6/27/2008	-17.93	-36.97	-36.22	-10.06	21.67	30.64
8/12/2008	-24.07	-38.21	-37.88	-11.33	20.46	29.81
8/18/2008	-24.41	-37.76	-36.79	-10.95	20.51	29.7
9/10/2008	-24.95	-37.71	-36.17	-10.48	20.54	29.63
9/29/2008	-24.84	-38.17	-36.87	-11.36	20.51	29.72
Chandler #3						Reference Point Elevation: 153.2
Depth of Well	341-363	165-192				
Aquifer Name	Gage/Lynw/Silv	Gage/Lynw/Silv				
12/26/2007	-17.71	-17.39				
03/27/2008	-17.06	-16.89				
04/17/2008	-17.27	-16.86				
07/10/2008	-17.41	-17.36				
09/04/2008	-17.29	-17.88				
09/29/2008	-17.06	-16.9				

TABLE 3.2
GROUNDWATER ELEVATIONS, WATER YEAR 2007-2008

	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6
Commerce #1						Reference Point Elevation: 170.09
Depth of Well	1330-1390	940-960	760-780	570-590	325-345	205-225
Aquifer Name	Pico Formation	Sunnyside	Sunnyside	Silverado	Hollydale	Exposition/Gage
12/27/2007	58.68	57.22	53.4	22.21	26.91	57.75
3/20/2008	58.64	60.66	57.08	26.51	26.82	58.14
3/20/2008	58.58	60.64	57.08	26.32	27.01	58.13
4/11/2008	58.52	60.12	56.45	24.82	26.31	57.97
4/21/2008	n/a	60.09	60.09	24.62	26.84	57.81
6/30/2008	n/a	56.22	51.95	17.73	22.49	56.79
9/24/2008	66.26	53.51	49.31	16.72	20.51	56.22
Compton #1						Reference Point Elevation: 67.17
Depth of Well	1370-1390	1150-1170	800-820	460-480	325-345	
Aquifer Name	Sunnyside	Sunnyside	Silverado	Hollydale	Gage	
11/15/2007	-65.7	-65.4	-22.71	-6.38	-2.88	
12/27/2007	-60.02	-59.78	-21	-4.07	-0.11	
1/2/2008	-58.16	-57.92	-20.74	-3.82	-0.19	
1/31/2008	-53.59	-53.38	-19.04	-2.82	0.69	
3/5/2008	-50.39	-50.19	-17.66	-1.61	0.97	
3/19/2008	-50.8	-50.58	-17.71	-1.96	0.91	
5/1/2008	-36.84	-36.74	-20.08	-4.05	-0.25	
6/24/2008	-50.05	-49.86	-24.36	-10.63	-9.59	
9/10/2008	-65.83	-66.04	-28.09	-11.58	n/a	
9/22/2008	-65.95	-65.7	-28.02	-11.98	-9.54	
Compton #2						Reference Point Elevation: 75
Depth of Well	1479-1495	830-850	585-605	380-400	295-315	150-170
Aquifer Name	Sunnyside	Sunnyside	Silverado	Hollydale	Gage	Exposition
10/26/2007	-12.08	-45.83	-38.57	-37.14	-28.3	-20.02
12/26/2007	-18.29	-46.21	-36.33	-34.83	-27.53	-20.22
1/31/2008	-20.09	-44.36	-35.01	-34.09	-29.6	-20.58
3/20/2008	-19.66	-42.59	-33.96	-33.43	-29.83	-20.84
4/28/2008	-18.44	-43.19	-36.57	-35.9	-31.27	-21.51
6/30/2008	-15.09	-46.71	-39.38	-38.81	-33.71	-23.32
9/9/2008	-17.16	-49.02	-40.27	-39.23	-34.85	-24.56
9/28/2008	-18.65	-50.91	-41.16	-39.93	-33.82	-24.58
Downey #1						Reference Point Elevation: 97.21
Depth of Well	1479-1495	830-850	585-605	380-400	295-315	150-170
Aquifer Name	Sunnyside	Sunnyside	Silverado	Hollydale	Gage	Exposition
10/22/2007	0.91	4.86	9.35	12.29	39.79	44.1
1/24/2008	4.47	8.35	14.09	15.88	39.88	43.72
3/31/2008	9.18	12.01	13.96	13.17	39.49	43.34
4/27/2008	8.53	10.96	12.37	11.55	39.07	47.21
4/29/2008	8.48	10.86	12.27	10.79	39.07	43.26
7/9/2008	-0.53	1.58	1.96	4.21	37.32	42.64
9/15/2008	-5.34	-1.74	2.04	4.76	36.78	42.06
Gardena #1						Reference Point Elevation: 80.79
Depth of Well	970-990	445-465	345-365	120-140		
Aquifer Name	Sunnyside	Silverado	Lynwood	Gage		
12/26/2007	-55.46	-108.05	-89.29	n/a		
1/2/2008	-55.28	-106.97	-88.52	-12.1		
3/19/2008	-53.56	-105.56	-86.8	-12.04		
4/7/2008	-53.62	-107.78	-87.59	-11.91		
5/5/2008	-53.64	-108.54	-89.218	-11.9		
5/23/2008	-53.63	-108.59	-89.32	-11.77		
6/25/2008	-53.85	-108.81	-89.74	-12.02		
8/27/2008	-53.21	-109.17	-90.33	-11.96		
9/15/2008	-54.09	-113.64	-90.65	-11.93		
9/17/2008	-54.03	-120.31	-91.26	-11.99		

TABLE 3.2
GROUNDWATER ELEVATIONS, WATER YEAR 2007-2008

	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6
Gardena #2						Reference Point Elevation: 26.74
Depth of Well	1275-1335	770-790	610-630	340-360	235-255	
Aquifer Name	Sunnyside	Silverado	Silverado	Lynwood	Gardena	
12/26/2007	-42.19	-52.78	-52.93	-22.53	-10.64	
4/1/2008	-41.13	-52.53	-52.7	-22.23	-10.49	
4/10/2008	-41.1	-52.28	-52.46	-22.21	-10.31	
5/2/2008	-41.13	-53.46	-53.64	-22.76	-10.53	
6/29/2008	-41.58	-53.44	-53.62	-23.21	-10.95	
8/26/2008	-41.77	-53.42	-53.6	-23.11	-10.73	
9/17/2008	-41.73	-53.38	-53.56	-23.02	-10.7	
Hawthorne #1						Reference Point Elevation: 86.35
Depth of Well	910-950	710-730	520-540	400-420	240-260	110-130
Aquifer Name	Sunnyside	Silverado	Silverado	Silverado	Lynwood	Gage
10/25/2007	-79.26	-11.85	-10.9	-10.71	-6.69	1.11
12/26/2007	-74.77	-9.86	-8.86	-8.68	-5.39	1.59
3/19/2008	-77.14	-10.16	-9.19	-8.97	-5.54	1.56
5/5/2008	-81.03	-12.69	-11.45	-11.24	-6.9	1.62
5/9/2008	-81.25	-12.99	-11.76	-11.54	-7.12	1.64
5/21/2008	-81.1	-13.45	-12.09	-11.87	-7.38	1.88
6/29/2008	-68.58	-12.78	-11.53	-11.3	-7.11	1.59
9/28/2008	-74.33	-13.13	-11.9	-11.71	-7.36	1.66
Huntington Park #1						Reference Point Elevation: 177.08
Depth of Well	890-910	690-710	420-440	275-295	114-134	
Aquifer Name	Silverado	Jefferson	Gage	Exposition	Gaspur	
10/4/2007	-29.93	-31.18	-24.45	13.96	Dry	
11/8/2007	-29.31	-29.19	-24.52	14.46	Dry	
12/27/2007	-28.98	-28.51	-23.71	14.93	Dry	
1/2/2008	-28.96	-29.23	-23.96	14.47	Dry	
3/19/2008	-28.1	-28.51	-24.09	15.29	Dry	
4/30/2008	-29.96	-32.44	-27.18	15.06	Dry	
6/24/2008	-31.7	-34.7	-27.86	13.5	Dry	
9/28/2008	-32.05	-33.09	-26.48	13.84	Dry	
Inglewood #1						Reference Point Elevation: 110.56
Depth of Well	1380-1400		430-450	280-300	150-170	
Aquifer Name	Pico Formation	Abandoned	Silverado	Lynwood	Gage	
10/22/2007	-33.96		-46.42	-0.7	4.21	
12/26/2007	-32.99		-44.73	-1.32	4.82	
3/3/2008	-32.51		-45.58	-0.41	4.6	
3/19/2008	-32.27		-45.55	-0.35	4.78	
5/9/2008	-32.25		-46.57	-0.39	4.93	
5/20/2008	-32.32		-46.53	0.56	4.85	
6/29/2008	-33.96		-42.09	0.16	4.96	
9/10/2008	-33.12		-43.62	0.06	5.2	
9/17/2008	-32.85		-44.13	-0.11	5.05	
Inglewood #2						Reference Point Elevation: 217.33
Depth of Well	800-840	450-470	330-350	225-245		
Aquifer Name	Pico Formation	Sunnyside	Silverado	Lynwood		
12/26/2007	-23.54	-17.11	-7.46	n/a		
3/19/2008	-23.99	-17.11	-6.55	n/a		
5/8/2008	-24.03	-17.04	-6.48	n/a		
6/29/2008	-24.27	-17.14	-6.52	-2.28		
9/8/2008	-24.45	-17.11	-6.48	n/a		
9/30/2008	-24.65	-17.22	-6.37	-2.08		
Lakewood #1						Reference Point Elevation: 37.91
Depth of Well	989-1009	640-660	450-470	280-300	140-160	70-90
Aquifer Name	Sunnyside	Silverado	Lynwood	Gage	Artesia	Bellflower
12/27/2007	-64.4	-53.5	-51.37	-27.24	-12.95	12.02
1/30/2008	-64.24	-53.02	-50.65	-25.57	-11.77	12.81
3/31/2008	-97.55	-66.28	-63.38	-26.17	-11.79	13.3
3/31/2008	-65.68	-54.19	n/a	-26.37	-12.16	n/a
4/17/2008	-64.03	-50.32	-47.2	-24.21	-11.09	12.86
6/30/2008	-69.1	-57.8	-57.07	-34.2	-17.82	11.96
9/23/2008	-71.72	-58.55	-57.44	-34.17	-17.93	11.23

TABLE 3.2
GROUNDWATER ELEVATIONS, WATER YEAR 2007-2008

	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6
La Mirada #1						Reference Point Elevation: 75.85
Depth of Well	1130-1150	965-985	690-710	470-490	225-245	
Aquifer Name	Sunnyside	Silverado	Lynwood	Jefferson	Gage	
10/23/2007	-32.53	-29.93	-48.93	-68.73	-29.98	
11/7/2007	-34.16	-31.41	-52.09	-69.73	-30.89	
1/4/2008	-32.9	-29.97	-34.31	-44.55	-22.04	
3/31/2008	-22.05	-19.7	-28.82	-45.58	-18.43	
4/1/2008	-22.06	-19.68	-28.8	-45.72	-18.51	
6/27/2008	-28.03	-26.01	-49.8	-66.92	-30.86	
9/14/2008	-37.9	-35.69	-52.9	-67.18	-32.39	
9/29/2008	-37.9	-35.1	-47.98	-65.26	-31.66	
Lomita #1						Reference Point Elevation: 76.91
Depth of Well	1240-1260	700-720	550-570	400-420	220-240	100-120
Aquifer Name	Sunnyside	Sunnyside	Silverado	Silverado	Gage	Gage
12/26/2007	-31.2	-19.01	-18.26	-18.46	-16.5	-18.18
3/19/2008	-26.54	-18.06	-17.42	-17.6	-16.1	-17.31
4/2/2008	n/a	-21.12	-20.94	-18.53	-17.22	-19.71
7/1/2008	-30.14	-19.06	-18.16	-18.27	-16.1	-18
9/4/2008	-28.47	-19.24	-22.06	-19.36	-16.61	-21.12
9/29/2008	-30.05	-19.35	-18.5	-18.93	-16.04	-18.48
Long Beach #1						Reference Point Elevation: 28.69
Depth of Well	1430-1450	1230-1250	970-990	599-619	400-420	155-175
Aquifer Name	Sunnyside	Sunnyside	Silverado	Lynwood	Jefferson	Gage
11/6/2007	-42.48	-45.56	-92.72	-53.52	-48.82	-20.05
12/21/2007	-45.54	-48.45	-83.83	-51.51	-47.13	-19.11
3/13/2008	-38.16	-40.85	-69.48	-44.06	-41.58	-14.82
4/11/2008	-30.35	-32.18	-48.85	-34.84	-31.84	-14.27
5/9/2008	-22.75	-24.24	-56.18	-38.87	-37.66	-15.59
5/12/2008	-22.85	n/a	-58.47	n/a	n/a	-15.81
5/21/2008	-22.63	-24.28	-63.04	-43.59	-42.04	-16.77
6/27/2008	-24.06	-25.85	-73.84	-51.22	-50.26	-22.12
9/3/2008	-38.69	-41.29	-88.08	-55.19	-55.21	-23.53
9/16/2008	-40.62	-43.31	-87.13	-58.08	-55.91	-24.3
Long Beach #2						Reference Point Elevation: 42.15
Depth of Well	970-990	720-740	450-470	280-300	160-180	95-115
Aquifer Name	Sunnyside	Sunnyside	Silverado	Lynwood	Jefferson	Gage
10/5/2007	-90.76	-47.89	-36.63	-10.5	0.31	2.5
10/22/2007	-92.89	-47.72	-36.66	-10.71	-0.02	2.15
3/27/2008	-68.13	-41.69	-34.5	-9.78	0.63	2.63
4/21/2008	-44.42	-40.44	-34.78	-9.89	0.48	2.45
5/20/2008	-58.89	-42.06	-35.41	-10.27	0.24	2.32
6/28/2008	-68.87	-45.93	-36.21	-11.59	-0.39	1.95
9/17/2008	-91.56	-50.37	-37.84	-12.52	-0.61	1.74
Long Beach #3						Reference Point Elevation: 24.60
Depth of Well	1350-1390	997-1017	670-690	530-550	410-430	
Aquifer Name	Sunnyside	Silverado	Silverado	Silverado	Lynwood	
10/4/2007	-35.95	-49.33	-49.34	-49.69	-1.48	
10/22/2007	-36.22	-48.34	-48.35	-48.7	-4.8	
11/14/2007	-36.17	-47.05	-47.06	-47.37	-1.33	
12/26/2007	-35.99	-49.27	-49.28	-49.58	-1.14	
3/26/2008	-35.5	-47.43	-48.99	-49.45	1.39	
3/27/2008	-35.31	-48.99	-49	-49.38	-0.65	
6/28/2008	-35.56	-49.57	-49.57	-49.93	-0.82	
8/25/2008	-35.87	-47.07	-47.02	-47.42	-0.76	
9/17/2008	-35.75	-47.31	-47.3	-47.7	-0.76	
Long Beach #4						Reference Point Elevation: 9.52
Depth of Well	1200-1220	800-820				
Aquifer Name	Pico Formation	Sunnyside				
10/25/2007	-35.73	-18.82				
12/27/2007	-35.23	-17.52				
03/19/2008	-34.46	-16.11				
09/17/2008	-34.47	-15.11				

TABLE 3.2
GROUNDWATER ELEVATIONS, WATER YEAR 2007-2008

	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6
Long Beach #6						Reference Point Elevation: 32.53
Depth of Well	1490-1510	930-950	740-760	480-500	380-400	220-240
Aquifer Name	Pico Formation	Sunnyside	Sunnyside	Silverado	Lynwood	Gage
11/6/2007	-51.54	-76.09	-77.5	-126.59	-126.43	-38.52
11/7/2007	-51.82	-76.41	-77.8	-127.08	-126.93	-38.62
1/29/2008	-52.65	-67.79	-68.42	-91.54	-91.64	-35.98
3/25/2008	-51.16	-65.67	-65.95	-85.18	-85.15	-36.18
4/11/2008	-44.41	-45.47	-45.03	-50.23	-50.16	-31.93
4/28/2008	-37.08	-36.11	-35.88	-42.86	-42.81	-30.36
6/27/2008	-32.29	-43.78	-44.8	-96.33	-96.38	-38.09
9/2/2008	-46.13	-68.33	-69.45	-122.5	-122.54	-41.79
9/17/2008	-48.36	-69.53	-70.62	-115.9	-116.01	-42.22
Long Beach #8						Reference Point Elevation: 17.78
Depth of Well	1435-1455	1020-1040	780-800	635-655	415-435	165-185
Aquifer Name	Pico Formation	Sunnyside	Silverado	Silverado	Lynwood	Gage
4/1/2008	-17	-32.87	-44.88	-42.84	-42.17	2.76
7/7/2008	-16.76	-32.86	-45.39	-43.25	-42.59	2.94
9/29/2008	-16.9	-33.09	-43.61	-41.68	-41.13	2.69
Los Angeles #1						Reference Point Elevation: 173.63
Depth of Well	1350-1370	1080-1100	920-940	640-660	350-370	
Aquifer Name	Pico Formation	Sunnyside	Silverado	Lynwood	Gage	
12/26/2007	-20.66	-23.4	-24.66	-28.4	-23.64	
3/25/2008	-20.95	-22.61	-24.22	-27.92	-22.19	
4/29/2008	-20.95	-23.05	-24.73	-28	-23.12	
6/29/2008	-21.14	-23.8	-25.3	-27.17	-21.71	
9/29/2008	-24.14	-24.82	-26.04	-28.73	-22.8	
Montebello #1						Reference Point Elevation: 192.60
Depth of Well	960-980	690-710	500-520	370-390	210-230	90-110
Aquifer Name	Pico Formation	Sunnyside	Silverado	Lynwood	Gage	Exposition
12/27/2007	93.67	86.89	87.21	84.19	85.56	Dry
3/20/2008	102.27	100.36	99.58	95.25	91.16	Dry
4/28/2008	99.11	94.92	93.88	90.22	90.42	90.42
6/30/2008	93.73	88.04	87.24	83.59	86.07	Dry
9/24/2008	89.34	84.32	83.75	80.34	80.84	Dry
Norwalk #1						Reference Point Elevation: 95.44
Depth of Well	1400-1420	990-1010	720-740	430-450	220-240	
Aquifer Name	Sunnyside	Silverado	Lynwood	Jefferson	Gage	
10/18/2007	37.02	-9.53	12.04	3.09	2.81	
11/7/2007	36.66	-11.79	10.66	2.56	2.47	
1/4/2008	30.51	-14.43	10.05	4.61	3.41	
2/1/2008	32.38	-11.95	12.435	5.95	4.39	
3/20/2008	33.81	-7.09	16.16	6.48	4.7	
4/25/2008	n/a	-4.41	16.67	6.11	5.57	
6/27/2008	32.56	-4.65	13.21	0.95	1.33	
9/12/2008	26.26	-13.98	6.51	-1.13	-0.46	
9/30/2008	24.31	-15.77	5.81	-1.4	-0.54	
Norwalk #2						Reference Point Elevation: 107.4
Depth of Well	1460-1480	1260-1280	960-980	800-820	480-500	236-256
Aquifer Name	Not Interpreted					
10/23/2007	9.16	9.08	1.58	4.51	15.64	25.53
12/12/2007	5.41	5.29	-0.6	3.51	17.31	25.75
12/26/2007	4.76	4.66	0.17	4.45	18.29	26.17
1/28/2008	5.24	5.18	4.17	8.69	20.95	27.64
3/20/2008	8.75	8.53	9.05	13.33	21.51	28.54
4/29/2008	9.19	9.05	9.77	13.14	19.93	26.92
5/22/2008	9.82	9.88	8.89	11.32	17.26	25.8
7/1/2008	8.71	8.78	4.01	5.8	12.53	22.27
9/18/2008	0.77	2.83	-4.14	-1.25	9.07	19.79

TABLE 3.2
GROUNDWATER ELEVATIONS, WATER YEAR 2007-2008

	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6
Pico #1						Reference Point Elevation: 181.06
Depth of Well	860-900	460-480	380-400	170-190		
Aquifer Name	Pico Formation	Silverado	Silverado	Gardena		
11/5/2007	135.25	121.81	121.17	117.65		
12/31/2007	133.74	123.97	123.38	120.67		
1/30/2008	136.66	131.15	130.84	129.98		
4/27/2008	n/a	133.41	132.83	130.73		
6/24/2008	136.06	126.15	125.73	123.31		
9/30/2008	130.35	118.37	117.98	115.73		
Pico #2						Reference Point Elevation: 149.6
Depth of Well	1180-1200	830-850	560-580	320-340	235-255	100-120
Aquifer Name	Sunnyside	Sunnyside	Sunnyside	Silverado	Lynwood	Gaspur
12/27/2007	71.66	72.37	77.33	92.32	93.04	97.44
3/28/2008	83.77	83.31	90.48	102.91	103.8	108.62
5/19/2008	74.02	73.67	81.29	99.6	99.6	99.6
6/10/2008	72.5	71.53	78.31	92.46	92.15	99.62
7/1/2008	68.3	66.94	74.28	89.52	89.23	96.41
9/30/2008	69.23	68.28	71.37	80.73	80.54	85.35
PM-3 Madrid						Reference Point Elevation: 70.68
Depth of Well	640-680	480-520	240-280	145-185		
Aquifer Name	Sunnyside	Silverado	Lynwood	Gage		
12/26/2007	-11.97	-9.25	-9.24	-9.21		
3/19/2008	-11.51	-8.91	-8.83	-8.79		
4/9/2008	-11.32	-8.89	-8.86	-8.74		
6/25/2008	-11.66	-8.81	-8.72	-8.72		
9/7/2008	-11.79	-8.84	-8.86	-8.84		
9/16/2008	-11.55	-8.88	-8.8	-8.8		
PM-4 Mariner						Reference Point Elevation: 97.7
Depth of Well	670-710	500-540	340-380	200-240		
Aquifer Name	Sunnyside	Silverado	Lynwood	Lynwood		
12/26/2007	-6.87	-4.35	-1.33	-1.32		
3/19/2008	-6.58	-4.79	-1.84	-1.79		
4/13/2008	-6.51	-5.16	-2.21	-2.01		
5/23/2008	-6.83	-5.23	-2.12	-2.05		
6/28/2008	-7.06	-5.5	-2.7	-2.3		
8/24/2008	-6.6	-5.42	-2.52	-2.57		
9/28/2008	-6.79	-4.33	-1.25	-1.2		
Rio Hondo #1						Reference Point Elevation: 144.36
Depth of Well	1110-1130	910-930	710-730	430-450	280-300	140-160
Aquifer Name	Sunnyside	Sunnyside	Sunnyside	Silverado	Lynwood	Gardena
12/27/2007	67.7	65.89	64.06	45.69	63.12	66.26
3/31/2008	76.78	76.34	75.29	65.42	75.41	78.59
4/23/2008	73.64	72.49	71.63	62.07	71.44	75.79
6/20/2008	66.81	62.81	61.94	53.56	64.64	68.33
8/6/2008	61.7	57.41	56.64	48.48	59.08	62.79
9/14/2008	61.05	57.21	56.33	46.81	56.56	59.9
9/30/2008	62.45	60.69	59.88	49.2	56.49	59.34
South Gate #1						Reference Point Elevation: 90.96
Depth of Well	1440-1460	1320-1340	910-930	565-585	220-240	
Aquifer Name	Pico Formation	Sunnyside	Silverado	Lynwood	Exposition	
12/26/2007	-10.79	-7.39	-2.46	-2.24	34.82	
3/25/2008	-4.83	-1.93	1.8	-2.29	34.89	
4/30/2008	-7.69	-5.55	-1.47	-7.32	32.53	
5/12/2008	-8.37	-6.22	-1.85	-7.77	34.26	
6/30/2008	-14.26	-12.07	-8.82	-12.61	33.22	
9/29/2008	-17.76	-14.4	-8.92	-10.81	32.45	
Westchester #1						Reference Point Elevation: 124.27
Depth of Well	740-760	560-580	455-475	310-330	215-235	
Aquifer Name	Pico Formation	Sunnyside	Silverado	Lynwood	Gage	
12/26/2007	2.06	8.66	8.98	9.05	9.1	
3/19/2008	2.31	8.88	9.13	9.19	9.26	
4/9/2008	2.23	8.95	9.26	9.28	9.31	
6/29/2008	2	8.9	9.13	9.15	9.25	
9/11/2008	n/a	8.72	9.52	9.09	9.24	
9/22/2008	1.89	8.82	9.01	9.01	9.04	

TABLE 3.2
GROUNDWATER ELEVATIONS, WATER YEAR 2007-2008

	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6
Whittier #1						Reference Point Elevation: 217.17
Depth of Well	1180-1200	920-940	600-620	450-470	200-220	
Aquifer Name	Sunnyside	Sunnyside	Silverado	Lynwood	Gage	
11/8/2007	125.28	125.33	117.94	116.04	198.94	
1/4/2008	124.97	124.78	117.19	115.17	199.06	
3/28/2008	124.78	124.76	117.21	115.17	200	
4/16/2008	124.57	124.55	116.93	114.97	199.89	
7/2/2008	124.08	124.12	116.26	114.15	199.38	
9/15/2008	123.34	123.4	115.06	112.88	198.9	
Whittier #2						Reference Point Elevation: 160
Depth of Well	1370-1390	1090-1110	655-675	425-445	315-335	150-170
Aquifer Name	Sunnyside	Sunnyside	Silverado	Silverado	Lynwood	Gardena
10/2/2007	90	90.29	77.33	77.71	100.92	110.73
11/8/2007	88.19	88.52	73.33	75.1	98.69	108.28
12/11/2007	87.21	87.56	75.82	79.17	100.43	108.45
12/31/2007	87.53	87.85	76.54	79.73	103.12	110.21
2/21/2008	93.07	93.33	94.45	96.57	110.06	114.95
3/28/2008	93.99	94.13	91.8	92	110.05	115.89
5/15/2008	90.68	90.8	82.6	82.65	104.71	113.24
5/23/2008	90.03	90.29	80.8	83.54	104.39	112.76
6/24/2008	88.64	88.78	74.22	74.23	100.01	110.02
9/22/2008	82.78	83.2	71.08	71.51	90.81	101.47
Willowbrook #1						Reference Point Elevation: 96.21
Depth of Well	885-905	500-520	360-380	200-220		
Aquifer Name	Sunnyside	Silverado	Lynwood	Gage		
12/26/2007	-50.54	-33.58	-32.5	-31.97		
3/3/2008	-46.12	-32.16	-33.11	-32.48		
3/20/2008	-46.66	-32.26	-32.81	-32.25		
3/28/2008	-47.09	-32.27	-30.79	-31.04		
4/22/2008	-46.65	-32.72	-34.58	-33.74		
7/2/2008	-49.94	-34.65	-37.57	-36.73		
9/16/2008	-54.39	-36.27	-38.9	-39.23		
Wilmington #1						Reference Point Elevation: 37.96
Depth of Well	915-935	780-800	550-570	225-245	120-140	
Aquifer Name	Sunnyside	Sunnyside	Silverado	Lynwood	Gage	
12/27/2007	-47.26	-47.63	-47.78	-17.31	-14.03	
3/19/2008	-46.32	-46.75	-46.85	-16.56	-13.35	
3/27/2008	-46.69	-47.07	-47.23	-16.62	-13.29	
3/28/2008	-45.67	-47.09	-47.23	-16.53	-13.23	
6/28/2008	-47.06	-47.44	-47.6	-16.66	-13.29	
8/25/2008	-44.7	-45.07	-45.27	-16.27	-13	
9/17/2008	-44.43	-44.94	-44.99	-16.17	-12.96	
Wilmington #2						Reference Point Elevation: 29.78
Depth of Well	950-970	755-775	540-560	390-410	120-140	
Aquifer Name	Sunnyside	Silverado	Lynwood	Lynwood	Gage	
1/8/2008	-33.33	-28.79	-24.47	-23.78	-7.34	
3/19/2008	-32.44	-27.69	-23.11	-22.23	-7.06	
4/8/2008	-31.65	-27.71	-22.84	-21.98	-7.01	
6/25/2008	-33.32	-28.69	-23.95	-22.96	-6.87	
9/9/2008	-31.74	-27.74	-23.47	-22.69	-6.7	
9/30/2008	-32.37	-28.32	-23.89	-23.07	-6.62	
Whittier Narrows #1						Reference Point Elevation: 215.14
Depth of Well	749-769	609.5-629	462.5-482.5	392.5-402	334-343.5	272.5-282.5
Aquifer Name	Sunnyside	Sunnyside	Sunnyside	Silverado	Silverado	Lynwood
3/29/2008	182.44	182.47	184.38	188.99	189.9	190.93
9/13/2008	164.45	167.32	171.01	178.65	179.56	180.95
				ZONE 7	**ZONE 8**	**ZONE 9**
				233.5-243	163-173	95-104.5
				Jefferson	Gardena	Gaspur
3/29/2008				190.86	190.74	190.36
9/13/2008				181	181.09	183.43

TABLE 4.1
MAJOR MINERAL WATER QUALITY GROUPS

NESTED MONITORING WELL LOCATIONS	GROUP A ZONES Generally Calcium Bicarbonate or Calcium Bicarbonate/Sulfate Dominant	GROUP B ZONES Generally Calcium-Sodium-Bicarbonate or Sodium-Bicarbonate Dominant	GROUP C ZONES Generally Sodium-Chloride Dominant	OTHER ZONES Generally Different Than Groups A, B, and C
CENTRAL BASIN				
Bell Gardens #1	1, 2, 3, 4, 5, 6			
Cerritos #1	1, 2, 3, 4, 5, 6			
Cerritos #2	1, 2, 3, 4, 5, 6			
Commerce #1	2, 3, 4, 5, 6			
Compton #1	2, 3, 4, 5	1		
Compton #2	3, 4, 5	1		
Downey #1	2, 3, 4, 5, 6	1		
Huntington Park #1	1, 2, 3, 4			
Inglewood #2		1, 3	2	
Lakewood #1	6	1,2, 3, 4, 5		
La Mirada #1		1, 2, 3, 4		5
Long Beach #1	5, 6	1, 2, 3, 4		
Long Beach #2	4, 5, 6	1, 2, 3		
Long Beach #6		1, 2 ,3 ,4 ,5 ,6		
Los Angeles #1	1, 2, 3, 4, 5			
Montebello #1	3, 4, 5	1, 2		
Norwalk #1	4, 5	1, 2, 3		
Norwalk #2	3, 4, 5, 6	1, 2		
Rio Hondo #1	1, 2, 3, 4, 5, 6,			
Pico #1	1 2, 3, 4			1
Pico #2	1, 2, 3, 4, 5, 6			
South Gate #1	1, 2, 3, 4, 5			
Willowbrook #1	2, 3, 4	1		
Whittier #1	1, 2, 3, 4, 5			
Whittier #2	1, 3, 4, 5, 6	2		
WEST COAST BASIN				
Carson #1	3, 4	1, 2		
Carson #2	1, 2, 3, 4, 5			
Gardena #1	2, 3, 4			1
Gardena #2	2, 3, 4, 5	1		
Hawthorne #1	5, 6			
Inglewood #1	3, 4, 5			1
Lomita #1				1, 2, 3, 4, 5, 6
Long Beach #3		1, 2, 3	4, 5	
PM-3 Madrid	3, 4	2		1
PM-4 Mariner			2, 3, 4	1
Westchester #1		1, 2, 3, 4, 5		
Wilmington #1			1, 2, 3, 4, 5	
Wilmington #2		3	4, 5	

TABLE 4.2
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2007/2008

Constituents	Units	MCL	MCL Type	Bell Gardens #1 Zone 1 09/25/08	Bell Gardens #1 Zone 2 09/25/08	Bell Gardens #1 Zone 3 09/25/08	Bell Gardens #1 Zone 4 09/25/08	Bell Gardens #1 Zone 5 09/25/08	Bell Gardens #1 Zone 6 09/25/08
General Mineral									
Total Dissolved Solid (TDS)	mg/l	1000	S	464	308	454	390	350	392
Cation Sum	meq/l			7.3	5	7	6.2	5.8	6.5
Anion Sum	meq/l			7.3	4.9	7.1	6.2	5.8	6.3
Iron, Total, ICAP	mg/l	0.3	S	0.045	ND	ND	ND	ND	ND
Manganese, Total, ICAP/MS	ug/l	50	S	**53**	42	3.6	ND	ND	ND
Turbidity	NTU	5	S	0.2	0.6	0.15	0.1	0.1	0.2
Alkalinity	mg/l			163	167	136	143	152	162
Boron	mg/l			0.051	0.13	0.16	0.16	0.18	0.16
Bicarbonate as HCO3,calculated	mg/l			198	203	165	174	185	197
Calcium, Total, ICAP	mg/l			94	38	73	59	57	66
Carbonate as CO3, Calculated	mg/l			2	2.1	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			292	126	236	193	188	218
Chloride	mg/l	500	S	48	28	60	52	37	44
Fluoride	mg/l	2	P	0.21	0.3	0.32	0.4	0.24	0.34
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			1	0.6	0.6	0.6	0.6	0.7
Magnesium, Total, ICAP	mg/l			14	7.6	13	11	11	13
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	2.6	2.1	1.9	1.9
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND
Potassium, Total, ICAP	mg/l			2.4	2.6	3.6	3.4	3	3.4
Sodium, Total, ICAP	mg/l			31	55	51	51	45	47
Sulfate	mg/l	500	S	130	35	120	83	73	80
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND
Total Nitrate, Nitrite-N, CALC	mg/l	10		ND	ND	2.6	2.1	1.9	1.9
Total Organic Carbon	mg/l			ND	0.5	0.38	0.34	0.3	0.37
Carbon Dioxide	mg/l			2	2.1	2.7	2.9	3	3.2
General Physical									
Apparent Color	ACU	15	S	ND	5	ND	ND	ND	ND
Lab pH	Units			8.2	8.2	8	8	8	8
Odor	TON	3	S	**3**	2	1	1	1	2
pH of CaCO3 saturation(25C)	Units			7.2	7.6	7.4	7.4	7.4	7.3
pH of CaCO3 saturation(60C)	Units			6.7	7.1	6.9	7	7	6.9
Specific Conductance	umho/cm	1600	S	691	478	708	614	570	625
Metal									
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	ND	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	3.5	ND	2.9	2.4	1.2	2.1
Barium, Total, ICAP/MS	ug/l	100	P	85	55	**120**	45	46	51
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1000	S	ND	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15	P	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND	ND
Volatile Organic Compound									
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	2.4	1.2
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	2.2
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	0.8
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l	80	P	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND
Fluorotrichloromethane-Freon11	ug/l	150	P	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200		ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770		ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260		ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l			ND	ND	ND	ND	ND	ND
Benzene	ug/l	0.5	P	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND
MTBE	ng/l	13	P	ND	ND	ND	ND	ND	ND
TBA	ug/l			ND	ND	ND	ND	ND	ND
Di-Isopropyl Ether	0		0	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	0		0	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	0		0	ND	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (p): Primary MCL (s): Secondary MCL (ND): Not Detected

TABLE 4.2
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2007/2008

Constituents	Units	MCL	MCL Type	Cerritos #1 Zone 1 04/16/08	Cerritos #1 Zone 1 09/08/08	Cerritos #1 Zone 2 04/16/08	Cerritos #1 Zone 2 09/08/08	Cerritos #1 Zone 3 04/16/08	Cerritos #1 Zone 3 09/08/08	Cerritos #1 Zone 4 04/16/08	Cerritos #1 Zone 4 09/08/08	Cerritos #1 Zone 5 04/16/08	Cerritos #1 Zone 5 09/08/08	Cerritos #1 Zone 6 04/16/08	Cerritos #1 Zone 6 09/08/08
General Mineral															
Total Dissolved Solid (TDS)	mg/l	1000	S	280	258	218	250	276	314	284	280	230	228	280	266
Cation Sum	meq/l			4.7	4.8	4.4	4.5	5.1	5.3	5	5	4.5	4.7	4.6	4.7
Anion Sum	meq/l			4.4	4.6	4.3	4.3	5.1	5.2	4.6	4.9	4.1	4.6	4.1	4.4
Iron, Total, ICAP	mg/l	0.3	S	ND	ND	ND	ND	ND	0.024	0.077	0.084	0.046	0.059	0.063	0.067
Manganese, Total, ICAP/MS	ug/l	50	S	25	26	30	31	44	47	**80**	**77**	**110**	**110**	**140**	**140**
Turbidity	NTU	5	S	0.3	0.15	0.1	0.25	0.2	0.1	0.15	0.2	0.3	0.15	0.25	0.45
Alkalinity	mg/l			147	160	151	154	167	178	163	183	155	184	168	183
Boron	mg/l			0.09	0.091	0.077	0.07	0.094	0.094	0.11	0.091	0.097	0.094	0.087	0.085
Bicarbonate as HCO3,calculated	mg/l			179	194	183	187	203	216	198	223	189	224	205	223
Calcium, Total, ICAP	mg/l			35	36	33	34	41	43	47	47	38	40	46	47
Carbonate as CO3, Calculated	mg/l			ND	2	ND	ND	2.1	ND	ND	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			107	111	104	108	127	133	163	163	133	141	153	158
Chloride	mg/l	500	S	14	13	13	12	18	17	13	12	11	9.3	9.2	8.9
Fluoride	mg/l	2	P	0.27	0.28	0.38	0.39	0.4	0.41	0.56	0.56	0.5	0.5	0.33	0.34
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.6	0.6	0.5	0.6	0.7	0.6	0.4	0.7	0.3	0.6	0.4	0.7
Magnesium, Total, ICAP	mg/l			4.7	5.2	5.3	5.6	5.9	6.3	11	11	9.3	10	9.3	9.8
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total, ICAP	mg/l			2.2	2.6	2.2	2.1	2	2	2	2	2	2	2.1	2.1
Sodium, Total, ICAP	mg/l			58	57	51	52	57	59	38	38	40	42	35	35
Sulfate	mg/l	500	S	51	48	42	41	58	57	44	40	30	28	24	24
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.062	ND	ND
Total Nitrate, Nitrite-N, CALC	mg/l	10		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			0.59	ND	ND	ND	ND	ND	0.51	ND	0.33	ND	0.31	ND
Carbon Dioxide	mg/l			ND	2	ND	ND	2.1	2.8	4.1	2.9	3.9	2.9	4.2	2.9
General Physical															
Apparent Color	ACU	15	S	ND	3	3	ND	3	3	3	3	5	3	3	3
Lab pH	Units			8.2	8.2	8.2	8.2	8.2	8.1	7.9	8.1	7.9	8.1	7.9	8.1
Odor	TON	3	S	2	1	2	**3**	2	2	2	2	**4**	2	2	2
pH of CaCO3 saturation(25C)	Units			7.6	7.6	7.7	7.6	7.5	7.5	7.5	7.4	7.6	7.5	7.5	7.4
pH of CaCO3 saturation(60C)	Units			7.2	7.2	7.2	7.2	7.1	7	7	7	7.1	7	7	7
Specific Conductance	umho/cm	1600	S	464	465	440	427	491	505	472	462	434	430	431	437
Metal															
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	**15**	**13**	**12**	**11**	**20**	**20**	5.5	5.3	9.6	8.6	**36**	**34**
Barium, Total, ICAP/MS	ug/l	100	P	53	51	**110**	**110**	**120**	**120**	66	65	85	84	**100**	**110**
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compound															
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l	80	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluorotrichloromethane-Freon11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ng/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TBA	ug/l			ND		ND		ND		ND		ND		ND	
Di-Isopropyl Ether	0		0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	0		0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	0		0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (p): Primary MCL (s): Secondary MCL (ND): Not Detected

TABLE 4.2
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2007/2008

Constituents	Units	MCL	MCL Type	Cerritos #2	Cerritos #2	Cerritos #2	Cerritos #2	Cerritos #2	Cerritos #2	Cerritos #2	Cerritos #2	Cerritos #2	Cerritos #2	Cerritos #2	Cerritos #2
				Zone 1	Zone 1	Zone 2	Zone 2	Zone 3	Zone 3	Zone 4	Zone 4	Zone 5	Zone 5	Zone 6	Zone 6
				04/15/08	09/10/08	04/15/08	09/10/08	04/15/08	09/10/08	04/15/08	09/10/08	04/15/08	09/10/08	04/15/08	09/10/08
General Mineral															
Total Dissolved Solid (TDS)	mg/l	1000	S	216	240	514	538	212	230	236	248	244	244	938	**1000**
Cation Sum	meq/l			3.5	3.7	7.9	8.3	3.5	3.8	4.1	4.2	4	4.2	15	16
Anion Sum	meq/l			2.6	3.7	8.2	8.1	2.9	3.5	4.2	4.2	3.7	4.2	15	15
Iron, Total, ICAP	mg/l	0.3	S	ND	ND	ND	ND	ND	ND	0.031	0.028	0.085	0.085	0.23	0.23
Manganese, Total, ICAP/MS	ug/l	50	S	14	13	ND	ND	39	42	**84**	**86**	**100**	**110**	**630**	**620**
Turbidity	NTU	5	S	0.45	0.1	0.25	0.15	1.2	1.5	0.15	0.2	0.3	0.4	0.9	2
Alkalinity	mg/l			100	155	168	179	117	153	185	182	157	185	302	356
Boron	mg/l			0.056	0.057	0.12	0.13	0.072	0.062	0.072	0.079	0.069	0.077	0.099	0.11
Bicarbonate as HCO3,calculated	mg/l			122	188	205	218	142	186	225	221	191	225	368	434
Calcium, Total, ICAP	mg/l			41	42	93	96	42	45	50	51	50	51	190	200
Carbonate as CO3, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			125	128	306	314	129	137	159	162	154	157	635	668
Chloride	mg/l	500	S	5.5	5.2	73	72	5.5	4.9	5.8	5.5	5.8	5.3	150	130
Fluoride	mg/l	2	P	0.28	0.26	0.38	0.35	0.3	0.29	0.44	0.41	0.34	0.34	0.36	0.33
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.3	0.6	0.5	0.8	0.4	0.7	0.6	0.7	0.5	0.7	0.9	1.3
Magnesium, Total, ICAP	mg/l			5.4	5.6	18	18	5.8	6.1	8.2	8.5	7.1	7.3	39	41
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	3.4	3.2	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total, ICAP	mg/l			2.5	2.8	3.9	4.3	2.2	2.6	2.4	2.5	2.5	2.7	4.2	4.2
Sodium, Total, ICAP	mg/l			22	25	39	44	21	23	19	21	20	22	53	57
Sulfate	mg/l	500	S	19	19	120	110	18	16	16	16	16	15	210	210
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Nitrate, Nitrite-N, CALC	mg/l	10		ND	ND	3.4	3.2	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			ND	ND	0.42	0.38	ND	ND	ND	ND	ND	0.38	1.5	1.3
Carbon Dioxide	mg/l			2	2.4	6.7	4.5	ND	ND	3.7	2.9	3.1	2.9	19	11
General Physical															
Apparent Color	ACU	15	S	ND	ND	ND	ND	ND	3	ND	3	3	3	5	3
Lab pH	Units			8	8.1	7.7	7.9	8.1	8.2	8	8.1	8	8.1	7.5	7.8
Odor	TON	3	S	1	**3**	2	2	2	**3**	2	2	2	2	2	2
pH of CaCO3 saturation(25C)	Units			7.7	7.5	7.2	7.1	7.7	7.5	7.4	7.4	7.5	7.4	6.6	6.5
pH of CaCO3 saturation(60C)	Units			7.3	7.1	6.7	6.7	7.2	7.1	6.9	6.9	7	6.9	6.2	6.1
Specific Conductance	umho/cm	1600	S	358	345	828	798	364	347	409	391	406	387	1480	1420
Metal															
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	2.6	2.4	2	2	3.2	3.1	8.9	8.8	**18**	**18**	6.1	5.9
Barium, Total, ICAP/MS	ug/l	100	P	**110**	**110**	**150**	**170**	**110**	**120**	**160**	**170**	**170**	**180**	**120**	**120**
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	ND	ND	1.2	1.4	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compound															
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l	80	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluorotrichloromethane-Freon11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ng/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TBA	ug/l			ND		ND		ND		ND		ND		ND	
Di-Isopropyl Ether	0		0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	0		0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	0		0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (p): Primary MCL (s): Secondary MCL (ND): Not Detected

TABLE 4.2
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2007/2008

Constituents	Units	MCL	MCL Type	Commerce #1	Commerce #1	Commerce #1	Commerce #1	Commerce #1	Commerce #1	Commerce #1	Commerce #1	Commerce #1	Commerce #1
				Zone 2	Zone 2	Zone 3	Zone 3	Zone 4	Zone 4	Zone 5	Zone 5	Zone 6	Zone 6
				04/21/08	09/24/08	04/21/08	09/24/08	04/21/08	09/24/08	04/21/08	09/24/08	04/21/08	09/24/08
General Mineral													
Total Dissolved Solid (TDS)	mg/l	1000	S	638	764	464	592	472	548	456	478	406	412
Cation Sum	meq/l			12	11	7.8	8.3	8	8.3	7.3	7.5	6.1	6.4
Anion Sum	meq/l			12	12	8.3	8.1	6.8	8.7	7.6	7.5	6.8	6.5
Iron, Total, ICAP	mg/l	0.3	S	ND	0.024	0.075	0.077	0.056	0.065	ND	ND	ND	ND
Manganese, Total, ICAP/MS	ug/l	50	S	12	11	**54**	45	**69**	**62**	ND	ND	ND	ND
Turbidity	NTU	5	S	0.2	0.25	0.15	0.25	0.15	0.15	0.1	0.2	0.6	0.8
Alkalinity	mg/l			308	285	226	197	202	199	176	169	180	173
Boron	mg/l			0.51	0.52	0.22	0.22	0.24	0.23	0.15	0.14	0.13	0.12
Bicarbonate as HCO3,calculated	mg/l			375	347	275	240	246	242	214	206	219	210
Calcium, Total, ICAP	mg/l			57	52	57	59	45	46	70	71	55	57
Carbonate as CO3, Calculated	mg/l			ND	2.8	ND	2	ND	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			249	233	221	234	186	197	257	264	207	221
Chloride	mg/l	500	S	190	210	99	110	46	120	70	69	61	58
Fluoride	mg/l	2	P	0.37	0.38	0.36	0.36	0.45	0.45	0.37	0.39	0.47	0.48
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.8	0.9	0.7	0.8	0.5	0.6	0.4	0.7	0.4	0.6
Magnesium, Total, ICAP	mg/l			26	25	19	21	18	20	20	21	17	19
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	ND	ND	ND	ND	4.1	4.1	6.3	6.2
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total, ICAP	mg/l			6.2	5.7	3.1	3.4	3.1	3.3	2.2	2.2	1.7	1.8
Sodium, Total, ICAP	mg/l			150	150	75	82	97	99	48	49	43	45
Sulfate	mg/l	500	S	ND	ND	48	48	67	62	88	87	46	44
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Nitrate, Nitrite-N, CALC	mg/l	10		ND	ND	ND	ND	ND	ND	4.1	4.1	6.3	6.2
Total Organic Carbon	mg/l			3.8	3.9	0.86	1	0.74	0.64	0.3	ND	ND	ND
Carbon Dioxide	mg/l			7.7	4.5	5.7	3.1	5.1	4	7	3.4	5.7	3.4
General Physical													
Apparent Color	ACU	15	S	**30**	**20**	5	5	5	5	ND	ND	3	ND
Lab pH	Units			7.9	8.1	7.9	8.1	7.9	8	7.7	8	7.8	8
Odor	TON	3	S	**17**	**8**	2	2	**3**	2	1	1	**3**	1
pH of CaCO3 saturation(25C)	Units			7.1	7.2	7.2	7.3	7.4	7.4	7.3	7.3	7.4	7.4
pH of CaCO3 saturation(60C)	Units			6.7	6.7	6.8	6.9	7	7	6.8	6.8	6.9	6.9
Specific Conductance	umho/cm	1600	S	1160	1210	815	851	866	872	767	757	654	662
Metal													
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium, Total, ICAP/MS	ug/l	100	P	86	77	**110**	89	**240**	**240**	89	81	57	54
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	1	6.3	6.7	12	11
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compound													
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	2.4	2.1	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	0.6	0.7	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l	80	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluorotrichloromethane-Freon11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ng/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TBA	ug/l			ND		ND		ND		ND		ND	
Di-Isopropyl Ether	0		0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	0		0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	0		0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (p): Primary MCL (s): Secondary MCL (ND): Not Detected

TABLE 4.2
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2007/2008

Constituents	Units	MCL	MCL Type	Compton #1 Zone 1 05/01/08	Compton #1 Zone 1 09/10/08	Compton #1 Zone 2 05/01/08	Compton #1 Zone 2 09/10/08	Compton #1 Zone 3 05/01/08	Compton #1 Zone 3 09/10/08	Compton #1 Zone 4 05/01/08	Compton #1 Zone 4 09/10/08
General Mineral											
Total Dissolved Solid (TDS)	mg/l	1000	S	214	244	278	276	272	304	328	332
Cation Sum	meq/l			3.7	3.9	4.6	4.8	5	5.1	5.5	5.5
Anion Sum	meq/l			3.4	3.9	3.5	4.6	4.1	5	4.8	5.4
Iron, Total, ICAP	mg/l	0.3	S	ND	ND	ND	ND	0.029	0.031	0.086	0.08
Manganese, Total, ICAP/MS	ug/l	50	S	13	12	21	20	**58**	**63**	**83**	**85**
Turbidity	NTU	5	S	0.25	0.25	0.1	0.1	0.4	0.85	ND	0.5
Alkalinity	mg/l			153	177	90	143	111	159	140	170
Boron	mg/l			0.15	0.16	0.11	0.1	0.12	0.12	0.1	0.095
Bicarbonate as HCO3,calculated	mg/l			185	215	109	174	135	193	170	207
Calcium, Total, ICAP	mg/l			20	20	40	40	49	49	62	60
Carbonate as CO3, Calculated	mg/l			3	3.5	ND	2.3	ND	2	ND	ND
Hardness (Total, as CaCO3)	mg/l			56.9	56.9	114	114	160	160	181	176
Chloride	mg/l	500	S	13	13	19	19	24	23	19	20
Fluoride	mg/l	2	P	0.32	0.31	0.35	0.34	0.29	0.27	0.27	0.26
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.5	0.6	0.5	0.7	0.7	0.7	0.8	0.7
Magnesium, Total, ICAP	mg/l			1.7	1.7	3.5	3.4	9.1	9.1	6.4	6.3
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total, ICAP	mg/l			1.6	1.5	1.7	1.7	2.7	2.8	2.6	2.5
Sodium, Total, ICAP	mg/l			59	63	53	57	40	43	42	44
Sulfate	mg/l	500	S	0.71	ND	57	55	59	57	71	70
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND
Total Nitrate, Nitrite-N, CALC	mg/l	10		ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			3.2	2.9	0.92	0.75	0.74	0.61	0.35	ND
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	2	ND	2.7
General Physical											
Apparent Color	ACU	15	S	**25**	**25**	3	5	3	5	3	5
Lab pH	Units			8.4	8.4	8.3	8.3	8.3	8.2	8.2	8.1
Odor	TON	3	S	1	**3**	1	**3**	**3**	**3**	**3**	**4**
pH of CaCO3 saturation(25C)	Units			7.9	7.8	7.8	7.6	7.6	7.5	7.4	7.4
pH of CaCO3 saturation(60C)	Units			7.4	7.4	7.4	7.2	7.2	7	7	6.9
Specific Conductance	umho/cm	1600	S	360	369	468	465	500	493	528	527
Metal											
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	ND	ND	ND	ND	ND	ND	**26**	**25**
Barium, Total, ICAP/MS	ug/l	100	P	ND	7.9	14	14	61	63	**160**	**160**
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1000	S	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compound											
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l	80	P	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
Fluorotrichloromethane-Freon11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200		ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770		ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260		ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ng/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND
TBA	ug/l			ND		ND		ND		ND	
Di-Isopropyl Ether	0		0	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	0		0	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	0		0	ND	ND	ND	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (p): Primary MCL (s): Secondary MCL (ND): Not Detected

TABLE 4.2
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2007/2008

Constituents	Units	MCL	MCL Type	Compton #2 Zone 1 09/30/08	Compton #2 Zone 2 09/30/08	Compton #2 Zone 3 09/30/08	Compton #2 Zone 4 09/30/08	Compton #2 Zone 5 09/30/08	Compton #2 Zone 6 09/30/08
General Mineral									
Total Dissolved Solid (TDS)	mg/l	1000	S	584	568	340	378	408	582
Cation Sum	meq/l			9.9	6	4.9	6	6.3	7.2
Anion Sum	meq/l			9.2	5.6	4.7	5.7	6	7
Iron, Total, ICAP	mg/l	0.3	S	0.045	0.031	ND	0.028	0.19	ND
Manganese, Total, ICAP/MS	ug/l	50	S	13	39	29	40	**100**	27
Turbidity	NTU	5	S	1.4	2.4	3.4	0.15	**26**	1.8
Alkalinity	mg/l			438	262	150	172	174	165
Boron	mg/l			0.67	0.19	0.11	0.12	0.12	0.15
Bicarbonate as HCO3,calculated	mg/l			532	318	182	209	211	201
Calcium, Total, ICAP	mg/l			11	26	40	58	60	69
Carbonate as CO3, Calculated	mg/l			6.9	3.3	ND	ND	2.2	ND
Hardness (Total, as CaCO3)	mg/l			36.1	85.9	125	190	201	238
Chloride	mg/l	500	S	14	13	19	26	32	63
Fluoride	mg/l	2	P	0.38	0.25	0.21	0.23	0.31	0.35
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.6	0.7	0.6	0.7	0.9	0.7
Magnesium, Total, ICAP	mg/l			2.1	5.1	6.1	11	13	16
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	ND	ND	ND	ND
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND
Potassium, Total, ICAP	mg/l			2.9	4.2	2.8	2.7	4	4.2
Sodium, Total, ICAP	mg/l			210	97	53	48	49	54
Sulfate	mg/l	500	S	ND	ND	54	73	77	92
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND
Total Nitrate, Nitrite-N, CALC	mg/l	10		ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			13	3.1	0.91	0.49	0.5	1.1
Carbon Dioxide	mg/l			4.4	3.3	ND	2.7	2.2	3.3
General Physical									
Apparent Color	ACU	15	S	**150**	**30**	10	5	10	10
Lab pH	Units			8.3	8.2	8.2	8.1	8.2	8
Odor	TON	3	S	**4**	**3**	2	2	2	**4**
pH of CaCO3 saturation(25C)	Units			7.7	7.5	7.6	7.4	7.3	7.3
pH of CaCO3 saturation(60C)	Units			7.2	7.1	7.1	6.9	6.9	6.9
Specific Conductance	umho/cm	1600	S	897	550	481	587	600	714
Metal									
Aluminum, Total, ICAP/MS	ug/l	1000	P	351	ND	ND	ND	51	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	1.4	ND	ND	1.3	1.8	5.7
Barium, Total, ICAP/MS	ug/l	100	P	14	18	24	29	93	58
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1000	S	3.1	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15	P	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	5.6
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	31	ND	ND	ND	66	ND
Volatile Organic Compound									
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l	80	P	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND
Fluorotrichloromethane-Freon11	ug/l	150	P	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200		ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770		ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260		ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l			ND	ND	ND	ND	ND	ND
Benzene	ug/l	0.5	P	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND
MTBE	ng/l	13	P	ND	ND	ND	ND	ND	ND
TBA	ug/l								
Di-Isopropyl Ether	0		0	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	0		0	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	0		0	ND	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (p): Primary MCL (s): Secondary MCL (ND): Not Detected

TABLE 4.2
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2007/2008

Constituents	Units	MCL	MCL Type	Downey #1	Downey #1	Downey #1	Downey #1	Downey #1	Downey #1	Downey #1	Downey #1	Downey #1	Downey #1	Downey #1	Downey #1
				Zone 1	Zone 1	Zone 2	Zone 2	Zone 3	Zone 3	Zone 4	Zone 4	Zone 5	Zone 5	Zone 6	Zone 6
				04/28/08	09/15/08	04/28/08	09/15/08	04/28/08	09/15/08	04/28/08	09/15/08	04/28/08	09/15/08	04/28/08	09/15/08
General Mineral															
Total Dissolved Solid (TDS)	mg/l	1000	S	188	538	372	306	494	358	538	210	410	590	936	882
Cation Sum	meq/l			3.8	3.7	6.5	6.3	8.6	7.9	9.1	8.8	7.4	6.9	16	16
Anion Sum	meq/l			2.5	4.3	6.3	6.4	8	7.7	8.4	9.5	6.1	10	15	16
Iron, Total, ICAP	mg/l	0.3	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.031	ND
Manganese, Total, ICAP/MS	ug/l	50	S	ND	ND	ND	ND	ND	ND	ND	ND	**130**	**120**	**90**	**75**
Turbidity	NTU	5	S	ND	0.1	0.15	0.65	0.25	0.2	0.1	0.25	3.3	2.1	3.9	0.9
Alkalinity	mg/l			99	196	158	169	167	160	156	218	165	382	304	381
Boron	mg/l			0.061	0.058	0.066	0.061	0.091	0.084	0.2	0.2	0.093	0.084	0.22	0.22
Bicarbonate as HCO3,calculated	mg/l			120	238	192	206	203	195	190	265	201	465	370	464
Calcium, Total, ICAP	mg/l			42	41	84	81	110	100	97	94	93	86	190	180
Carbonate as CO3, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	2.4	ND	ND
Hardness (Total, as CaCO3)	mg/l			130	126	263	256	357	324	325	313	306	285	627	602
Chloride	mg/l	500	S	5	4.7	37	33	68	63	77	73	38	33	110	110
Fluoride	mg/l	2	P	0.32	0.32	0.28	0.27	0.33	0.33	0.4	0.4	0.4	0.4	0.3	0.26
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.5	0.6	0.9	0.8	1	0.8	0.9	0.9	0.9	1.1	1.3	1.2
Magnesium, Total, ICAP	mg/l			6	5.8	13	13	20	18	20	19	18	17	37	37
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	1.9	2	3.2	3.3	1.9	2	ND	ND	ND	ND
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total, ICAP	mg/l			2.9	2.8	3.6	3.5	3.4	3.2	4.4	4.2	3.7	3.5	6	5.7
Sodium, Total, ICAP	mg/l			25	25	27	26	31	30	58	56	26	25	81	80
Sulfate	mg/l	500	S	17	15.8	94	92	120	120	140	140	83	81	260	260
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Nitrate, Nitrite-N, CALC	mg/l	10		ND	ND	1.9	2	3.2	3.3	1.9	2	ND	ND	ND	ND
Total Organic Carbon	mg/l			0.43	ND	ND	ND	ND	0.3	0.51	0.44	0.4	ND	0.77	0.91
Carbon Dioxide	mg/l			ND	3.1	2.5	3.4	2.6	3.2	2.5	5.5	2.6	9.6	7.6	15
General Physical															
Apparent Color	ACU	15	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3	ND
Lab pH	Units			8.2	8.1	8.1	8	8.1	8	8.1	7.9	8.1	7.9	7.9	7.7
Odor	TON	3	S	2	2	1	2	1	2	2	2	2	2	1	2
pH of CaCO3 saturation(25C)	Units			7.7	7.5	7.2	7.2	7.1	7.2	7.2	7	7.2	6.8	6.6	6.5
pH of CaCO3 saturation(60C)	Units			7.3	7	6.8	6.8	6.7	6.7	6.7	6.6	6.7	6.4	6.2	6.1
Specific Conductance	umho/cm	1600	S	348	337	610	589	766	755	862	847	658	640	1400	1390
Metal															
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	3.1	3	2.4	2.4	2.9	2.9	1.9	2.1	4.4	4.1	2.2	2.3
Barium, Total, ICAP/MS	ug/l	100	P	93	**100**	**160**	**180**	**130**	**140**	89	84	**250**	**230**	75	76
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	3.8	3.7	2	2.1	1.3	1.5	ND	ND	ND	ND	ND	ND
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compound															
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	0.98	1.1	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	0.6	0.8	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.7
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l	80	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluorotrichloromethane-Freon11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ng/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TBA	ug/l			ND		ND		ND		ND		ND		ND	
Di-Isopropyl Ether	0		0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	0		0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	0		0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (p): Primary MCL (s): Secondary MCL (ND): Not Detected

TABLE 4.2
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2007/2008

Constituents	Units	MCL	MCL Type	Huntington Park #1		Huntington Park #1		Huntington Park #1		Huntington Park #1	
				Zone 1		Zone 2		Zone 3		Zone 4	
				04/30/08		04/30/08		04/30/08		04/30/08	
General Mineral											
Total Dissolved Solid (TDS)	mg/l	1000	S	386		372		462		698	
Cation Sum	meq/l			6.1		6.1		7.6		12	
Anion Sum	meq/l			5.7		5.6		7.3		10	
Iron, Total, ICAP	mg/l	0.3	S	0.25		ND		ND		ND	
Manganese, Total, ICAP/MS	ug/l	50	S	48		ND		ND		ND	
Turbidity	NTU	5	S	1.4		0.2		ND		0.1	
Alkalinity	mg/l			164		165		179		238	
Boron	mg/l			0.14		0.15		0.16		0.18	
Bicarbonate as HCO3,calculated	mg/l			199		200		218		289	
Calcium, Total, ICAP	mg/l			62		62		79		130	
Carbonate as CO3, Calculated	mg/l			ND		2.1		ND		2.4	
Hardness (Total, as CaCO3)	mg/l			217		217		280		461	
Chloride	mg/l	500	S	19		19		37		63	
Fluoride	mg/l	2	P	0.54		0.46		0.41		0.39	
Hydroxide as OH, Calculated	mg/l			ND		ND		ND		ND	
Langelier Index - 25 degree	None			0.7		0.8		0.9		1.2	
Magnesium, Total, ICAP	mg/l			15		15		20		33	
Mercury	ug/l	2	P	ND		ND		ND		ND	
Nitrate-N by IC	mg/l	10	P	ND		ND		2		4.7	
Nitrite, Nitrogen by IC	mg/l	1	P	ND		ND		ND		ND	
Potassium, Total, ICAP	mg/l			3.2		3.3		3.6		4.7	
Sodium, Total, ICAP	mg/l			38		38		44		56	
Sulfate	mg/l	500	S	88		82		120		170	
Surfactants	mg/l	0.5	S	ND		ND		ND		ND	
Total Nitrate, Nitrite-N, CALC	mg/l	10		ND		ND		2		4.7	
Total Organic Carbon	mg/l			ND		0.48		ND		0.31	
Carbon Dioxide	mg/l			2.6		2.1		2.8		3.8	
General Physical											
Apparent Color	ACU	15	S	3		3		3		ND	
Lab pH	Units			8.1		8.2		8.1		8.1	
Odor	TON	3	S	2		2		**3**		2	
pH of CaCO3 saturation(25C)	Units			7.4		7.4		7.2		6.9	
pH of CaCO3 saturation(60C)	Units			6.9		6.9		6.8		6.4	
Specific Conductance	umho/cm	1600	S	572		571		720		1060	
Metal											
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND		ND		ND		ND	
Antimony, Total, ICAP/MS	ug/l	6	P	ND		ND		ND		ND	
Arsenic, Total, ICAP/MS	ug/l	10	P	ND		ND		ND		ND	
Barium, Total, ICAP/MS	ug/l	100	P	59		73		81		91	
Beryllium, Total, ICAP/MS	ug/l	4	P	ND		ND		ND		ND	
Chromium, Total, ICAP/MS	ug/l	50	P	2.6		ND		ND		4.3	
Cadmium, Total, ICAP/MS	ug/l	5	P	ND		ND		ND		ND	
Copper, Total, ICAP/MS	ug/l	1000	S	ND		ND		ND		ND	
Lead, Total, ICAP/MS	ug/l	15	P	ND		ND		ND		ND	
Nickel, Total, ICAP/MS	ug/l	100	P	ND		ND		ND		ND	
Selenium, Total, ICAP/MS	ug/l	50	P	ND		ND		ND		5.5	
Silver, Total, ICAP/MS	ug/l	100	S	ND		ND		ND		ND	
Thallium, Total, ICAP/MS	ug/l	2	P	ND		ND		ND		ND	
Zinc, Total, ICAP/MS	ug/l	5000	S	ND		ND		ND		33	
Volatile Organic Compound											
Trichloroethylene (TCE)	ug/l	5	P	ND		ND		1.2		0.6	
Tetrachloroethylene (PCE)	ug/l	5	P	ND		ND		ND		0.5	
1,1-Dichloroethylene	ug/l	6	P	ND		ND		ND		ND	
cis-1,2-Dichloroethylene	ug/l	6	P	ND		ND		ND		ND	
trans-1,2-Dichloroethylene	ug/l	10	P	ND		ND		ND		ND	
Chloroform (Trichloromethane)	ug/l	80	P	ND		ND		ND		ND	
Carbon Tetrachloride	ug/l	0.5	P	ND		ND		**1.2**		ND	
1,1-Dichloroethane	ug/l	5	P	ND		ND		ND		ND	
1,2-Dichloroethane	ug/l	0.5	P	ND		ND		ND		ND	
Fluorotrichloromethane-Freon11	ug/l	150	P	ND		ND		ND		ND	
Freon 113	ug/l	1200		ND		ND		ND		ND	
Isopropylbenzene	ug/l	770		ND		ND		ND		ND	
n-Propylbenzene	ug/l	260		ND		ND		ND		ND	
m,p-Xylenes	ug/l	1750	P	ND		ND		ND		ND	
Methylene Chloride	ug/l	5	P	ND		ND		ND		ND	
Toluene	ug/l	150	P	ND		ND		ND		ND	
Dichlorodifluoromethane	ug/l			ND		ND		ND		ND	
Benzene	ug/l	0.5	P	ND		ND		ND		ND	
Ethyl benzene	ug/l	300	P	ND		ND		ND		ND	
MTBE	ng/l	13	P	ND		ND		ND		ND	
TBA	ug/l			ND		ND		ND		ND	
Di-Isopropyl Ether	0		0	ND		ND		ND		ND	
Tert Amyl Methyl Ether	0		0	ND		ND		ND		ND	
Ethyl Tert Butyl Ether	0		0	ND		ND		ND		ND	

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (p): Primary MCL (s): Secondary MCL (ND): Not Detected

TABLE 4.2
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2007/2008

Constituents	Units	MCL	MCL Type	Inglewood #2	Inglewood #2	Inglewood #2	Inglewood #2	Inglewood #2	Inglewood #2
				Zone 1	Zone 1	Zone 2	Zone 2	Zone 3	Zone 3
				05/08/08	09/08/08	05/08/08	09/08/08	05/08/08	09/08/08
General Mineral									
Total Dissolved Solid (TDS)	mg/l	1000	S	**1650**	**1720**	**1480**	**1510**	310	306
Cation Sum	meq/l			27	30	25	28	5	5.5
Anion Sum	meq/l			25	29	22	28	4	5.5
Iron, Total, ICAP	mg/l	0.3	S	**0.61**	**0.58**	**0.51**	**0.43**	0.092	0.1
Manganese, Total, ICAP/MS	ug/l	50	S	28	28	26	25	38	44
Turbidity	NTU	5	S	2.9	3.1	**18**	**26**	1.2	0.6
Alkalinity	mg/l			1200	1440	1100	1360	170	251
Boron	mg/l			3.9	3.9	3.6	3.5	0.2	0.22
Bicarbonate as HCO3,calculated	mg/l			1460	1750	1340	1650	206	305
Calcium, Total, ICAP	mg/l			17	19	12	12	31	33
Carbonate as CO3, Calculated	mg/l			15	11	17	13	2.7	2.5
Hardness (Total, as CaCO3)	mg/l			117	122	71.1	69.9	123	132
Chloride	mg/l	500	S	31	5.7	17	19	21	18
Fluoride	mg/l	2	P	0.59	0.55	0.32	0.3	0.25	0.24
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			1.1	1.1	1.1	1	0.7	0.7
Magnesium, Total, ICAP	mg/l			18	18	10	9.7	11	12
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	ND	ND	ND	ND
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND
Potassium, Total, ICAP	mg/l			25	26	20	20	6.1	7
Sodium, Total, ICAP	mg/l			560	620	540	590	56	62
Sulfate	mg/l	500	S	ND	ND	ND	ND	ND	ND
Surfactants	mg/l	0.5	S	ND	ND	0.053	ND	ND	ND
Total Nitrate, Nitrite-N, CALC	mg/l	10		ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			36	38	25	23	1.3	1.2
Carbon Dioxide	mg/l			15	29	11	21	ND	4
General Physical									
Apparent Color	ACU	15	S	**250**	**200**	**150**	**150**	**15**	10
Lab pH	Units			8.2	8	8.3	8.1	8.3	8.1
Odor	TON	3	S	**40**	**67**	**40**	**17**	**4**	**40**
pH of CaCO3 saturation(25C)	Units			7.1	6.9	7.2	7.1	7.6	7.4
pH of CaCO3 saturation(60C)	Units			6.6	6.5	6.8	6.7	7.2	7
Specific Conductance	umho/cm	1600	S	**2430**	**2480**	**2260**	**2330**	519	514
Metal									
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	ND	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	1.3	1.1	ND	ND	ND	ND
Barium, Total, ICAP/MS	ug/l	100	P	42	40	23	23	17	19
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	1.4	1.5	1.4	1.2	ND	ND
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1000	S	ND	2.3	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15	P	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND	ND
Volatile Organic Compound									
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l	80	P	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND
Fluorotrichloromethane-Freon11	ug/l	150	P	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200		ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770		ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260		ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l			ND	ND	ND	ND	ND	ND
Benzene	ug/l	0.5	P	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND
MTBE	ng/l	13	P	ND	ND	ND	ND	ND	ND
TBA	ug/l			ND		ND		ND	
Di-Isopropyl Ether	0		0	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	0		0	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	0		0	ND	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (p): Primary MCL (s): Secondary MCL (ND): Not Detected

TABLE 4.2
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2007/2008

Constituents	Units	MCL	MCL Type	La Mirada #1	La Mirada #1	La Mirada #1	La Mirada #1	La Mirada #1	La Mirada #1	La Mirada #1	La Mirada #1	La Mirada #1	La Mirada #1
				Zone 1	Zone 1	Zone 2	Zone 2	Zone 3	Zone 3	Zone 4	Zone 4	Zone 5	Zone 5
				04/01/08	09/14/08	04/01/08	09/14/08	04/01/08	09/14/08	04/01/08	09/14/08	04/01/08	09/14/08
General Mineral													
Total Dissolved Solid (TDS)	mg/l	1000	S	358	352	252	264	326	334	394	402	704	952
Cation Sum	meq/l			5.4	5.9	4.1	4.3	5.3	5.4	6.8	6.6	11	15
Anion Sum	meq/l			5.2	5.6	3.9	4.2	4.8	5.4	6.6	6.7	10	3.6
Iron, Total, ICAP	mg/l	0.3	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Manganese, Total, ICAP/MS	ug/l	50	S	11	10	4	3.4	19	17	**64**	17	29	7.7
Turbidity	NTU	5	S	0.15	0.25	0.25	0.15	0.3	0.25	0.2	0.4	0.4	0.3
Alkalinity	mg/l			124	156	122	141	152	190	187	200	144	180
Boron	mg/l			0.14	0.15	0.098	0.1	0.14	0.14	0.12	0.13	0.14	0.15
Bicarbonate as HCO3,calculated	mg/l			150	189	148	171	185	231	228	243	175	219
Calcium, Total, ICAP	mg/l			15	15	9.7	9.6	22	22	45	44	87	120
Carbonate as CO3, Calculated	mg/l			ND	2.5	2.4	2.2	ND	2.4	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			51	51	30.4	30.1	85.4	84.6	182	176	345	468
Chloride	mg/l	500	S	26	22.6	15	13.1	17	14.5	34	30.8	170	ND
Fluoride	mg/l	2	P	0.78	0.8	0.56	0.57	0.75	0.76	0.56	0.56	0.38	0.28
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.2	0.3	0.1	0.1	0.2	0.5	0.4	0.6	0.5	0.8
Magnesium, Total, ICAP	mg/l			3.3	3.3	1.5	1.5	7.4	7.2	17	16	31	41
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	**11**	ND
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total, ICAP	mg/l			2	2	1.7	1.6	2.4	2.4	2.7	2.7	3.4	3.9
Sodium, Total, ICAP	mg/l			100	110	80	83	82	84	70	70	95	120
Sulfate	mg/l	500	S	91	88	48	47	58	56	91	88	86	ND
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Nitrate, Nitrite-N, CALC	mg/l	10		ND	ND	ND	ND	ND	ND	ND	ND	**11**	ND
Total Organic Carbon	mg/l			0.47	ND	0.32	ND	0.57	0.35	0.39	0.35	0.45	ND
Carbon Dioxide	mg/l			ND	ND	ND	ND	3	2.4	5.9	4	4.5	5.7
General Physical													
Apparent Color	ACU	15	S	ND	3	ND	ND	5	5	ND	ND	ND	ND
Lab pH	Units			8.3	8.3	8.4	8.3	8	8.2	7.8	8	7.8	7.8
Odor	TON	3	S	1	2	2	2	1	1	2	2	2	2
pH of CaCO3 saturation(25C)	Units			8.1	8	8.3	8.2	7.8	7.7	7.4	7.4	7.3	7
pH of CaCO3 saturation(60C)	Units			7.6	7.5	7.8	7.8	7.4	7.3	7	7	6.8	6.6
Specific Conductance	umho/cm	1600	S	560	572	423	421	515	520	643	645	1160	1530
Metal													
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	6.4	5.4	7.8	7.3	7	6.9	3.4	3.7	1.2	1.2
Barium, Total, ICAP/MS	ug/l	100	P	57	60	24	26	41	40	44	44	85	**120**
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	1.4	3.4
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	9.7	12
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compound													
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l	80	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluorotrichloromethane-Freon11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ng/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TBA	ug/l			ND		ND		ND		ND		ND	
Di-Isopropyl Ether	0		0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	0		0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	0		0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (p): Primary MCL (s): Secondary MCL (ND): Not Detected

TABLE 4.2
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2007/2008

Constituents	Units	MCL	MCL Type	Lakewood #1	Lakewood #1	Lakewood #1	Lakewood #1	Lakewood #1	Lakewood #1	Lakewood #1	Lakewood #1	Lakewood #1	Lakewood #1	Lakewood #1	Lakewood #1
				Zone 1	Zone 1	Zone 2	Zone 2	Zone 3	Zone 3	Zone 4	Zone 4	Zone 5	Zone 5	Zone 6	Zone 6
				04/17/08	09/23/08	04/17/08	09/23/08	04/17/08	09/23/08	04/17/08	09/23/08	04/17/08	09/23/08	04/17/08	09/23/08
General Mineral															
Total Dissolved Solid (TDS)	mg/l	1000	S	172	192	184	402	238	240	238	292	230	244	410	434
Cation Sum	meq/l			2.7	2.7	3.3	3.2	3.6	3.7	4.5	4.5	4.3	4.1	7.1	6.8
Anion Sum	meq/l			3	2.6	3.5	3.2	3.9	3.3	4.5	4.4	4.1	3.8	6.1	5.9
Iron, Total, ICAP	mg/l	0.3	S	ND	ND	ND	ND	ND	ND	0.059	0.059	0.1	0.099	0.097	0.093
Manganese, Total, ICAP/MS	ug/l	50	S	ND	ND	15	17	22	23	**79**	**92**	**52**	**55**	**249**	**260**
Turbidity	NTU	5	S	0.3	0.3	0.25	0.35	0.9	0.3	0.65	0.15	0.1	0.25	0.45	0.5
Alkalinity	mg/l			104	87	147	135	159	136	162	150	173	162	161	149
Boron	mg/l			0.056	0.054	ND	ND	0.065	0.061	0.069	0.066	0.097	0.08	0.088	0.077
Bicarbonate as HCO3,calculated	mg/l			125	105	179	164	193	165	197	182	210	197	196	181
Calcium, Total, ICAP	mg/l			9.7	9.8	31	30	38	38	48	46	48	46	92	88
Carbonate as CO3, Calculated	mg/l			4.1	3.4	ND	2.1	ND	ND	ND	ND	2.2	2	ND	ND
Hardness (Total, as CaCO3)	mg/l			25.6	25.9	93.1	90.1	115	115	145	140	157	150	269	257
Chloride	mg/l	500	S	21	19	6.4	5.9	10	9.5	33	38	11	10	73	74
Fluoride	mg/l	2	P	0.49	0.44	0.28	0.26	0.32	0.3	0.34	0.31	0.52	0.47	0.23	0.22
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.4	0.3	0.5	0.5	0.5	0.6	0.5	0.7	0.8	0.7	0.5	0.8
Magnesium, Total, ICAP	mg/l			0.34	0.35	3.8	3.7	4.8	4.9	6.1	6	9.1	8.6	9.5	9.1
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total, ICAP	mg/l			ND	ND	2.1	2.1	2.2	2.3	2.7	2.7	2.7	2.6	3.8	3.6
Sodium, Total, ICAP	mg/l			51	51	32	32	29	30	35	37	25	24	38	36
Sulfate	mg/l	500	S	15	15	16	15	18	16	14	13	14	13	40	40
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.092	ND
Total Nitrate, Nitrite-N, CALC	mg/l	10		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			0.81	0.88	ND	0.32	ND	ND	0.52	0.6	0.39	ND	0.62	0.68
Carbon Dioxide	mg/l			ND	ND	ND	ND	2.5	ND	3.2	ND	2.2	2	6.4	3
General Physical															
Apparent Color	ACU	15	S	**15**	**15**	ND	3	3	3	5	5	5	5	3	3
Lab pH	Units			8.7	8.7	8.2	8.3	8.1	8.2	8	8.2	8.2	8.2	7.7	8
Odor	TON	3	S	1	1	1	2	1	2	1	2	1	2	1	1
pH of CaCO3 saturation(25C)	Units			8.3	8.4	7.7	7.8	7.6	7.6	7.5	7.5	7.4	7.5	7.2	7.2
pH of CaCO3 saturation(60C)	Units			7.9	8	7.3	7.3	7.1	7.2	7	7.1	7	7	6.7	6.8
Specific Conductance	umho/cm	1600	S	281	284	322	313	356	354	440	463	385	394	689	698
Metal															
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	5.9	**10**	ND	ND	ND	1.1	**11**	**12**	3.7	3.7	**24**	**24**
Barium, Total, ICAP/MS	ug/l	100	P	ND	17	19	22	27	31	**130**	**150**	**110**	**120**	**250**	**270**
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compound															
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l	80	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluorotrichloromethane-Freon11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ng/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TBA	ug/l			ND		ND		ND		ND		ND		ND	
Di-Isopropyl Ether	0		0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	0		0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	0		0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (p): Primary MCL (s): Secondary MCL (ND): Not Detected

TABLE 4.2
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2007/2008

Constituents	Units	MCL	MCL Type	Long Beach #1	Long Beach #1	Long Beach #1	Long Beach #1	Long Beach #1	Long Beach #1	Long Beach #1	Long Beach #1	Long Beach #1	Long Beach #1	Long Beach #1	Long Beach #1
				Zone 1	Zone 1	Zone 2	Zone 2	Zone 3	Zone 3	Zone 4	Zone 4	Zone 5	Zone 5	Zone 6	Zone 6
				04/11/08	09/03/08	04/11/08	09/03/08	04/11/08	09/03/08	04/11/08	09/03/08	04/11/08	09/03/08	04/11/08	09/03/08
General Mineral															
Total Dissolved Solid (TDS)	mg/l	1000	S	220	248	202	254	198	220	220	260	922	954	886	**1030**
Cation Sum	meq/l			3.6	3.5	3.6	3.5	2.8	3	3.4	3.7	14	14	14	15
Anion Sum	meq/l			3.5	4.4	3.6	4.1	2.5	3.6	3.8	4.4	15	17	13	14
Iron, Total, ICAP	mg/l	0.3	S	ND	ND	ND	ND	ND	ND	ND	ND	0.041	0.057	0.13	0.15
Manganese, Total, ICAP/MS	ug/l	50	S	4.6	ND	ND	ND	ND	ND	26	20	**100**	**85**	**110**	**370**
Turbidity	NTU	5	S	0.35	0.4	0.2	0.3	1	0.35	0.65	0.3	3.8	3.7	0.7	**38**
Alkalinity	mg/l			152	197	157	184	91	149	138	173	129	176	159	116
Boron	mg/l			0.21	0.2	0.19	0.19	0.087	0.097	0.057	0.079	0.1	0.11	0.11	0.1
Bicarbonate as HCO3,calculated	mg/l			181	235	186	220	108	179	167	210	157	214	194	141
Calcium, Total, ICAP	mg/l			2.3	2.2	2.6	2.5	5	5.1	21	19	86	77	170	180
Carbonate as CO3, Calculated	mg/l			12	12	12	11	5.6	7.3	2.2	3.4	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			6.65	6.36	7.11	6.82	13.6	13.9	60.7	55.3	266	242	515	581
Chloride	mg/l	500	S	15	14	15	14	12	11	12	11	250	270	160	200
Fluoride	mg/l	2	P	0.67	0.66	0.65	0.65	0.65	0.67	0.4	0.41	0.2	0.2	0.29	0.22
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.2	0.2	0.2	0.2	0.2	0.3	0.4	0.6	0.6	0.9	0.7	1
Magnesium, Total, ICAP	mg/l			0.22	0.21	0.15	0.14	0.28	0.29	2	1.9	13	12	29	32
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total, ICAP	mg/l			ND	ND	ND	ND	ND	ND	1.2	1.5	3.4	3.5	3.8	3.8
Sodium, Total, ICAP	mg/l			79	78	80	77	57	62	49	58	210	210	86	86
Sulfate	mg/l	500	S	ND	ND	ND	ND	13	14	32	30	240	260	260	300
Surfactants	mg/l	0.5	S	ND	ND	ND	0.066	ND	ND	ND	ND	ND	ND	ND	0.056
Total Nitrate, Nitrite-N, CALC	mg/l	10		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			3.1	2.8	3	2.7	1.6	1.5	0.56	0.67	1.2	1.2	1.2	1.1
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	3.2	2.8	6.3	2.3
General Physical															
Apparent Color	ACU	15	S	**60**	**60**	**70**	**80**	**35**	**30**	5	10	3	5	5	5
Lab pH	Units			9	8.9	9	8.9	8.9	8.8	8.3	8.4	7.9	8.1	7.7	8
Odor	TON	3	S	2	**4**	**3**	**3**	**3**	**4**	1	**3**	**3**	2	2	1
pH of CaCO3 saturation(25C)	Units			8.8	8.7	8.8	8.7	8.7	8.5	7.9	7.8	7.3	7.2	7	7
pH of CaCO3 saturation(60C)	Units			8.4	8.3	8.3	8.3	8.3	8	7.5	7.4	6.9	6.8	6.5	6.6
Specific Conductance	umho/cm	1600	S	356	347	352	339	312	303	378	364	**1620**	1540	1450	1540
Metal															
Aluminum, Total, ICAP/MS	ug/l	1000	P	55	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	1.5	ND	3.7	7.5
Barium, Total, ICAP/MS	ug/l	100	P	4.7	ND	ND	ND	ND	ND	8.5	7.5	70	66	16	**250**
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	4.7	ND	3.5
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1000	S	27	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15	P	2.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	64	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compound															
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l	80	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluorotrichloromethane-Freon11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ng/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TBA	ug/l			ND		ND		ND		ND		ND		ND	
Di-Isopropyl Ether	0		0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	0		0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	0		0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (p): Primary MCL (s): Secondary MCL (ND): Not Detected

Constituents	Units	MCL	MCL Type	Long Beach #2	Long Beach #2	Long Beach #2	Long Beach #2	Long Beach #2	Long Beach #2	Long Beach #2	Long Beach #2	Long Beach #2	Long Beach #2	Long Beach #2	Long Beach #2
				Zone 1	Zone 1	Zone 2	Zone 2	Zone 3	Zone 3	Zone 4	Zone 4	Zone 5	Zone 5	Zone 6	Zone 6
				05/20/08	09/17/08	05/20/08	09/17/08	05/20/08	09/17/08	05/20/08	09/17/08	05/20/08	09/17/08	05/20/08	09/17/08
General Mineral															
Total Dissolved Solid (TDS)	mg/l	1000	S	394	418	276	266	260	230	320	326	**1080**	908	**1060**	**1080**
Cation Sum	meq/l			6.6	7.1	4.1	4.6	3.7	3.8	4.7	5.1	16	17	19	20
Anion Sum	meq/l			6.6	6.5	4.3	4.2	3.8	3.5	4.7	5	18	16	20	19
Iron, Total, ICAP	mg/l	0.3	S	ND	0.18	0.024	0.024	ND	ND	ND	ND	0.18	0.19	0.18	0.19
Manganese, Total, ICAP/MS	ug/l	50	S	14	20	17	17	ND	ND	32	31	**178**	**180**	**330**	**340**
Turbidity	NTU	5	S	1.7	1.3	0.45	0.25	0.2	0.25	0.45	0.6	0.9	0.5	1.5	1.7
Alkalinity	mg/l			297	295	185	186	143	132	127	145	320	244	288	224
Boron	mg/l			0.52	0.57	0.19	0.2	0.14	0.14	0.095	0.099	0.28	0.31	0.34	0.37
Bicarbonate as HCO3,calculated	mg/l			359	358	226	226	173	160	154	176	389	297	350	273
Calcium, Total, ICAP	mg/l			6.9	7.3	14	15	13	13	40	42	180	190	210	220
Carbonate as CO3, Calculated	mg/l			7.4	5.8	ND	2.9	2.8	2.6	ND	ND	2.5	ND	2.3	ND
Hardness (Total, as CaCO3)	mg/l			23.4	24.8	42	44.9	37.4	37.4	119	125	561	590	660	693
Chloride	mg/l	500	S	25	20	19	18	23	21	37	36	120	120	180	180
Fluoride	mg/l	2	P	0.61	0.63	0.42	0.41	0.55	0.56	0.32	0.29	0.17	0.12	0.29	0.24
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.4	0.4	-1.9	0.4	0.3	0.3	0.5	0.6	1.4	1.1	1.4	1.1
Magnesium, Total, ICAP	mg/l			1.5	1.6	1.7	1.8	1.2	1.2	4.6	4.8	27	28	33	35
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total, ICAP	mg/l			ND	2.5	1.7	1.9	1.2	1.2	2.5	2.7	5	5	6	5.9
Sodium, Total, ICAP	mg/l			140	150	75	85	67	69	52	58	110	120	120	130
Sulfate	mg/l	500	S	ND	ND	ND	ND	14	13	53	52	370	370	440	440
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	0.065	ND	0.063	ND	0.079	0.074
Total Nitrate, Nitrite-N, CALC	mg/l	10		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			10	ND	4	3.4	1.7	1.5	1.2	1.2	1.4	1.6	1.9	1.6
Carbon Dioxide	mg/l			ND	2.3	370	ND	ND	ND	ND	ND	6.4	7.7	5.7	7.1
General Physical															
Apparent Color	ACU	15	S	**250**	**300**	**40**	**30**	**20**	**25**	5	5	5	5	5	3
Lab pH	Units			8.5	8.4	6	8.3	8.4	8.4	8.2	8.2	8	7.8	8	7.8
Odor	TON	3	S	**3**	**4**	**3**	2	1	**3**	**3**	2	1	2	**4**	**3**
pH of CaCO3 saturation(25C)	Units			8.1	8	7.9	7.9	8.1	8.1	7.7	7.6	6.6	6.7	6.6	6.7
pH of CaCO3 saturation(60C)	Units			7.6	7.6	7.5	7.5	7.6	7.7	7.2	7.1	6.2	6.2	6.1	6.2
Specific Conductance	umho/cm	1600	S	644	643	434	433	397	375	490	511	1490	1510	**1720**	**1780**
Metal															
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	24	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	ND	ND	ND	ND	ND	ND	1.2	ND	4.9	4.8	7	6.5
Barium, Total, ICAP/MS	ug/l	100	P	5.7	8.7	9.9	11	ND	ND	29	26	92	91	94	98
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	ND	1.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1000	S	ND	3.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compound															
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.5	0.7
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l	80	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluorotrichloromethane-Freon11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ng/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TBA	ug/l			ND		ND		ND		**12**		ND		ND	
Di-Isopropyl Ether	0		0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	0		0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	0		0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (p): Primary MCL (s): Secondary MCL (ND): Not Detected

TABLE 4.2
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2007/2008

Constituents	Units	MCL	MCL Type	Long Beach #6	Long Beach #6	Long Beach #6	Long Beach #6	Long Beach #6	Long Beach #6	Long Beach #6	Long Beach #6	Long Beach #6	Long Beach #6	Long Beach #6	Long Beach #6
				Zone 1	Zone 1	Zone 2	Zone 2	Zone 3	Zone 3	Zone 4	Zone 4	Zone 5	Zone 5	Zone 6	Zone 6
				04/11/08	09/02/08	04/11/08	09/02/08	04/11/08	09/02/08	04/11/08	09/02/08	04/11/08	09/02/08	04/11/08	09/02/08
General Mineral															
Total Dissolved Solid (TDS)	mg/l	1000	S	682	722	687	692	232	246	242	254	202	206	240	268
Cation Sum	meq/l			12	11	12	11	3.8	3.6	4.1	3.9	2.8	3.3	4	4.3
Anion Sum	meq/l			10	13	11	13	3.2	4.2	3.4	4.3	3.1	3.5	4.2	4.7
Iron, Total, ICAP	mg/l	0.3	S	ND	0.088	0.1	0.097	ND	0.023	ND	0.026	ND	ND	0.089	0.092
Manganese, Total, ICAP/MS	ug/l	50	S	18	21	28	25	4.6	3.9	28	20	8.8	ND	**110**	**99**
Turbidity	NTU	5	S	2.6	2.1	**7.1**	2.9	1.2	0.25	0.85	0.35	0.2	0.15	0.8	0.85
Alkalinity	mg/l			483	625	503	613	134	188	142	187	119	138	131	152
Boron	mg/l			1.2	1.1	1.2	1.1	0.25	0.24	0.32	0.22	0.092	ND	ND	0.054
Bicarbonate as HCO3,calculated	mg/l			586	757	610	742	161	226	171	225	144	167	159	185
Calcium, Total, ICAP	mg/l			8.6	8.1	9.4	8.7	4.9	4.7	6.6	6.1	12	13	39	42
Carbonate as CO3, Calculated	mg/l			9.6	16	10	15	6.6	9.3	5.6	7.3	3.7	3.4	ND	ND
Hardness (Total, as CaCO3)	mg/l			28.9	27.2	30.5	28.3	13.3	12.7	16.5	16.8	30.8	36.2	118	127
Chloride	mg/l	500	S	20	18	20	17	17	15	18	16	18	17	45	48
Fluoride	mg/l	2	P	0.74	0.77	0.71	0.75	0.65	0.69	0.66	0.71	0.56	0.61	0.19	0.23
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.7	0.8	0.7	0.9	0.3	0.4	0.3	0.4	0.4	0.4	0.2	0.5
Magnesium, Total, ICAP	mg/l			1.8	1.7	1.7	1.6	0.27	0.24	ND	0.38	0.82	0.92	5	5.3
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total, ICAP	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	1	ND	2.2	2.4
Sodium, Total, ICAP	mg/l			270	250	260	250	82	78	86	81	53	60	38	40
Sulfate	mg/l	500	S	ND	ND	ND	ND	ND	ND	1.1	3.1	11	9.6	14	14
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Nitrate, Nitrite-N, CALC	mg/l	10		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			19	24	20	22	5.1	4.6	4.6	4.2	1.6	1.8	0.68	0.57
Carbon Dioxide	mg/l			3.8	3.9	4	3.8	ND	ND	ND	ND	ND	ND	3.3	2.4
General Physical															
Apparent Color	ACU	15	S	**300**	**400**	**400**	**300**	**100**	**100**	**150**	**100**	**40**	**40**	5	5
Lab pH	Units			8.4	8.5	8.4	8.5	8.8	8.8	8.7	8.7	8.6	8.5	7.9	8.1
Odor	TON	3	S	2	**3**	**3**	**3**	2	2	2	2	2	2	**3**	**3**
pH of CaCO3 saturation(25C)	Units			7.7	7.7	7.7	7.6	8.5	8.4	8.4	8.3	8.2	8.1	7.7	7.6
pH of CaCO3 saturation(60C)	Units			7.3	7.2	7.2	7.2	8.1	8	8	7.9	7.8	7.7	7.2	7.1
Specific Conductance	umho/cm	1600	S	1070	1060	1060	1040	372	356	391	365	323	312	445	441
Metal															
Aluminum, Total, ICAP/MS	ug/l	1000	P	34	ND	ND	ND	30	21	53	ND	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	2.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.7	3.2
Barium, Total, ICAP/MS	ug/l	100	P	8.8	8.8	15	13	3.4	3.6	12	9.4	4.1	ND	16	16
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	1	ND	ND	ND	ND	2.1
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1000	S	8.1	ND	38	ND	ND	ND	92	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15	P	0.89	ND	1.1	ND	ND	ND	1.3	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	37	ND	ND	ND	66	ND	ND	ND	ND	ND
Volatile Organic Compound															
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l	80	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluorotrichloromethane-Freon11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ng/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TBA	ug/l			ND		ND		ND		ND		ND		ND	
Di-Isopropyl Ether	0		0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	0		0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	0		0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (p): Primary MCL (s): Secondary MCL (ND): Not Detected

TABLE 4.2
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2007/2008

Constituents	Units	MCL	MCL Type	Los Angeles #1	Los Angeles #1	Los Angeles #1	Los Angeles #1	Los Angeles #1	Los Angeles #1	Los Angeles #1	Los Angeles #1	Los Angeles #1	Los Angeles #1
				Zone 1	Zone 1	Zone 2	Zone 2	Zone 3	Zone 3	Zone 4	Zone 4	Zone 5	Zone 5
				04/29/08	09/29/08	04/29/08	09/29/08	04/29/08	09/29/08	04/29/08	09/29/08	04/29/08	09/29/08
General Mineral													
Total Dissolved Solid (TDS)	mg/l	1000	S	320	358	352	462	348	720	558	790	690	567
Cation Sum	meq/l			5.7	5.8	6.3	6.2	6.2	6.2	9.6	11	11	11
Anion Sum	meq/l			4	5.3	5.7	8.8	5.8	5.7	7.8	10	9.6	10
Iron, Total, ICAP	mg/l	0.3	S	ND	ND	0.18	0.15	ND	ND	ND	ND	ND	ND
Manganese, Total, ICAP/MS	ug/l	50	S	45	48	**65**	**72**	17	16	ND	ND	ND	ND
Turbidity	NTU	5	S	0.05	0.2	0.8	0.25	0.1	0.1	0.1	0.15	0.1	0.15
Alkalinity	mg/l			91	165	163	169	169	169	135	203	168	207
Boron	mg/l			0.15	0.14	0.14	0.14	0.15	0.15	0.18	0.19	0.2	0.19
Bicarbonate as HCO3,calculated	mg/l			110	201	198	206	205	206	164	247	204	252
Calcium, Total, ICAP	mg/l			55	55	63	62	62	61	100	110	120	110
Carbonate as CO3, Calculated	mg/l			ND	ND	ND	ND	2.1	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			187	187	223	217	221	218	357	398	427	398
Chloride	mg/l	500	S	22	21	22	21	22	21	63	78	82	80
Fluoride	mg/l	2	P	0.31	0.32	0.48	0.49	0.42	0.41	0.46	0.44	0.44	0.44
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.6	0.7	0.8	0.7	0.9	0.6	0.9	0.8	1	0.8
Magnesium, Total, ICAP	mg/l			12	12	16	15	16	16	26	30	31	30
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	ND	ND	ND	ND	8.3	**13**	**14**	**14**
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total, ICAP	mg/l			4	4.1	3.6	3.6	3.4	3.4	4.3	4.5	4.9	4.6
Sodium, Total, ICAP	mg/l			43	44	40	40	39	41	53	58	60	59
Sulfate	mg/l	500	S	73	68	85	230	86	80	130	140	140	130
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	0.082	ND	0.11	ND
Total Nitrate, Nitrite-N, CALC	mg/l	10		ND	ND	ND	ND	ND	ND	8.3	**13**	**14**	**14**
Total Organic Carbon	mg/l			0.34	0.37	ND	ND	ND	ND	0.41	0.44	0.46	0.45
Carbon Dioxide	mg/l			ND	2.6	2.6	3.4	2.1	4.3	2.1	6.4	2.7	6.6
General Physical													
Apparent Color	ACU	15	S	3	5	ND	3	ND	ND	5	**15**	**15**	**15**
Lab pH	Units			8.3	8.1	8.1	8	8.2	7.9	8.1	7.8	8.1	7.8
Odor	TON	3	S	2	1	2	2	1	1	2	1	2	2
pH of CaCO3 saturation(25C)	Units			7.7	7.4	7.3	7.3	7.3	7.3	7.2	7	7.1	7
pH of CaCO3 saturation(60C)	Units			7.2	7	6.9	6.9	6.9	6.9	6.8	6.6	6.6	6.6
Specific Conductance	umho/cm	1600	S	547	547	575	576	579	578	888	1000	1020	1020
Metals													
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium, Total, ICAP/MS	ug/l	100	P	28	27	46	43	65	62	**120**	**150**	**150**	**160**
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	**230**	**510**	**710**	**640**
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds													
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	**35**	**44**	**67**	**49**
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	1.6	2.2	2.4	2.8
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l	80	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	**0.6**	**0.8**	**0.7**
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	**0.6**	ND
Fluorotrichloromethane-Freon11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l		S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ng/l	13		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TBA	ug/l		P	ND		ND		ND		ND		ND	
Di-Isopropyl Ether	0		0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	0		0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	0		0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (p): Primary MCL (s): Secondary MCL (ND): Not Detected

TABLE 4.2
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2007/2008

Constituents	Units	MCL	MCL Type	Montebello #1 Zone 1 04/28/08	Montebello #1 Zone 1 09/24/08	Montebello #1 Zone 2 04/28/08	Montebello #1 Zone 2 09/24/08	Montebello #1 Zone 3 04/28/08	Montebello #1 Zone 3 09/24/08	Montebello #1 Zone 4 04/28/08	Montebello #1 Zone 4 09/24/08	Montebello #1 Zone 5 04/28/08	Montebello #1 Zone 5 09/24/08
General Mineral													
Total Dissolved Solid (TDS)	mg/l	1000	S	**2140**	**2180**	896	878	570	540	548	534	496	510
Cation Sum	meq/l			34	36	14	15	9.4	9	8.7	8.5	8.2	8.2
Anion Sum	meq/l			32	36	15	15	7.2	8.9	7.7	8	6.7	7.3
Iron, Total, ICAP	mg/l	0.3	S	0.15	0.15	0.2	0.19	0.077	0.055	0.076	0.026	ND	ND
Manganese, Total, ICAP/MS	ug/l	50	S	8.9	9.9	31	33	**63**	**100**	**64**	**62**	ND	ND
Turbidity	NTU	5	S	2.6	0.9	**8.3**	0.5	1.4	1.4	0.45	0.25	0.2	0.1
Alkalinity	mg/l			676	903	568	602	106	209	135	176	103	144
Boron	mg/l			6.3	6.5	2.3	2.2	0.39	0.39	0.18	0.19	0.23	0.22
Bicarbonate as HCO3,calculated	mg/l			821	1100	690	732	129	254	164	214	125	175
Calcium, Total, ICAP	mg/l			13	14	18	18	92	86	100	93	81	80
Carbonate as CO3, Calculated	mg/l			11	14	8.9	7.5	ND	2.1	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			57.2	60.1	75.8	72.9	296	277	320	302	268	266
Chloride	mg/l	500	S	**670**	**640**	120	110	84	79	73	71	76	74
Fluoride	mg/l	2	P	0.48	0.45	0.34	0.31	0.18	0.18	0.21	0.22	0.4	0.37
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.9	1	0.9	0.9	0.7	1	0.8	0.9	0.5	0.6
Magnesium, Total, ICAP	mg/l			6	6.1	7.5	7.5	16	15	17	17	16	16
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	3	2.8
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total, ICAP	mg/l			8.3	7.9	5.6	5.4	3.9	3.8	3.7	3.7	3.3	3.4
Sodium, Total, ICAP	mg/l			760	800	280	300	77	78	50	54	64	64
Sulfate	mg/l	500	S	ND	ND	ND	ND	130	120	140	120	110	100
Surfactants	mg/l	0.5	S	0.068	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Nitrate, Nitrite-N, CALC	mg/l	10		ND	ND	ND	ND	ND	ND	ND	ND	3	2.8
Total Organic Carbon	mg/l			37	27	23	23	1.8	1.6	1.3	1.1	0.43	0.46
Carbon Dioxide	mg/l			6.7	9	5.7	7.6	ND	3.3	2.7	3.5	2.6	3.6
General Physical													
Apparent Color	ACU	15	S	**200**	**400**	**100**	**250**	**20**	**20**	10	10	ND	ND
Lab pH	Units			8.3	8.3	8.3	8.2	8.1	8.1	8	8	7.9	7.9
Odor	TON	3	S	**3**	**4**	**3**	**3**	2	**3**	2	2	2	1
pH of CaCO3 saturation(25C)	Units			7.4	7.3	7.4	7.3	7.4	7.1	7.2	7.1	7.4	7.3
pH of CaCO3 saturation(60C)	Units			7	6.8	6.9	6.9	6.9	6.7	6.8	6.7	7	6.9
Specific Conductance	umho/cm	1600	S	**3530**	**3590**	1400	1420	906	891	847	839	804	823
Metals													
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	ND	ND	24	ND	ND	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	3.2	3.1	ND	ND	ND	ND	ND	ND	1.4	1.5
Barium, Total, ICAP/MS	ug/l	100	P	38	40	25	26	41	33	93	87	66	66
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	2.7	1.9	1.2	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	13	8.7	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds													
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	0.6	0.7
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l	80	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluorotrichloromethane-Freon11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l		S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ng/l	13		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TBA	ug/l		P	ND		ND		ND		ND		ND	
Di-Isopropyl Ether	0		0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	0		0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	0		0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (p): Primary MCL (s): Secondary MCL (ND): Not Detected

TABLE 4.2
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2007/2008

Constituents	Units	MCL	MCL Type	Norwalk #1	Norwalk #1	Norwalk #1	Norwalk #1	Norwalk #1	Norwalk #1	Norwalk #1	Norwalk #1	Norwalk #1	Norwalk #1
				Zone 1	Zone 1	Zone 2	Zone 2	Zone 3	Zone 3	Zone 4	Zone 4	Zone 5	Zone 5
				04/25/08	09/12/08	04/25/08	09/12/08	04/25/08	09/12/08	04/25/08	09/12/08	04/25/08	09/12/08
General Mineral													
Total Dissolved Solid (TDS)	mg/l	1000	S	444	544	296	292	202	254	168	214	382	508
Cation Sum	meq/l			7.7	7.7	4.9	4.9	3.7	3.8	3.4	3.4	7.1	7.1
Anion Sum	meq/l			6.4	7.7	4	5.1	3.7	3.8	2.8	3.4	5.6	6.7
Iron, Total, ICAP	mg/l	0.3	S	ND	ND	ND	ND	ND	ND	ND	0.023	0.1	0.058
Manganese, Total, ICAP/MS	ug/l	50	S	ND	ND	6.8	6.6	18	17	48	41	**130**	**120**
Turbidity	NTU	5	S	0.25	0.25	0.45	0.55	0.15	0.6	0.75	2.5	**52**	**40**
Alkalinity	mg/l			198	274	119	175	106	112	105	134	121	199
Boron	mg/l			0.4	0.41	0.2	0.21	ND	0.051	ND	0.055	0.079	0.085
Bicarbonate as HCO3,calculated	mg/l			240	333	144	212	129	136	128	163	147	242
Calcium, Total, ICAP	mg/l			12	12	9	8.7	23	23	27	27	65	64
Carbonate as CO3, Calculated	mg/l			3.1	4.3	3	4.4	ND	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			55.5	55.9	27.8	27.1	65.3	65.7	89.2	89.7	224	222
Chloride	mg/l	500	S	63	64	57	57	45	45	19	20	110	95
Fluoride	mg/l	2	P	0.5	0.48	0.61	0.57	0.32	0.3	0.32	0.3	0.3	0.3
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.3	0.5	0.2	0.3	0.3	0.4	0.3	0.4	0.6	0.6
Magnesium, Total, ICAP	mg/l			6.2	6.3	1.3	1.3	1.9	2	5.3	5.4	15	15
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total, ICAP	mg/l			2.3	2.2	1.4	1.3	2	1.9	1.7	1.6	3.3	3.1
Sodium, Total, ICAP	mg/l			150	150	100	100	54	56	35	35	59	60
Sulfate	mg/l	500	S	31	17	ND	ND	13	12	8.9	8.2	4.4	ND
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	0.136	ND
Total Nitrate, Nitrite-N, CALC	mg/l	10		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			2.6	2.4	2.8	2.6	0.6	0.49	0.44	0.37	1.6	1.4
Carbon Dioxide	mg/l			2	2.7	ND	ND	ND	ND	ND	ND	ND	5
General Physical													
Apparent Color	ACU	15	S	**25**	**25**	**30**	**30**	3	3	3	3	10	5
Lab pH	Units			8.3	8.3	8.5	8.5	8.3	8.3	8.2	8.2	8.1	7.9
Odor	TON	3	S	**40**	**8**	**3**	2	2	2	**4**	2	**4**	**3**
pH of CaCO3 saturation(25C)	Units			8	7.8	8.3	8.2	8	7.9	7.9	7.8	7.5	7.3
pH of CaCO3 saturation(60C)	Units			7.5	7.4	7.9	7.7	7.5	7.5	7.5	7.4	7	6.8
Specific Conductance	umho/cm	1600	S	780	779	522	514	396	401	336	332	736	730
Metals													
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	ND	ND	ND	ND	5.4	5.3	**17**	**16**	**12**	**12**
Barium, Total, ICAP/MS	ug/l	100	P	12	15	6.9	7.2	71	81	**100**	**110**	**270**	**290**
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds													
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l	80	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluorotrichloromethane-Freon11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l		S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ng/l	13		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TBA	ug/l		P	ND		ND		ND		ND		**2.4**	
Di-Isopropyl Ether	0		0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	0		0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	0		0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (p): Primary MCL (s): Secondary MCL (ND): Not Detected

TABLE 4.2
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2007/2008

Constituents	Units	MCL	MCL Type	Norwalk #2	Norwalk #2	Norwalk #2	Norwalk #2	Norwalk #2	Norwalk #2	Norwalk #2	Norwalk #2	Norwalk #2	Norwalk #2	Norwalk #2	Norwalk #2
				Zone 1	Zone 1	Zone 2	Zone 2	Zone 3	Zone 3	Zone 4	Zone 4	Zone 5	Zone 5	Zone 6	Zone 6
				05/22/08	09/18/08	05/22/08	09/18/08	05/22/08	09/18/08	05/22/08	09/18/08	05/22/08	09/18/08	05/22/08	09/18/08
General Mineral															
Total Dissolved Solid (TDS)	mg/l	1000	S	432	498	292	312	232	242	336	314	456	466	498	534
Cation Sum	meq/l			6.9	7.5	4.7	4.8	4	4.2	5.4	5.5	7.2	7.6	8.3	8.7
Anion Sum	meq/l			6	7.3	3.6	4.6	2.8	3.9	3.9	4.6	6.5	7.3	7	7.8
Iron, Total, ICAP	mg/l	0.3	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Manganese, Total, ICAP/MS	ug/l	50	S	10	13	7.7	7	21	22	ND	ND	12	9	5.3	6.8
Turbidity	NTU	5	S	0.1	0.25	0.2	0.2	0.4	0.15	0.1	0.15	0.15	0.2	0.1	0.2
Alkalinity	mg/l			121	171	114	176	85	143	89	134	99	157	91	150
Boron	mg/l			0.23	0.22	0.24	0.26	ND	ND	0.058	0.061	0.12	0.14	0.2	0.22
Bicarbonate as HCO3,calculated	mg/l			147	208	138	213	103	174	108	163	120	191	111	183
Calcium, Total, ICAP	mg/l			41	63	12	11	40	42	63	64	80	84	85	89
Carbonate as CO3, Calculated	mg/l			ND	ND	2.8	3.5	ND	ND	ND	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			137	211	40.3	36.9	120	126	203	205	266	280	286	300
Chloride	mg/l	500	S	73	70	36	31	12	12	21	20	72	68	79	74
Fluoride	mg/l	2	P	0.31	0.31	0.47	0.48	0.15	0.19	0.23	0.28	0.18	0.23	0.34	0.36
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.5	0.7	0.3	0.3	0.5	0.6	0.6	0.7	0.7	0.8	0.6	0.7
Magnesium, Total, ICAP	mg/l			8.5	13	2.5	2.3	5	5.2	11	11	16	17	18	19
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	ND	ND	ND	ND	1.2	0.99	2.7	2.5	3.3	2.9
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total, ICAP	mg/l			3.9	4	2.5	2.6	2.6	2.8	3.2	3.3	3.8	4	4	4.1
Sodium, Total, ICAP	mg/l			94	74	89	93	35	36	29	30	42	44	57	60
Sulfate	mg/l	500	S	74	89	13	11	34	33	70	61	110	100	130	120
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Nitrate, Nitrite-N, CALC	mg/l	10		ND	ND	ND	ND	ND	ND	1.2	0.99	2.7	2.5	1.6	2.9
Total Organic Carbon	mg/l			1.3	1.1	1.2	1.3	ND	0.47	ND	0.55	0.39	0.45	0.55	0.33
Carbon Dioxide	mg/l			ND	3.4	ND	ND	ND	ND	ND	2.1	ND	3.1	ND	3.8
General Physical															
Apparent Color	ACU	15	S	10	5	**20**	**20**	3	ND	3	ND	ND	ND	3	3
Lab pH	Units			8.2	8	8.5	8.4	8.3	8.2	8.2	8.1	8.2	8	8.1	7.9
Odor	TON	3	S	2	2	**3**	2	**4**	2	2	2	**3**	2	2	2
pH of CaCO3 saturation(25C)	Units			7.7	7.3	8.2	8.1	7.8	7.6	7.6	7.4	7.5	7.2	7.5	7.2
pH of CaCO3 saturation(60C)	Units			7.2	6.9	7.8	7.6	7.4	7.1	7.2	7	7	6.8	7	6.8
Specific Conductance	umho/cm	1600	S	719	739	489	474	401	396	532	513	734	734	850	839
Metals															
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	1.8	2	ND	ND	ND	ND	2	2.1	2.3	2.4	1.4	1.5
Barium, Total, ICAP/MS	ug/l	100	P	40	58	9.6	9.2	25	27	**150**	**150**	78	81	60	61
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	3.2	3.3	1.1	1.4	ND	ND
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds															
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	0.6	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	0.7	0.6	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l	80	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluorotrichloromethane-Freon11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l		S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ng/l	13		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TBA	ug/l		P	ND		ND		ND		ND		ND		ND	
Di-Isopropyl Ether	0		0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	0		0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	0		0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (p): Primary MCL (s): Secondary MCL (ND): Not Detected

TABLE 4.2
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2007/2008

Constituents	Units	MCL	MCL Type	Pico #1 Zone 2 04/28/08	Pico #1 Zone 2 09/30/08	Pico #1 Zone 3 04/28/08	Pico #1 Zone 3 09/30/08	Pico #1 Zone 4 04/28/08	Pico #1 Zone 4 09/30/08
General Mineral									
Total Dissolved Solid (TDS)	mg/l	1000	S	306	430	570	710	594	706
Cation Sum	meq/l			5.5	5.5	9.4	9.2	9.6	9
Anion Sum	meq/l			4.6	5.2	8.5	9	8.5	8.8
Iron, Total, ICAP	mg/l	0.3	S	0.26	0.26	**0.42**	**0.39**	ND	ND
Manganese, Total, ICAP/MS	ug/l	50	S	26	34	17	22	ND	ND
Turbidity	NTU	5	S	1.1	1.8	3.1	4.4	0.25	0.2
Alkalinity	mg/l			129	149	136	182	131	147
Boron	mg/l			0.074	0.071	0.19	0.14	0.24	0.23
Bicarbonate as HCO3,calculated	mg/l			157	181	166	222	160	179
Calcium, Total, ICAP	mg/l			68	68	98	110	100	91
Carbonate as CO3, Calculated	mg/l			ND	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			219	219	319	353	328	301
Chloride	mg/l	500	S	20	23	95	78	100	100
Fluoride	mg/l	2	P	0.31	0.32	0.29	0.32	0.3	0.31
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.5	0.6	0.6	0.7	0.6	0.6
Magnesium, Total, ICAP	mg/l			12	12	18	19	19	18
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	ND	ND	1.9	1.8
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND
Potassium, Total, ICAP	mg/l			2.9	3	4.6	4.1	4.9	4.6
Sodium, Total, ICAP	mg/l			23	23	66	46	67	66
Sulfate	mg/l	500	S	70	73	150	150	140	140
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	0.21	ND
Total Nitrate, Nitrite-N, CALC	mg/l	10		ND	ND	ND	ND	1.9	1.8
Total Organic Carbon	mg/l			ND	0.5	0.53	ND	0.61	0.63
Carbon Dioxide	mg/l			3.2	3	4.3	5.8	4.2	4.7
General Physical									
Apparent Color	ACU	15	S	5	5	5	10	ND	ND
Lab pH	Units			7.9	8	7.8	7.8	7.8	7.8
Odor	TON	3	S	1	1	2	1	1	1
pH of CaCO3 saturation(25C)	Units			7.4	7.4	7.2	7.1	7.2	7.2
pH of CaCO3 saturation(60C)	Units			7	6.9	6.8	6.6	6.8	6.8
Specific Conductance	umho/cm	1600	S	513	537	907	884	927	913
Metals									
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	ND	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	ND	ND	ND	ND	2.8	2.7
Barium, Total, ICAP/MS	ug/l	100	P	86	83	69	61	63	55
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	1.3
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1000	S	ND	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15		ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds									
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l	80	P	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND
Fluorotrichloromethane-Freon11	ug/l	150	P	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200		ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770		ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260		ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l		S	ND	ND	ND	ND	ND	ND
Benzene	ug/l	0.5	P	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND
MTBE	ng/l	13		ND	ND	ND	ND	ND	ND
TBA	ug/l		P	ND		ND		ND	
Di-Isopropyl Ether	0		0	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	0		0	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	0		0	ND	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (p): Primary MCL (s): Secondary MCL (ND): Not Detected

TABLE 4.2
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2007/2008

Constituents	Units	MCL	MCL Type	Pico #2	Pico #2	Pico #2	Pico #2	Pico #2	Pico #2	Pico #2	Pico #2	Pico #2	Pico #2	Pico #2	Pico #2
				Zone 1	Zone 1	Zone 2	Zone 2	Zone 3	Zone 3	Zone 4	Zone 4	Zone 5	Zone 5	Zone 6	Zone 6
				05/19/08	09/30/08	05/19/08	09/30/08	05/19/08	09/30/08	05/19/08	09/30/08	05/19/08	09/30/08	05/19/08	09/30/08
General Mineral															
Total Dissolved Solid (TDS)	mg/l	1000	S	526	514	566	750	498	528	472	576	476	622	328	590
Cation Sum	meq/l			9	8.5	9.7	9.6	8.5	8.4	7.8	7.7	7.8	7.9	5.5	9.1
Anion Sum	meq/l			7.5	8.6	8.7	9.4	7.9	8.3	7.2	7.6	7.5	7.9	5.4	9.2
Iron, Total, ICAP	mg/l	0.3	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Manganese, Total, ICAP/MS	ug/l	50	S	ND	ND	ND	2.4	ND	3.7	ND	2.2	26	27	**60**	**140**
Turbidity	NTU	5	S	0.15	0.3	0.25	0.35	0.65	1.8	0.1	0.2	0.2	0.1	0.15	2.3
Alkalinity	mg/l			142	203	162	206	164	184	107	132	109	130	82	120
Boron	mg/l			0.079	0.059	0.14	0.14	0.14	0.14	0.25	0.25	0.22	0.23	0.16	0.17
Bicarbonate as HCO3,calculated	mg/l			173	247	197	251	199	224	130	161	133	158	99.8	146
Calcium, Total, ICAP	mg/l			110	110	120	120	100	98	66	65	61	62	31	68
Carbonate as CO3, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			369	361	403	398	336	327	227	220	222	225	118	260
Chloride	mg/l	500	S	55	50	75	74	65	66	90	88	94	94	66	130
Fluoride	mg/l	2	P	0.28	0.28	0.28	0.25	0.33	0.3	0.34	0.33	0.37	0.35	0.43	0.29
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.9	1	1	0.9	1	0.8	0.5	0.5	0.5	0.4	-0.1	0.3
Magnesium, Total, ICAP	mg/l			23	21	25	24	21	20	15	14	17	17	9.8	22
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	3.1	3.1	3.1	3	3.2	3.2	2.9	2.8	1.9	1.7	2.2	3.1
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total, ICAP	mg/l			5.3	4.4	4	3.9	4	4.1	4	4	4.4	4.4	5.8	7.4
Sodium, Total, ICAP	mg/l			33	27	35	36	39	40	72	73	75	76	70	86
Sulfate	mg/l	500	S	140	140	150	140	120	120	110	110	120	120	81	140
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	0.063	ND	ND	ND	ND	ND
Total Nitrate, Nitrite-N, CALC	mg/l	10		3.1	3.1	3.1	3	3.2	3.2	2.9	2.8	1.9	1.7	2.2	3.1
Total Organic Carbon	mg/l			0.45	ND	0.36	0.36	0.63	0.34	0.72	0.64	1.2	0.91	1.3	0.97
Carbon Dioxide	mg/l			2.3	4.1	2.6	5.2	2.6	4.6	2.1	3.3	2.2	3.3	2.1	4.8
General Physical															
Apparent Color	ACU	15	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
Lab pH	Units			8.1	8	8.1	7.9	8.1	7.9	8	7.9	8	7.9	7.9	7.7
Odor	TON	3	S	1	1	1	1	1	1	1	1	1	1	1	1
pH of CaCO3 saturation(25C)	Units			7.2	7	7.1	7	7.1	7.1	7.5	7.4	7.5	7.5	8	7.4
pH of CaCO3 saturation(60C)	Units			6.7	6.6	6.6	6.5	6.7	6.7	7.1	7	7.1	7	7.5	7
Specific Conductance	umho/cm	1600	S	824	820	914	920	819	829	779	794	806	822	588	956
Metals															
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	2	1.7	2	2.1	1.5	1.7	2.6	2.6	ND	ND	**20**	**14**
Barium, Total, ICAP/MS	ug/l	100	P	**150**	**170**	**120**	**120**	**120**	**110**	57	57	75	80	82	**190**
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	1.6	2	ND	1.2	1.3	1.6	ND	ND	ND	ND	ND	1.2
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.1	ND
Lead, Total, ICAP/MS	ug/l	15		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds															
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	0.6	0.6	2.2	2	**5.9**	**5.7**	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l	80	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.6	1.2
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluorotrichloromethane-Freon11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l		S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ng/l	13		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TBA	ug/l		P	ND		ND		ND		ND		ND		ND	
Di-Isopropyl Ether	0		0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	0		0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	0		0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (p): Primary MCL (s): Secondary MCL (ND): Not Detected

TABLE 4.2
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2007/2008

Constituents	Units	MCL	MCL Type	Rio Hondo #1	Rio Hondo #1	Rio Hondo #1	Rio Hondo #1	Rio Hondo #1	Rio Hondo #1	Rio Hondo #1	Rio Hondo #1	Rio Hondo #1	Rio Hondo #1	Rio Hondo #1	Rio Hondo #1
				Zone 1	Zone 1	Zone 2	Zone 2	Zone 3	Zone 3	Zone 4	Zone 4	Zone 5	Zone 5	Zone 6	Zone 6
				04/23/08	09/14/08	04/23/08	09/14/08	04/23/08	09/14/08	04/23/08	09/14/08	04/23/08	09/14/08	04/23/08	09/14/08
General Mineral															
Total Dissolved Solid (TDS)	mg/l	1000	S	256	270	454	438	470	544	424	414	304	350	392	398
Cation Sum	meq/l			4.7	4.4	7.7	7.5	8	7.9	7.3	6.6	5.3	5.3	6.8	6.2
Anion Sum	meq/l			4.5	4.3	7.5	7.4	7.3	7.9	7	6.2	5.1	5.2	6.8	6.7
Iron, Total, ICAP	mg/l	0.3	S	ND	ND	0.072	0.073	ND	ND	ND	ND	ND	ND	ND	ND
Manganese, Total, ICAP/MS	ug/l	50	S	27	24	34	38	ND	ND	ND	ND	ND	ND	ND	ND
Turbidity	NTU	5	S	2	0.8	0.4	0.45	0.2	0.3	0.9	0.3	0.2	0.35	0.35	0.65
Alkalinity	mg/l			148	144	164	169	159	188	137	115	110	112	115	136
Boron	mg/l			0.071	0.064	0.057	0.055	0.16	0.15	0.2	0.18	0.15	0.14	0.17	0.16
Bicarbonate as HCO3,calculated	mg/l			180	175	200	206	194	229	167	140	134	136	140	166
Calcium, Total, ICAP	mg/l			42	40	100	97	89	88	66	60	47	47	63	56
Carbonate as CO3, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			139	134	320	312	288	286	218	199	158	159	223	202
Chloride	mg/l	500	S	19	15.9	52	47.7	61	59.6	71	62.2	46	49	84	69.6
Fluoride	mg/l	2	P	0.26	0.25	0.21	0.2	0.3	0.29	0.39	0.38	0.34	0.33	0.27	0.27
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.5	0.5	0.7	0.8	0.5	0.8	0.2	0.3	-0.1	0.2	-0.2	0.1
Magnesium, Total, ICAP	mg/l			8.4	8.2	17	17	16	16	13	12	9.8	10	16	15
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	ND	ND	1.9	1.8	2.3	2	1.5	1.5	2.5	2.6
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total, ICAP	mg/l			3	2.9	3.6	3.5	4.1	3.8	4	3.6	3.4	3.1	4.5	4.2
Sodium, Total, ICAP	mg/l			41	39	27	26	50	48	65	57	47	46	51	48
Sulfate	mg/l	500	S	48	46	130	130	110	110	100	93	71	69	94	85
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Nitrate, Nitrite-N, CALC	mg/l	10		ND	ND	ND	ND	1.9	1.8	2.3	2	1.5	1.5	2.5	2.6
Total Organic Carbon	mg/l			0.38	ND	ND	ND	0.51	0.34	0.54	0.51	0.4	0.5	0.4	0.45
Carbon Dioxide	mg/l			2.3	2.3	5.2	4.3	6.3	4.7	6.9	3.6	6.9	3.5	12	6.8
General Physical															
Apparent Color	ACU	15	S	5	3	3	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lab pH	Units			8.1	8.1	7.8	7.9	7.7	7.9	7.6	7.8	7.5	7.8	7.3	7.6
Odor	TON	3	S	2	2	2	2	1	2	2	2	2	2	2	2
pH of CaCO3 saturation(25C)	Units			7.6	7.6	7.1	7.1	7.2	7.1	7.4	7.5	7.6	7.6	7.5	7.5
pH of CaCO3 saturation(60C)	Units			7.1	7.2	6.7	6.7	6.8	6.7	7	7.1	7.2	7.2	7.1	7
Specific Conductance	umho/cm	1600	S	431	431	722	719	761	766	700	667	515	539	688	643
Metals															
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	ND	ND	ND	ND	2	2.1	2.4	2.6	1.7	1.8	ND	ND
Barium, Total, ICAP/MS	ug/l	100	P	22	21	55	60	**130**	**140**	57	63	51	58	**114**	98
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds															
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l	80	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.6	0.5
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluorotrichloromethane-Freon11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l		S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ng/l	13		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TBA	ug/l		P	ND		ND		ND		ND		ND		ND	
Di-Isopropyl Ether	0		0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	0		0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	0		0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (p): Primary MCL (s): Secondary MCL (ND): Not Detected

TABLE 4.2
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2007/2008

Constituents	Units	MCL	MCL Type	South Gate #1	South Gate #1	South Gate #1	South Gate #1	South Gate #1	South Gate #1	South Gate #1	South Gate #1	South Gate #1	South Gate #1
				Zone 1	Zone 1	Zone 2	Zone 2	Zone 3	Zone 3	Zone 4	Zone 4	Zone 5	Zone 5
				04/30/08	09/29/08	04/30/08	09/29/08	04/30/08	09/29/08	04/30/08	09/29/08	04/30/08	09/29/08
General Mineral													
Total Dissolved Solid (TDS)	mg/l	1000	S	316	332	418	618	462	540	492	560	604	732
Cation Sum	meq/l			5.3	5.4	6.8	6.8	6.8	6.9	7.6	7.3	9.8	9.7
Anion Sum	meq/l			4.3	4.9	5.6	6.3	6.4	6.4	7.2	7.3	9.2	9.4
Iron, Total, ICAP	mg/l	0.3	S	0.04	0.045	ND	ND	ND	ND	ND	ND	0.074	0.084
Manganese, Total, ICAP/MS	ug/l	50	S	**53**	**54**	ND	ND	ND	ND	ND	ND	**140**	**130**
Turbidity	NTU	5	S	0.1	0.2	0.5	0.1	0.45	0.1	0.2	0.1	0.25	0.15
Alkalinity	mg/l			131	156	95	134	149	148	156	156	166	185
Boron	mg/l			0.12	0.11	0.15	0.14	0.12	0.11	0.17	0.17	0.15	0.14
Bicarbonate as HCO3,calculated	mg/l			159	190	115	163	181	180	190	190	202	225
Calcium, Total, ICAP	mg/l			50	52	71	71	75	75	79	77	100	100
Carbonate as CO3, Calculated	mg/l			2.1	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			156	164	231	235	249	253	259	254	357	361
Chloride	mg/l	500	S	20	22	50	50	43	44	57	59	120	120
Fluoride	mg/l	2	P	0.33	0.34	0.33	0.33	0.39	0.39	0.38	0.39	0.42	0.42
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.8	0.6	0.7	0.6	0.9	0.7	0.8	0.7	1	0.9
Magnesium, Total, ICAP	mg/l			7.6	8.2	13	14	15	16	15	15	26	27
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	2.3	2.2	2.4	2.2	2.2	2.2	ND	ND
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total, ICAP	mg/l			2.6	2.5	3.5	3.2	3	2.9	3.4	3.2	3.3	3.1
Sodium, Total, ICAP	mg/l			48	47	48	46	41	40	54	50	59	56
Sulfate	mg/l	500	S	53	53	100	99	99	97	110	110	120	110
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.103
Total Nitrate, Nitrite-N, CALC	mg/l	10		ND	ND	2.3	2.2	2.4	2.2	2.2	2.2	ND	ND
Total Organic Carbon	mg/l			ND	ND	ND	0.33	0.36	ND	ND	0.36	0.79	0.75
Carbon Dioxide	mg/l			ND	2.5	ND	2.7	ND	3	2.5	3.1	2.6	3.7
General Physical													
Apparent Color	ACU	15	S	3	ND	ND	ND	ND	ND	3	ND	3	3
Lab pH	Units			8.3	8.1	8.2	8	8.2	8	8.1	8	8.1	8
Odor	TON	3	S	2	2	2	1	1	2	2	1	2	2
pH of CaCO3 saturation(25C)	Units			7.5	7.5	7.5	7.4	7.3	7.3	7.3	7.3	7.1	7.1
pH of CaCO3 saturation(60C)	Units			7.1	7	7.1	6.9	6.9	6.9	6.8	6.8	6.7	6.6
Specific Conductance	umho/cm	1600	S	506	503	661	657	653	653	735	741	944	951
Metals													
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	2.6	2.8	2.7	2.6	**15**	3	1.9	1.9	2.4	2.3
Barium, Total, ICAP/MS	ug/l	100	P	**120**	**140**	91	87	**720**	**140**	73	70	**210**	**230**
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	5.6	1.1	ND	ND	ND	ND
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds													
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	0.9	0.9	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	0.6	0.7	**5.2**	4.4	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l	80	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluorotrichloromethane-Freon11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l		S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ng/l	13		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TBA	ug/l		P	ND		ND		ND		ND		ND	
Di-Isopropyl Ether	0		0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	0		0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	0		0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (p): Primary MCL (s): Secondary MCL (ND): Not Detected

Constituents	Units	MCL	MCL Type	Whittier #1 Zone 1 04/16/08	Whittier #1 Zone 1 09/15/08	Whittier #1 Zone 2 04/16/08	Whittier #1 Zone 2 09/15/08	Whittier #1 Zone 3 04/16/08	Whittier #1 Zone 3 09/15/08	Whittier #1 Zone 4 04/16/08	Whittier #1 Zone 4 09/15/08	Whittier #1 Zone 5 04/16/08	Whittier #1 Zone 5 09/15/08
General Mineral													
Total Dissolved Solid (TDS)	mg/l	1000	S	**2730**	**2100**	**2360**	**1980**	**1730**	**1640**	682	730	644	640
Cation Sum	meq/l			41	41	39	39	27	27	12	12	11	11
Anion Sum	meq/l			32	40	39	38	27	29	12	11	11	12
Iron, Total, ICAP	mg/l	0.3	S	**0.52**	**0.53**	**0.44**	**0.41**	0.26	0.26	ND	ND	ND	ND
Manganese, Total, ICAP/MS	ug/l	50	S	**68**	**58**	**93**	**81**	**91**	**80**	21	22	7.6	6.4
Turbidity	NTU	5	S	2.7	3.7	1.8	2.5	1.1	2	0.1	0.15	1.5	2.5
Alkalinity	mg/l			262	260	287	260	291	306	256	245	233	299
Boron	mg/l			0.9	0.91	0.97	0.95	0.62	0.63	0.21	0.2	0.16	0.16
Bicarbonate as HCO3,calculated	mg/l			319	317	350	317	354	373	312	298	284	364
Calcium, Total, ICAP	mg/l			200	200	200	190	160	160	83	80	80	80
Carbonate as CO3, Calculated	mg/l			ND	ND	ND	ND	2.3	ND	2	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			1080	1080	1030	1010	774	766	360	348	360	360
Chloride	mg/l	500	S	220	290	430	260	190	200	79	76	82	82
Fluoride	mg/l	2	P	0.3	0.28	0.31	0.29	0.55	0.52	0.18	0.17	0.32	0.3
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			1.3	1.2	0.9	1.1	1.3	1.1	1	0.8	0.9	0.8
Magnesium, Total, ICAP	mg/l			140	140	130	130	91	89	37	36	39	39
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	ND	ND	ND	ND	4.1	4.1	4.9	5.2
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total, ICAP	mg/l			11	10	10	9.4	7	6.7	4.2	4	3.5	3.5
Sodium, Total, ICAP	mg/l			450	450	420	420	270	260	110	110	86	87
Sulfate	mg/l	500	S	**1000**	**1300**	**1000**	**1200**	**760**	**810**	190	190	180	180
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Nitrate, Nitrite-N, CALC	mg/l	10		ND	ND	ND	ND	ND	ND	4.1	4.1	4.9	5.2
Total Organic Carbon	mg/l			3.1	1.7	2.2	2.5	1.2	1.4	0.31	ND	ND	ND
Carbon Dioxide	mg/l			6.6	8.2	18	8.2	5.8	9.7	5.1	6.2	4.7	9.5
General Physical													
Apparent Color	ACU	15	S	**15**	10	**15**	**15**	10	5	ND	5	ND	ND
Lab pH	Units			7.9	7.8	7.5	7.8	8	7.8	8	7.9	8	7.8
Odor	TON	3	S	2	2	2	2	2	2	2	1	2	1
pH of CaCO3 saturation(25C)	Units			6.6	6.6	6.6	6.7	6.7	6.7	7	7.1	7.1	7
pH of CaCO3 saturation(60C)	Units			6.2	6.2	6.2	6.2	6.2	6.2	6.6	6.6	6.6	6.5
Specific Conductance	umho/cm	1600	S	**3440**	**3420**	**3250**	**3260**	**2380**	**2340**	1110	1090	1060	1040
Metals													
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	ND	ND	ND	ND	ND	ND	1.3	1.4	ND	ND
Barium, Total, ICAP/MS	ug/l	100	P	19	18	19	18	23	23	35	34	29	27
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	ND	1.4	ND	ND	ND	ND	ND	ND	3.3	3.8
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	14	13	18	18
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds													
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l	80	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluorotrichloromethane-Freon11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l		S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ng/l	13		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TBA	ug/l		P	ND		ND		ND		ND		ND	
Di-Isopropyl Ether	0		0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	0		0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	0		0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (p): Primary MCL (s): Secondary MCL (ND): Not Detected

TABLE 4.2
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2007/2008

Constituents	Units	MCL	MCL Type	Whittier #2	Whittier #2	Whittier #2	Whittier #2	Whittier #2	Whittier #2	Whittier #2	Whittier #2	Whittier #2	Whittier #2	Whittier #2	Whittier #2
				Zone 1	Zone 1	Zone 2	Zone 2	Zone 3	Zone 3	Zone 4	Zone 4	Zone 5	Zone 5	Zone 6	Zone 6
				05/23/08	09/22/08	05/23/08	09/22/08	05/23/08	09/22/08	05/23/08	09/22/08	05/23/08	09/22/08	05/23/08	09/22/08
General Mineral															
Total Dissolved Solid (TDS)	mg/l	1000	S	862	882	238	238	708	716	**1720**	**1530**	710	754	972	960
Cation Sum	meq/l			14	14	4	4	12	12	28	27	11	11	16	17
Anion Sum	meq/l			12	14	2.2	3.9	11	13	26	26	9.9	11	15	20
Iron, Total, ICAP	mg/l	0.3	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Manganese, Total, ICAP/MS	ug/l	50	S	46	42	33	34	**78**	**70**	**244**	**220**	ND	ND	ND	ND
Turbidity	NTU	5	S	0.55	0.6	0.3	0.2	0.15	0.15	0.2	0.15	1.4	0.3	0.4	0.3
Alkalinity	mg/l			106	180	75	158	144	205	252	305	130	152	270	212
Boron	mg/l			0.6	0.62	0.25	0.26	0.22	0.23	0.82	0.85	0.18	0.18	0.33	0.32
Bicarbonate as HCO3,calculated	mg/l			129	219	90.9	192	175	249	307	371	158	185	329	258
Calcium, Total, ICAP	mg/l			89	87	19	21	80	82	140	130	120	120	150	160
Carbonate as CO3, Calculated	mg/l			ND	ND	ND	2	ND	2	ND	ND	ND	ND	2.1	ND
Hardness (Total, as CaCO3)	mg/l			321	312	63.9	69.3	336	345	695	671	403	403	527	564
Chloride	mg/l	500	S	260	270	12	11	130	130	270	240	130	130	100	280
Fluoride	mg/l	2	P	0.28	0.26	0.23	0.28	0.24	0.29	0.47	0.44	0.27	0.26	0.3	0.27
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.6	0.9	0.1	0.4	0.8	1	1.1	1.1	0.9	0.9	1.2	1.1
Magnesium, Total, ICAP	mg/l			24	23	4	4.1	33	34	84	84	25	25	37	40
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	ND	ND	0.58	ND	2.5	2.3	5.2	5.3	7.9	8.1
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total, ICAP	mg/l			5.3	5.1	2.5	2.5	4	3.9	4.4	4.3	4.6	4.5	4.7	4.7
Sodium, Total, ICAP	mg/l			170	170	60	59	110	110	320	310	71	70	120	120
Sulfate	mg/l	500	S	140	140	17	18	220	240	**668**	**600**	170	190	280	340
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Nitrate, Nitrite-N, CALC	mg/l	10		ND	ND	ND	ND	0.58	ND	2.5	2.3	5.2	1.1	7.9	8.1
Total Organic Carbon	mg/l			0.83	0.81	0.93	0.7	0.47	0.42	0.56	0.51	0.59	0.39	0.61	0.54
Carbon Dioxide	mg/l			2.1	2.9	ND	2	2.3	3.2	6.3	7.7	2.1	3	5.4	5.3
General Physical															
Apparent Color	ACU	15	S	3	3	5	5	3	ND	ND	3	ND	ND	ND	ND
Lab pH	Units			8	8.1	8.3	8.2	8.1	8.1	7.9	7.9	8.1	8	8	7.9
Odor	TON	3	S	**3**	2	2	1	**3**	1	1	1	2	1	2	2
pH of CaCO3 saturation(25C)	Units			7.4	7.2	8.2	7.8	7.3	7.1	6.8	6.8	7.2	7.1	6.8	6.8
pH of CaCO3 saturation(60C)	Units			6.9	6.7	7.8	7.4	6.9	6.7	6.4	6.3	6.7	6.7	6.3	6.4
Specific Conductance	umho/cm	1600	S	1470	1450	391	390	1160	1160	**2510**	**2510**	1130	1120	1460	1540
Metals															
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	ND	ND	ND	ND	1.8	1.7	ND	ND	1.3	1.1	1.8	2
Barium, Total, ICAP/MS	ug/l	100	P	44	39	18	21	52	53	17	17	88	92	40	41
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	ND	1.2	ND	ND	3.1	3.4	ND	1.2	2.9	2.7	4	4.4
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	6.5	7.9	ND	ND	ND	ND
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds															
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	1.6	1.4	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l	80	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluorotrichloromethane-Freon11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l		S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ng/l	13		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TBA	ug/l		P	ND		ND		ND		ND		ND		ND	
Di-Isopropyl Ether	0		0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	0		0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	0		0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (p): Primary MCL (s): Secondary MCL (ND): Not Detected

TABLE 4.2
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2007/2008

Constituents	Units	MCL	MCL Type	Whittier Narrows #1	Whittier Narrows #1	Whittier Narrows #1	Whittier Narrows #1	Whittier Narrows #1	Whittier Narrows #1	Whittier Narrows #1	Whittier Narrows #1	Whittier Narrows #1
				Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 7	Zone 8	Zone 9
				09/13/08	09/13/08	09/13/08	09/13/08	09/13/08	09/13/08	09/13/08	09/13/08	09/13/08
General Mineral												
Total Dissolved Solid (TDS)	mg/l	1000	S	**1600**	240	370	430	304	550	560	540	570
Cation Sum	meq/l			19	3.6	6	6.8	4.7	8.9	8.8	8.6	9.2
Anion Sum	meq/l			20	3.5	5.8	6.6	4.6	8.5	8.5	8.4	9.3
Iron, Total, ICAP	mg/l	0.3	S	**9.6**	0.038	0.046	ND	ND	0.022	ND	ND	ND
Manganese, Total, ICAP/MS	ug/l	50	S	**530**	17	ND	ND	ND	39	30	15	10
Turbidity	NTU	5	S	**32**	1	4.4	1.7	1.3	1.1	0.8	0.75	0.55
Alkalinity	mg/l			73	111	134	149	119	166	161	158	163
Boron	mg/l			0.89	0.19	0.062	0.057	0.055	0.23	0.26	0.27	0.26
Bicarbonate as HCO3,calculated	mg/l			89	135	163	181	145	202	196	192	198
Calcium, Total, ICAP	mg/l			62	12	82	90	56	92	81	75	76
Carbonate as CO3, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			208	32.2	239	270	185	291	260	245	256
Chloride	mg/l	500	S	**640**	40	45	56	31	99	93	91	120
Fluoride	mg/l	2	P	0.78	0.39	0.24	0.26	0.24	0.24	0.25	0.25	0.27
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			-0.4	-0.1	0.6	0.8	0.7	0.9	0.9	0.7	0.7
Magnesium, Total, ICAP	mg/l			13	0.54	8.3	11	11	15	14	14	16
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	1.4	1.3	0.93	1.3	1.8	2	2.2
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	0.6	ND	ND	ND
Potassium, Total, ICAP	mg/l			ND	1.6	2.4	3.7	3.4	4.6	4.7	4.7	5.1
Sodium, Total, ICAP	mg/l			350	66	27	30	21	68	80	82	91
Sulfate	mg/l	500	S	ND	6.1	82	93	61	110	120	120	120
Surfactants	mg/l	0.5	S	0.156	0.074	0.054	ND	0.06	0.093	0.212	0.175	0.228
Total Nitrate, Nitrite-N, CALC	mg/l	10		ND	ND	1.4	1.3	0.93	1.9	1.8	2	2.2
Total Organic Carbon	mg/l			12	0.55	0.34	0.36	ND	0.98	1	1.1	1.4
Carbon Dioxide	mg/l			7.3	ND	3.4	3	ND	2.6	2.6	3.1	3.2
General Physical												
Apparent Color	ACU	15	S	**30**	5	ND	ND	ND	3	3	3	5
Lab pH	Units			7.3	8.1	7.9	8	8.2	8.1	8.1	8	8
Odor	TON	3	S	**8**	**4**	2	2	2	2	2	2	2
pH of CaCO3 saturation(25C)	Units			7.7	8.2	7.3	7.2	7.5	7.2	7.2	7.3	7.3
pH of CaCO3 saturation(60C)	Units			7.3	7.8	6.9	6.8	7.1	6.7	6.8	6.8	6.8
Specific Conductance	umho/cm	1600	S	**2290**	371	601	674	474	894	882	853	937
Metals												
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	7.7	ND	1	1.6	1.5	1.6	1.6	1.4	1.2
Barium, Total, ICAP/MS	ug/l	100	P	**440**	29	**190**	**188**	**150**	**140**	**120**	80	51
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	2.1	ND	7.6	2.9	2.8	ND	1.2	1.1	1.2
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1000	S	ND	ND	ND	ND	ND	ND	ND	2.5	3.7
Lead, Total, ICAP/MS	ug/l	15		ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	17	13	8	5.9
Selenium, Total, ICAP/MS	ug/l	50	P	12	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	21	94	45	57	32	34	24	54	32
Volatile Organic Compounds												
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	0.8	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	1	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l	80	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluorotrichloromethane-Freon11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200		ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770		ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260		ND	ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l		S	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ng/l	13		ND	ND	ND	ND	ND	ND	ND	ND	ND
TBA	ug/l		P									
Di-Isopropyl Ether	0		0	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	0		0	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	0		0	ND	ND	ND	ND	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (p): Primary MCL (s): Secondary MCL (ND): Not Detected

TABLE 4.2
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2007/2008

Constituents	Units	MCL	MCL Type	Willowbrook #1	Willowbrook #1	Willowbrook #1	Willowbrook #1	Willowbrook #1	Willowbrook #1	Willowbrook #1	Willowbrook #1
				Zone 1	Zone 1	Zone 2	Zone 2	Zone 3	Zone 3	Zone 4	Zone 4
				04/22/08	09/16/08	04/22/08	09/16/08	04/22/08	09/16/08	04/22/08	09/16/08
General Mineral											
Total Dissolved Solid (TDS)	mg/l	1000	S	336	344	314	308	332	322	342	348
Cation Sum	meq/l			5.9	5.9	5.6	5.6	5.7	5.8	5.8	5.7
Anion Sum	meq/l			5.4	5.4	5.5	5.1	5.6	5.2	5.7	5.3
Iron, Total, ICAP	mg/l	0.3	S	0.059	0.063	ND	ND	0.074	0.077	ND	0.023
Manganese, Total, ICAP/MS	ug/l	50	S	41	**61**	47	49	30	29	**85**	**87**
Turbidity	NTU	5	S	0.25	0.25	0.1	0.1	0.2	0.25	**10**	**10**
Alkalinity	mg/l			183	192	171	154	175	162	183	165
Boron	mg/l			0.16	0.17	0.13	0.12	0.13	0.13	0.13	0.14
Bicarbonate as HCO3,calculated	mg/l			222	233	208	187	213	197	222	201
Calcium, Total, ICAP	mg/l			49	45	56	56	57	57	58	57
Carbonate as CO3, Calculated	mg/l			2.3	ND	2.1	ND	ND	ND	2.3	ND
Hardness (Total, as CaCO3)	mg/l			164	152	181	181	192	196	186	184
Chloride	mg/l	500	S	19	18	20	19	20	18	23	21
Fluoride	mg/l	2	P	0.29	0.28	0.29	0.28	0.42	0.43	0.37	0.37
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.8	0.7	0.8	0.8	0.7	0.7	0.9	0.7
Magnesium, Total, ICAP	mg/l			10	9.7	10	10	12	13	10	10
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total, ICAP	mg/l			4	4.3	2.7	2.7	3.5	3.3	3	3
Sodium, Total, ICAP	mg/l			58	63	44	43	41	41	46	45
Sulfate	mg/l	500	S	58	49	71	69	72	70	67	65
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND
Total Nitrate, Nitrite-N, CALC	mg/l	10		ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			1.1	1.2	0.57	ND	0.45	ND	0.41	ND
Carbon Dioxide	mg/l			2.3	3	2.2	ND	2.8	2.6	2.3	2.6
General Physical											
Apparent Color	ACU	15	S	10	**15**	5	ND	3	3	5	5
Lab pH	Units			8.2	8.1	8.2	8.2	8.1	8.1	8.2	8.1
Odor	TON	3	S	**3**	2	2	2	2	2	2	2
pH of CaCO3 saturation(25C)	Units			7.4	7.4	7.4	7.4	7.4	7.4	7.3	7.4
pH of CaCO3 saturation(60C)	Units			7	7	6.9	7	6.9	7	6.9	6.9
Specific Conductance	umho/cm	1600	S	548	532	520	494	533	519	542	520
Metals											
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	6.8	**11**	ND	ND	2.8	3	4.9	5.1
Barium, Total, ICAP/MS	ug/l	100	P	33	47	52	52	72	70	**130**	**130**
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1000	S	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15		ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds											
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l	80	P	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
Fluorotrichloromethane-Freon11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200		ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770		ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260		ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l		S	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ng/l	13		ND	ND	ND	ND	ND	ND	ND	ND
TBA	ug/l		P	ND		ND		ND		ND	
Di-Isopropyl Ether	0		0	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	0		0	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	0		0	ND	ND	ND	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (p): Primary MCL (s): Secondary MCL (ND): Not Detected

TABLE 4.3
WEST COAST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2007/2008

Constituents	Units	MCL	MCL Type	Carson #1 Zone 1 04/02/08	Carson #1 Zone 1 09/02/08	Carson #1 Zone 2 04/02/08	Carson #1 Zone 2 09/02/08	Carson #1 Zone 3 04/02/08	Carson #1 Zone 3 09/02/08	Carson #1 Zone 4 04/02/08	Carson #1 Zone 4 09/02/08
General Mineral											
Total Dissolved Solid (TDS)	mg/l	1000	S	192	214	218	242	308	358	378	412
Cation Sum	meq/l			3.5	3.6	4	4.2	5.3	5.4	6.1	6.2
Anion Sum	meq/l			3.6	4.2	3.7	4.7	5.3	5.9	6.3	6.8
Iron, Total, ICAP	mg/l	0.3	S	ND	ND	ND	0.025	ND	ND	0.06	0.058
Manganese, Total, ICAP/MS	ug/l	50	S	22	22	17	17	30	30	**84**	**81**
Turbidity	NTU	5	S	0.9	0.25	0.25	0.2	0.25	0.15	3.8	0.2
Alkalinity	mg/l			150	181	156	205	166	200	182	219
Boron	mg/l			0.095	0.1	0.11	0.12	0.11	0.12	0.14	0.13
Bicarbonate as HCO3,calculated	mg/l			182	220	190	249	202	243	222	266
Calcium, Total, ICAP	mg/l			21	21	33	33	45	45	51	50
Carbonate as CO3, Calculated	mg/l			ND	2.9	2	3.2	ND	2.5	ND	2.2
Hardness (Total, as CaCO3)	mg/l			69.3	69.7	111	111	166	166	185	183
Chloride	mg/l	500	S	21	19	21	20	23	21	41	38
Fluoride	mg/l	2	P	0.24	0.28	0.2	0.23	0.28	0.33	0.38	0.39
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.3	0.5	0.6	0.8	0.6	0.8	0.4	0.8
Magnesium, Total, ICAP	mg/l			4.1	4.2	6.9	7	13	13	14	14
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total, ICAP	mg/l			2.7	2.8	2.4	2.5	2.9	3	3.5	3.6
Sodium, Total, ICAP	mg/l			46	49	40	43	43	45	53	57
Sulfate	mg/l	500	S	ND	ND	ND	ND	64	61	69	65
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND
Total Nitrate, Nitrite-N, CALC	mg/l	10		ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			0.8	0.76	0.5	0.47	0.31	0.32	0.37	0.39
Carbon Dioxide	mg/l			ND	ND	2	2	2.6	2.5	5.8	3.5
General Physical											
Apparent Color	ACU	15	S	5	5	3	3	3	3	3	3
Lab pH	Units			8.2	8.3	8.2	8.3	8.1	8.2	7.8	8.1
Odor	TON	3	S	**3**	2	**3**	2	**3**	1	**3**	1
pH of CaCO3 saturation(25C)	Units			7.9	7.8	7.6	7.5	7.5	7.4	7.4	7.3
pH of CaCO3 saturation(60C)	Units			7.4	7.3	7.2	7.1	7	7	6.9	6.9
Specific Conductance	umho/cm	1600	S	357	343	401	394	524	504	620	605
Metal											
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Barium, Total, ICAP/MS	ug/l	100	P	15	16	36	38	65	67	**195**	**180**
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1000	S	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15		ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds											
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l	80	P	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
Fluorotrichloromethane-Freon11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200		ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770		ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260		ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l		S	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13		ND	ND	ND	ND	ND	ND	ND	ND
TBA	ug/l		P	ND	ND	ND	ND	ND	ND	ND	ND
Di-Isopropyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (p): Primary MCL (s): Secondary MCL (ND): Not Detected

TABLE 4.3
WEST COAST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2007/2008

Constituents	Units	MCL	MCL Type	Carson #2	Carson #2	Carson #2	Carson #2	Carson #2	Carson #2	Carson #2	Carson #2	Carson #2	Carson #2
				Zone 1	Zone 1	Zone 2	Zone 2	Zone 3	Zone 3	Zone 4	Zone 4	Zone 5	Zone 5
				04/07/08	08/27/08	04/07/08	08/27/08	04/07/08	08/27/08	04/07/08	08/27/08	04/07/08	08/27/08
General Mineral													
Total Dissolved Solid (TDS)	mg/l	1000	S	262	202	302	228	314	260	278	212	312	240
Cation Sum	meq/l			3.7	3.6	4.4	4.3	4.6	4.5	4.2	4	4.5	4.4
Anion Sum	meq/l			3.8	4.1	4.5	4.9	4.5	4.5	3.8	4.6	4.5	4.8
Iron, Total, ICAP	mg/l	0.3	S	ND	ND	ND	ND	ND	ND	ND	ND	0.055	0.059
Manganese, Total, ICAP/MS	ug/l	50	S	ND	ND	ND	8.1	16	16	13	12	**58**	**64**
Turbidity	NTU	5	S	0.5	0.35	0.15	0.2	0.1	0.15	0.25	0.15	3	**7.4**
Alkalinity	mg/l			161	177	195	216	173	179	160	198	177	193
Boron	mg/l			0.14	0.13	0.15	0.14	0.14	0.13	0.12	0.11	0.12	0.11
Bicarbonate as HCO3,calculated	mg/l			193	214	236	262	210	218	194	241	215	235
Calcium, Total, ICAP	mg/l			2.8	2.7	11	11	26	24	32	30	42	39
Carbonate as CO3, Calculated	mg/l			7.9	5.5	3.9	3.4	2.7	ND	2	2	ND	ND
Hardness (Total, as CaCO3)	mg/l			8.89	8.72	43.1	42.7	99.9	93.7	121	116	143	135
Chloride	mg/l	500	S	20	18	21	20	22	21	21	21	21	20
Fluoride	mg/l	2	P	0.31	0.32	0.2	0.23	0.3	0.3	0.22	0.23	0.28	0.29
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.1	-0.1	0.4	0.3	0.6	0.1	0.5	0.5	0.6	0.6
Magnesium, Total, ICAP	mg/l			0.46	0.48	3.8	3.7	8.5	8.2	10	10	9.2	9.1
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total, ICAP	mg/l			ND	ND	3.9	3.9	4.1	4.2	3.7	3.8	3.1	3.2
Sodium, Total, ICAP	mg/l			81	79	80	78	57	57	38	37	37	38
Sulfate	mg/l	500	S	ND	ND	ND	ND	17	17	ND	ND	17	17
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	0.051	ND	ND
Total Nitrate, Nitrite-N, CALC	mg/l	10		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			2.3	1.7	1.4	1.1	0.93	0.59	0.69	0.38	0.8	ND
Carbon Dioxide	mg/l			ND	ND	ND	2.2	ND	5.7	2	3.1	2.8	3.1
General Physical													
Apparent Color	ACU	15	S	**30**	**35**	**25**	**25**	5	10	5	5	3	ND
Lab pH	Units			8.8	8.6	8.4	8.3	8.3	7.8	8.2	8.1	8.1	8.1
Odor	TON	3	S	2	**3**	2	2	**3**	2	**3**	**3**	**4**	**3**
pH of CaCO3 saturation(25C)	Units			8.7	8.7	8	8	7.7	7.7	7.7	7.6	7.5	7.5
pH of CaCO3 saturation(60C)	Units			8.3	8.2	7.6	7.5	7.3	7.3	7.2	7.1	7	7
Specific Conductance	umho/cm	1600	S	380	359	443	422	454	463	412	398	440	422
Metal													
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	6.9	13	13	15	16	19	20
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds													
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l	80	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluorotrichloromethane-Freon11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l		S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TBA	ug/l		P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-Isopropyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (p): Primary MCL (s): Secondary MCL (ND): Not Detected

TABLE 4.3
WEST COAST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2007/2008

Constituents	Units	MCL	MCL Type	Chandler #3a	Chandler #3a	Chandler #3b	Chandler #3b
				Zone 2	Zone 2	Zone 1	Zone 1
				04/17/08	09/04/08	04/17/08	09/04/08
General Mineral							
Total Dissolved Solid (TDS)	mg/l	1000	S	**1110**	**1030**	604	616
Cation Sum	meq/l			18	17	10	10
Anion Sum	meq/l			14	17	10	11
Iron, Total, ICAP	mg/l	0.3	S	ND	ND	0.18	0.19
Manganese, Total, ICAP/MS	ug/l	50	S	21	23	**79**	**75**
Turbidity	NTU	5	S	0.9	2.8	0.6	0.35
Alkalinity	mg/l			182	389	328	353
Boron	mg/l			0.3	0.26	0.21	0.23
Bicarbonate as HCO3,calculated	mg/l			222	474	400	430
Calcium, Total, ICAP	mg/l			170	170	69	68
Carbonate as CO3, Calculated	mg/l			ND	ND	ND	2.8
Hardness (Total, as CaCO3)	mg/l			606	610	259	256
Chloride	mg/l	500	S	260	270	120	140
Fluoride	mg/l	2	P	0.19	0.18	0.29	0.26
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND
Langelier Index - 25 degree	None			0.6	1.2	0.7	1
Magnesium, Total, ICAP	mg/l			44	45	21	21
Mercury	ug/l	2	P	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	**19**	**21**	ND	ND
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND
Potassium, Total, ICAP	mg/l			3.6	3.5	3.1	3.2
Sodium, Total, ICAP	mg/l			130	110	120	120
Sulfate	mg/l	500	S	68	83	8.9	11
Surfactants	mg/l	0.5	S	ND	0.074	ND	ND
Total Nitrate, Nitrite-N, CALC	mg/l	10		**19**	**21**	ND	ND
Total Organic Carbon	mg/l			0.64	0.73	1.5	1.4
Carbon Dioxide	mg/l			14	16	13	7.1
General Physical							
Apparent Color	ACU	15	S	ND	3	10	10
Lab pH	Units			7.4	7.7	7.7	8
Odor	TON	3	S	1	1	1	1
pH of CaCO3 saturation(25C)	Units			6.8	6.5	7	7
pH of CaCO3 saturation(60C)	Units			6.4	6.1	6.6	6.5
Specific Conductance	umho/cm	1600	S	**1790**	**1750**	1010	1040
Metal							
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	2.1	2.3	2.9	2.7
Barium, Total, ICAP/MS	ug/l	100	P	**110**	**110**	48	43
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	2	5.3	ND	2.7
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1000	S	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15		ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	61	78	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	13	23	ND	ND
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND
Volatile Organic Compounds							
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l	80	P	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND
Fluorotrichloromethane-Freon11	ug/l	150	P	ND	ND	ND	ND
Freon 113	ug/l	1200		ND	ND	ND	ND
Isopropylbenzene	ug/l	770		ND	ND	ND	ND
n-Propylbenzene	ug/l	260		ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l		S	ND	ND	ND	ND
Benzene	ug/l	0.5	P	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND
MTBE	ug/l	13		ND	ND	ND	ND
TBA	ug/l		P	ND		**8.8**	
Di-Isopropyl Ether	ug/l			ND	ND	ND	ND
Tert Amyl Methyl Ether	ug/l			ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l			ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (p): Primary MCL (s): Secondary MCL (ND): Not Detected

TABLE 4.3
WEST COAST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2007/2008

Constituents	Units	MCL	MCL Type	Gardena #1	Gardena #1	Gardena #1	Gardena #1	Gardena #1	Gardena #1	Gardena #1	Gardena #1
				Zone 1	Zone 1	Zone 2	Zone 2	Zone 3	Zone 3	Zone 4	Zone 4
				04/07/08	08/27/08	04/07/08	08/27/08	04/07/08	08/27/08	04/07/08	08/27/08
General Mineral											
Total Dissolved Solid (TDS)	mg/l	1000	S	388	338	628	312	364	294	**2570**	**2310**
Cation Sum	meq/l			5.8	6.1	9.3	5.7	5.5	5.3	35	36
Anion Sum	meq/l			6.1	6.6	9.5	3.8	5.3	5.4	34	34
Iron, Total, ICAP	mg/l	0.3	S	ND	0.081	0.1	0.048	ND	ND	ND	ND
Manganese, Total, ICAP/MS	ug/l	50	S	**74**	**81**	**100**	**65**	45	46	2.5	ND
Turbidity	NTU	5	S	4.4	4.1	**10**	**6.2**	3.6	**11**	**23**	**38**
Alkalinity	mg/l			172	262	223	209	160	169	179	182
Boron	mg/l			0.2	0.29	0.16	0.13	0.13	0.12	0.15	ND
Bicarbonate as HCO3,calculated	mg/l			209	318	272	133	195	205	218	222
Calcium, Total, ICAP	mg/l			31	27	100	54	53	51	390	400
Carbonate as CO3, Calculated	mg/l			2.2	4.1	ND	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			123	107	353	192	182	173	1470	1490
Chloride	mg/l	500	S	59	36	150	32	24	22	**1000**	**1000**
Fluoride	mg/l	2	P	0.3	0.27	0.35	0.38	0.41	0.41	0.16	0.16
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.6	0.8	0.7	0.5	0.4	0.7	0.7	1.1
Magnesium, Total, ICAP	mg/l			11	9.6	25	14	12	11	120	120
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	ND	ND	ND	ND	**18**	**18**
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total, ICAP	mg/l			6.3	8.1	4.8	3.8	3.3	3.2	6.8	7.7
Sodium, Total, ICAP	mg/l			73	87	49	41	40	40	120	130
Sulfate	mg/l	500	S	45	18	37	34	69	67	45	42
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	0.088
Total Nitrate, Nitrite-N, CALC	mg/l	10		ND	ND	ND	ND	ND	ND	**18**	**18**
Total Organic Carbon	mg/l			5.4	3.8	2.8	0.5	ND	ND	ND	ND
Carbon Dioxide	mg/l			2.2	2.6	8.9	ND	5.1	2.7	23	9.1
General Physical											
Apparent Color	ACU	15	S	10	**20**	5	5	3	3	5	5
Lab pH	Units			8.2	8.3	7.7	8.1	7.8	8.1	7.2	7.6
Odor	TON	3	S	2	2	1	2	1	2	**3**	1
pH of CaCO3 saturation(25C)	Units			7.6	7.5	7	7.6	7.4	7.4	6.5	6.5
pH of CaCO3 saturation(60C)	Units			7.2	7.1	6.6	7.1	7	7	6.1	6.1
Specific Conductance	umho/cm	1600	S	626	621	960	550	530	514	**3630**	**3610**
Metal											
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	**17**	**100**	ND	ND	ND	ND	ND	3.9
Barium, Total, ICAP/MS	ug/l	100	P	19	22	88	60	35	46	**440**	**420**
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	ND	1.2	ND	2	ND	ND	7.5	19
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1000	S	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15		ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	7.8
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	8.4	15
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND	ND	74	ND
Volatile Organic Compounds											
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l	80	P	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
Fluorotrichloromethane-Freon11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200		ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770		ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260		ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l		S	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13		ND	ND	ND	ND	ND	ND	ND	ND
TBA	ug/l		P	ND		ND		ND		ND	
Di-Isopropyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (p): Primary MCL (s): Secondary MCL (ND): Not Detected

TABLE 4.3
WEST COAST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2007/2008

Constituents	Units	MCL	MCL Type	Gardena #2	Gardena #2	Gardena #2	Gardena #2	Gardena #2	Gardena #2	Gardena #2	Gardena #2	Gardena #2	Gardena #2
				Zone 1	Zone 1	Zone 2	Zone 2	Zone 3	Zone 3	Zone 4	Zone 4	Zone 5	Zone 5
				04/10/08	08/26/08	04/10/08	08/26/08	04/10/08	08/26/08	04/10/08	08/26/08	04/10/08	08/26/08
General Mineral													
Total Dissolved Solid (TDS)	mg/l	1000	S	342	302	312	256	308	274	232	224	286	250
Cation Sum	meq/l			5.8	5.7	5.2	5.3	5.1	5	4	4	5.2	5
Anion Sum	meq/l			6.1	6.5	5.4	5.6	5.2	5.4	3.7	4.3	5.3	5.6
Iron, Total, ICAP	mg/l	0.3	S	ND	0.028	0.041	0.043	0.057	0.052	0.021	0.025	0.053	0.047
Manganese, Total, ICAP/MS	ug/l	50	S	28	26	43	42	**63**	**55**	42	43	24	**74**
Turbidity	NTU	5	S	0.5	0.75	0.55	0.15	0.2	0.2	0.35	0.75	1.7	2.9
Alkalinity	mg/l			283	307	178	194	176	193	153	186	197	211
Boron	mg/l			0.33	0.32	0.17	0.16	0.13	0.12	0.1	0.095	0.15	0.12
Bicarbonate as HCO3,calculated	mg/l			344	373	216	236	214	235	186	226	240	257
Calcium, Total, ICAP	mg/l			16	15	37	36	48	45	32	30	49	46
Carbonate as CO3, Calculated	mg/l			4.5	3.1	ND	ND	ND	ND	ND	ND	2	ND
Hardness (Total, as CaCO3)	mg/l			65.9	62.2	142	139	169	158	117	111	168	156
Chloride	mg/l	500	S	14	13	23	21	24	22	22	20	38	37
Fluoride	mg/l	2	P	0.25	0.26	0.28	0.27	0.4	0.37	0.29	0.28	0.32	0.3
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.6	0.4	0.6	0.4	0.6	0.5	0.4	0.4	0.7	0.6
Magnesium, Total, ICAP	mg/l			6.3	6	12	12	12	11	9	8.8	11	10
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total, ICAP	mg/l			5.3	5.3	5.5	5.8	3.4	3.7	3	3.2	2.9	3.1
Sodium, Total, ICAP	mg/l			100	100	51	54	38	40	37	39	41	42
Sulfate	mg/l	500	S	ND	ND	55	54	46	42	ND	ND	14	13
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Nitrate, Nitrite-N, CALC	mg/l	10		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			3.4	3.1	0.78	0.54	0.6	0.37	0.87	0.48	0.62	0.33
Carbon Dioxide	mg/l			2.8	4.9	2.8	4.9	3.5	4.9	2.4	3.7	3.1	4.2
General Physical													
Apparent Color	ACU	15	S	**30**	**25**	5	3	5	3	5	5	3	3
Lab pH	Units			8.3	8.1	8.1	7.9	8	7.9	8.1	8	8.1	8
Odor	TON	3	S	**3**	**3**	**3**	2	**3**	2	2	2	**4**	2
pH of CaCO3 saturation(25C)	Units			7.7	7.7	7.5	7.5	7.4	7.4	7.7	7.6	7.4	7.4
pH of CaCO3 saturation(60C)	Units			7.3	7.3	7.1	7.1	7	7	7.2	7.2	6.9	6.9
Specific Conductance	umho/cm	1600	S	593	577	544	527	516	496	412	397	529	507
Metal													
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium, Total, ICAP/MS	ug/l	100	P	20	21	19	21	22	23	57	59	25	83
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	1.2	ND	1.2	ND	ND	ND	ND
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds													
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l	80	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluorotrichloromethane-Freon11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l		S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TBA	ug/l		P	ND		ND		ND		ND		ND	
Di-Isopropyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (p): Primary MCL (s): Secondary MCL (ND): Not Detected

TABLE 4.3
WEST COAST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2007/2008

Constituents	Units	MCL	MCL Type	Hawthorne #1 Zone 1 05/21/08	Hawthorne #1 Zone 1 09/28/08	Hawthorne #1 Zone 2 05/21/08	Hawthorne #1 Zone 2 09/28/08	Hawthorne #1 Zone 3 05/21/08	Hawthorne #1 Zone 3 09/28/08	Hawthorne #1 Zone 4 05/21/08	Hawthorne #1 Zone 4 09/28/08	Hawthorne #1 Zone 5 05/21/08	Hawthorne #1 Zone 5 09/28/08	Hawthorne #1 Zone 6 05/21/08	Hawthorne #1 Zone 6 09/28/08
General Mineral															
Total Dissolved Solid (TDS)	mg/l	1000	S	840	866	794	806	586	592	436	450	990	992	**1890**	**2310**
Cation Sum	meq/l			15	15	14	14	10	11	7.3	8.1	15	16	28	29
Anion Sum	meq/l			7.1	14	11	13	8.6	10	6.2	7.4	14	17	30	27
Iron, Total, ICAP	mg/l	0.3	S	0.15	0.15	0.11	0.14	0.2	0.2	0.022	ND	0.028	0.021	0.036	ND
Manganese, Total, ICAP/MS	ug/l	50	S	13	14	**50**	**58**	**68**	**74**	36	36	**200**	**180**	**600**	**530**
Turbidity	NTU	5	S	0.65	0.45	4.4	0.55	0.35	0.5	2.2	4.1	0.15	0.65	2.4	4.9
Alkalinity	mg/l			294	653	489	598	374	456	232	291	160	207	253	296
Boron	mg/l			1.4	1.4	0.99	1.1	0.57	0.6	0.36	0.38	0.16	0.17	0.37	0.37
Bicarbonate as HCO3,calculated	mg/l			357	793	593	726	454	554	282	354	195	252	308	360
Calcium, Total, ICAP	mg/l			16	15	14	13	36	37	36	40	130	130	240	240
Carbonate as CO3, Calculated	mg/l			4.6	10	9.7	9.4	5.9	5.7	2.9	3.6	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			93.5	91	72	69.1	185	191	156	174	514	518	875	888
Chloride	mg/l	500	S	41	47	43	40	39	42	53	56	360	370	**530**	460
Fluoride	mg/l	2	P	0.12	0.13	0.25	0.26	0.23	0.23	0.39	0.38	0.29	0.29	0.25	0.26
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.6	0.9	0.9	0.8	1.1	1.1	0.8	0.9	1	1.1	1.3	1.4
Magnesium, Total, ICAP	mg/l			13	13	9	8.9	23	24	16	18	46	47	67	70
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.8	2.5
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total, ICAP	mg/l			20	20	13	14	14	14	8.5	9	7.4	8	7.1	7.1
Sodium, Total, ICAP	mg/l			300	300	280	290	140	160	92	100	110	120	240	260
Sulfate	mg/l	500	S	ND	ND	ND	ND	ND	ND	ND	ND	80	93	490	400
Surfactants	mg/l	0.5	S	0.056	ND	ND	ND	ND	ND	0.053	ND	0.099	ND	0.168	ND
Total Nitrate, Nitrite-N, CALC	mg/l	10		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.8	2.5
Total Organic Carbon	mg/l			11	13	9.7	1.5	5.2	4.9	2.8	2.4	0.99	1.1	2.2	1.7
Carbon Dioxide	mg/l			2.9	6.5	3.9	6	3.7	5.7	2.9	3.7	3.2	4.1	6.4	7.4
General Physical															
Apparent Color	ACU	15	S	**300**	**200**	**300**	**300**	**60**	**50**	**25**	**20**	5	5	5	5
Lab pH	Units			8.3	8.3	8.4	8.3	8.3	8.2	8.2	8.2	8	8	7.9	7.9
Odor	TON	3	S	**3**	2	**4**	**3**	2	2	**3**	**8**	**3**	2	2	2
pH of CaCO3 saturation(25C)	Units			7.7	7.4	7.5	7.5	7.2	7.1	7.4	7.3	7	6.9	6.6	6.5
pH of CaCO3 saturation(60C)	Units			7.2	6.9	7.1	7	6.8	6.7	7	6.8	6.6	6.5	6.1	6.1
Specific Conductance	umho/cm	1600	S	1410	1400	1300	1286	1020	1010	749	758	**1650**	**1630**	**2780**	**2720**
Metal															
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.6	1.7
Barium, Total, ICAP/MS	ug/l	100	P	31	35	26	27	38	38	36	36	**160**	**140**	15	43
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	ND	ND	1.4	1.5	ND	ND	ND	ND	ND	2.8	ND	2.1
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1000	S	2.5	ND	2.8	2.2	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.5
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	45	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds															
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**33**	**35**
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.6	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.1	1.5
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.5	0.8
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l	80	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	9.8	9.2
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluorotrichloromethane-Freon11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	6.2	5.8
Freon 113	ug/l	1200		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.2
Isopropylbenzene	ug/l	770		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l		S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**2.1**	**2**
Benzene	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.5
TBA	ug/l		P	ND		ND		ND		ND		ND		**2.4**	
Di-Isopropyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (p): Primary MCL (s): Secondary MCL (ND): Not Detected

TABLE 4.3
WEST COAST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2007/2008

Constituents	Units	MCL	MCL Type	Inglewood #1 Zone 1 05/20/08	Inglewood #1 Zone 1 09/17/08	Inglewood #1 Zone 3 05/20/08	Inglewood #1 Zone 3 09/17/08	Inglewood #1 Zone 4 05/20/08	Inglewood #1 Zone 4 09/17/08	Inglewood #1 Zone 5 05/20/08	Inglewood #1 Zone 5 09/17/08
General Mineral											
Total Dissolved Solid (TDS)	mg/l	1000	S	**2390**	**2900**	**1110**	**1200**	734	850	**1290**	**1220**
Cation Sum	meq/l			39	42	19	20	13	13	19	20
Anion Sum	meq/l			40	38	20	20	13	13	21	21
Iron, Total, ICAP	mg/l	0.3	S	0.096	0.17	**0.43**	**0.43**	**0.33**	**0.33**	ND	ND
Manganese, Total, ICAP/MS	ug/l	50	S	20	17	**320**	**330**	**201**	**200**	ND	ND
Turbidity	NTU	5	S	2.1	0.8	3.5	3.3	1.6	1.9	0.15	0.75
Alkalinity	mg/l			733	652	268	239	214	206	283	228
Boron	mg/l			4.4	4.7	0.42	0.43	0.2	0.2	0.25	0.26
Bicarbonate as HCO3,calculated	mg/l			892	794	326	291	260	251	345	278
Calcium, Total, ICAP	mg/l			130	140	130	140	100	100	170	180
Carbonate as CO3, Calculated	mg/l			5.8	4.1	2.1	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			551	564	543	580	435	435	676	705
Chloride	mg/l	500	S	**830**	**830**	380	430	250	245	410	450
Fluoride	mg/l	2	P	0.3	0.29	0.48	0.48	0.41	0.4	0.26	0.24
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			1.7	1.5	1.2	1.1	1	0.9	1.2	1
Magnesium, Total, ICAP	mg/l			48	52	53	56	45	45	61	62
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	ND	ND	1.3	ND	8.8	8
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total, ICAP	mg/l			16	17	7.7	7.1	9.5	9	8	7.7
Sodium, Total, ICAP	mg/l			48	690	180	180	96	97	130	140
Sulfate	mg/l	500	S	73	58	140	150	91	95	140	150
Surfactants	mg/l	0.5	S	0.117	0.156	0.056	ND	ND	ND	ND	ND
Total Nitrate, Nitrite-N, CALC	mg/l	10		ND	ND	ND	ND	1.3	ND	8.8	8
Total Organic Carbon	mg/l			39	41	1.2	1.4	0.58	0.92	0.59	0.9
Carbon Dioxide	mg/l			15	16	5.3	6	4.3	5.2	7.1	9.1
General Physical											
Apparent Color	ACU	15	S	**200**	**150**	10	10	10	10	ND	3
Lab pH	Units			8	7.9	8	7.9	8	7.9	7.9	7.7
Odor	TON	3	S	**3**	**4**	**3**	2	2	2	**3**	2
pH of CaCO3 saturation(25C)	Units			6.3	6.4	6.8	6.8	7	7	6.7	6.7
pH of CaCO3 saturation(60C)	Units			5.9	6	6.4	6.4	6.6	6.6	6.2	6.3
Specific Conductance	umho/cm	1600	S	**4040**	**4160**	**1910**	**1970**	1340	1360	**1980**	**2000**
Metal											
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	9.9	ND	ND	ND	ND	ND	ND	ND
Barium, Total, ICAP/MS	ug/l	100	P	**220**	**280**	45	48	**110**	**120**	**230**	**240**
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	1	ND	ND	1.9	ND	1.4	ND	2.1
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1000	S	6.2	ND	ND	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15		ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	40	24	ND	7.9	ND	ND	8.1	10
Silver, Total, ICAP/MS	ug/l	100	S	0.69	ND	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds											
Trichloroethylene (TCE)	ug/l	5	P	1.6	1.6	ND	ND	ND	ND	1.4	1.3
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l	80	P	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
Fluorotrichloromethane-Freon11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200		ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770		ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260		ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l		S	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13		ND	ND	ND	ND	ND	ND	ND	ND
TBA	ug/l		P	ND		ND		ND		ND	
Di-Isopropyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (p): Primary MCL (s): Secondary MCL (ND): Not Detected

TABLE 4.3
WEST COAST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2007/2008

Constituents	Units	MCL	MCL Type	Lomita #1	Lomita #1	Lomita #1	Lomita #1	Lomita #1	Lomita #1	Lomita #1	Lomita #1	Lomita #1	Lomita #1
				Zone 1	Zone 1	Zone 2	Zone 2	Zone 3	Zone 3	Zone 4	Zone 4	Zone 5	Zone 5
				04/02/08	09/04/08	04/02/08	09/04/08	04/02/08	09/04/08	04/02/08	09/04/08	04/02/08	09/04/08
General Mineral													
Total Dissolved Solid (TDS)	mg/l	1000	S	**1950**	**1900**	**1250**	986	894	938	694	732	**1440**	**1660**
Cation Sum	meq/l			25	24	15	16	14	15	12	12	22	22
Anion Sum	meq/l			26	24	16	19	14	17	11	16	22	22
Iron, Total, ICAP	mg/l	0.3	S	0.18	0.11	0.027	ND	ND	0.03	ND	ND	0.12	0.11
Manganese, Total, ICAP/MS	ug/l	50	S	**430**	**380**	**170**	**180**	**110**	**130**	**96**	**120**	**310**	**300**
Turbidity	NTU	5	S	1	0.85	**7.1**	4.8	**8.7**	1.7	4.5	2.9	0.7	0.5
Alkalinity	mg/l			226	230	222	246	240	284	230	245	246	204
Boron	mg/l			0.65	0.6	0.43	0.44	0.4	0.4	0.4	0.41	0.54	0.54
Bicarbonate as HCO3,calculated	mg/l			275	280	271	299	292	345	280	298	300	248
Calcium, Total, ICAP	mg/l			200	190	110	110	93	98	77	83	170	170
Carbonate as CO3, Calculated	mg/l			ND	ND	ND	ND	ND	2.8	ND	2.4	ND	ND
Hardness (Total, as CaCO3)	mg/l			718	689	402	411	343	364	283	306	614	626
Chloride	mg/l	500	S	**740**	**666**	390	470	320	380	230	240	**600**	**630**
Fluoride	mg/l	2	P	0.1	0.1	0.15	0.15	0.14	0.13	0.21	0.21	0.1	0.09
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.9	1.2	0.6	1.1	0.7	1.2	0.7	1	0.9	1.1
Magnesium, Total, ICAP	mg/l			53	52	31	33	27	29	22	24	46	49
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	0.1	ND	0.1	ND	ND	**21**	ND	ND
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total, ICAP	mg/l			15	14	12	11	10	10	8.8	8.7	14	13
Sodium, Total, ICAP	mg/l			230	220	160	170	160	170	130	140	210	210
Sulfate	mg/l	500	S	12	17	31	26	23	27	15	12	24	25
Surfactants	mg/l	0.5	S	0.063	0.093	ND	0.064	ND	0.064	ND	0.076	ND	0.054
Total Nitrate, Nitrite-N, CALC	mg/l	10		ND	ND	0.1	ND	0.1	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			1.6	1	1.9	1.3	2.5	2.5	2.6	1.9	1.8	0.87
Carbon Dioxide	mg/l			11	5.8	11	4.9	9.6	4.5	7.3	3.9	12	5.1
General Physical													
Apparent Color	ACU	15	S	5	10	**15**	**15**	**20**	**15**	**25**	**25**	5	5
Lab pH	Units			7.6	7.9	7.6	8	7.7	8.1	7.8	8.1	7.6	7.9
Odor	TON	3	S	**40**	**3**	**40**	**3**	**67**	**3**	**40**	**3**	**40**	2
pH of CaCO3 saturation(25C)	Units			6.7	6.7	7	6.9	7	6.9	7.1	7.1	6.7	6.8
pH of CaCO3 saturation(60C)	Units			6.3	6.3	6.5	6.5	6.6	6.5	6.7	6.6	6.3	6.4
Specific Conductance	umho/cm	1600	S	**2830**	**2610**	**1790**	**1790**	**1600**	**1610**	1240	1260	**2460**	**2460**
Metal													
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium, Total, ICAP/MS	ug/l	100	P	**110**	**110**	69	75	50	67	40	54	99	**110**
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	ND		ND		ND		ND		ND	
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	18	35	9.1	21	ND	16	ND	14	15	33
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds													
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l	80	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluorotrichloromethane-Freon11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l		S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TBA	ug/l		P	ND		ND		ND		ND		ND	
Di-Isopropyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (p): Primary MCL (s): Secondary MCL (ND): Not Detected

Constituents	Units	MCL	MCL Type	Long Beach #3	Long Beach #3	Long Beach #3	Long Beach #3	Long Beach #3	Long Beach #3	Long Beach #3	Long Beach #3	Long Beach #3	Long Beach #3
				Zone 1	Zone 1	Zone 2	Zone 2	Zone 3	Zone 3	Zone 4	Zone 4	Zone 5	Zone 5
				03/26/08	08/25/08	03/26/08	08/25/08	03/26/08	08/25/08	03/26/08	08/25/08	03/26/08	08/25/08
General Mineral													
Total Dissolved Solid (TDS)	mg/l	1000	S	438	416	238	218	226	196	**1700**	**1720**	**3170**	**1800**
Cation Sum	meq/l			7.4	7.9	3.8	3.8	4.3	4.4	25	25	31	29
Anion Sum	meq/l			7.5	8.1	3.8	3.8	3.5	4.3	25	26	29	29
Iron, Total, ICAP	mg/l	0.3	S	0.055	0.046	ND	ND	0.027	ND	0.12	0.12	0.28	0.27
Manganese, Total, ICAP/MS	ug/l	50	S	16	14	10	11	15	14	**280**	**250**	**400**	**360**
Turbidity	NTU	5	S	1.3	1.5	0.2	0.1	0.3	0.25	0.45	0.6	1	1.4
Alkalinity	mg/l			345	379	138	139	126	166	128	126	120	135
Boron	mg/l			0.38	0.39	0.11	0.12	0.13	0.14	0.1	0.1	ND	ND
Bicarbonate as HCO3,calculated	mg/l			420	460	170	168	150	201	160	153	150	164
Calcium, Total, ICAP	mg/l			11	11	17	17	23	22	280	280	370	350
Carbonate as CO3, Calculated	mg/l			4.3	7.5	2.8	2.7	ND	3.3	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			41.5	41.9	55	54.4	74	70.6	1000	1000	1300	1220
Chloride	mg/l	500	S	19	18	20	19	35	33	**730**	**780**	**900**	**890**
Fluoride	mg/l	2	P	0.52	0.51	0.37	0.35	0.3	0.29	0.17	0.15	0.16	0.15
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.4	0.7	0.4	0.4	0.3	0.6	0.9	1.1	1	1.3
Magnesium, Total, ICAP	mg/l			3.4	3.5	3.1	2.9	4	3.8	76	74	87	83
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total, ICAP	mg/l			3.4	3.4	2.2	2.1	2.6	2.5	12	12	9.6	9.6
Sodium, Total, ICAP	mg/l			150	160	61	62	64	67	110	110	110	100
Sulfate	mg/l	500	S	ND	ND	23	23	ND	ND	68	61	74	70
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	0.065	0.074
Total Nitrate, Nitrite-N, CALC	mg/l	10		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			7.3	7.2	1.3	1.4	2.7	2.8	0.53	0.57	0.65	0.6
Carbon Dioxide	mg/l			4.3	3	ND	ND	ND	ND	5.2	3.2	4.9	2.7
General Physical													
Apparent Color	ACU	15	S	**80**	**60**	**20**	**15**	**25**	**25**	3	ND	10	5
Lab pH	Units			8.2	8.4	8.4	8.4	8.2	8.4	7.7	7.9	7.7	8
Odor	TON	3	S	**3**	2	2	**3**	**3**	**3**	2	**4**	**3**	**4**
pH of CaCO3 saturation(25C)	Units			7.8	7.7	8	8	7.9	7.8	6.8	6.8	6.7	6.7
pH of CaCO3 saturation(60C)	Units			7.3	7.3	7.5	7.5	7.5	7.4	6.4	6.4	6.3	6.2
Specific Conductance	umho/cm	1600	S	774	749	384	377	433	436	**2680**	**2750**	**3100**	**3100**
Metal													
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	2.4	1.1	2.8
Barium, Total, ICAP/MS	ug/l	100	P	9.8	8.9	17	17	10	9.6	**100**	**100**	**170**	**170**
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND		1		1.1	
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	16	34	19	39
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds													
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l	80	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluorotrichloromethane-Freon11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770			ND		ND		ND		ND		ND
n-Propylbenzene	ug/l	260		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l		S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TBA	ug/l		P	ND	ND	ND	ND	ND	ND	**8.6**	**8.2**	**11**	**9.8**
Di-Isopropyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (p): Primary MCL (s): Secondary MCL (ND): Not Detected

TABLE 4.3
WEST COAST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2007/2008

Constituents	Units	MCL	MCL Type	Long Beach #8	Long Beach #8	Long Beach #8	Long Beach #8	Long Beach #8	Long Beach #8
				Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6
				09/29/08	09/29/08	09/30/08	09/30/08	09/30/08	09/30/08
General Mineral									
Total Dissolved Solid (TDS)	mg/l	1000	S	754	812	858	**1510**	**1220**	**1240**
Cation Sum	meq/l			11	10	15	22	17	17
Anion Sum	meq/l			4.5	4.7	14	23	18	17
Iron, Total, ICAP	mg/l	0.3	S	0.19	0.15	0.2	0.19	**0.53**	**0.95**
Manganese, Total, ICAP/MS	ug/l	50	S	21	29	41	34	**270**	**1200**
Turbidity	NTU	5	S	1.6	2.3	2.3	0.4	**296**	**40**
Alkalinity	mg/l			192	185	571	362	274	195
Boron	mg/l			1.2	0.79	1.3	1.1	0.55	0.2
Bicarbonate as HCO3,calculated	mg/l			232	224	692	440	333	237
Calcium, Total, ICAP	mg/l			7.7	9.1	12	46	59	110
Carbonate as CO3, Calculated	mg/l			4.8	3.7	11	3.6	2.7	ND
Hardness (Total, as CaCO3)	mg/l			27.5	35.1	50.6	251	254	423
Chloride	mg/l	500	S	21	34	88	**550**	450	430
Fluoride	mg/l	2	P	0.86	0.86	0.61	0.25	0.22	0.47
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.3	0.3	0.9	1	0.9	0.9
Magnesium, Total, ICAP	mg/l			2	3	5	33	26	36
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	ND	ND	ND	ND
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND
Potassium, Total, ICAP	mg/l			ND	ND	7.5	12	9	4.9
Sodium, Total, ICAP	mg/l			250	220	320	390	270	200
Sulfate	mg/l	500	S	ND	ND	ND	ND	ND	22
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND
Total Nitrate, Nitrite-N, CALC	mg/l	10		ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			17	18	32	19	15	1.2
Carbon Dioxide	mg/l			ND	ND	4.5	5.7	4.3	4.9
General Physical									
Apparent Color	ACU	15	S	**600**	**250**	**400**	**80**	**60**	10
Lab pH	Units			8.5	8.4	8.4	8.1	8.1	7.9
Odor	TON	3	S	**8**	**8**	**4**	**4**	**8**	**8**
pH of CaCO3 saturation(25C)	Units			8.2	8.1	7.5	7.1	7.2	7
pH of CaCO3 saturation(60C)	Units			7.7	7.7	7.1	6.7	6.7	6.6
Specific Conductance	umho/cm	1600	S	1010	938	1360	**2410**	**1810**	**1870**
Metal									
Aluminum, Total, ICAP/MS	ug/l	1000	P	300	41	30	ND	120	100
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	1.8	1	2.5	ND	4.5	**20**
Barium, Total, ICAP/MS	ug/l	100	P	9.7	9.5	17	27	44	82
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	1.7	1.3	1.7	ND	ND	ND
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1000	S	5	6.7	2.6	ND	4.1	3.2
Lead, Total, ICAP/MS	ug/l	15		ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	17	9	ND
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	30	29	ND	47
Volatile Organic Compounds									
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l	80	P	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND
Fluorotrichloromethane-Freon11	ug/l	150	P	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200		ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770		ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260		ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l		S	ND	ND	ND	ND	ND	ND
Benzene	ug/l	0.5	P	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13		ND	ND	ND	ND	ND	ND
TBA	ug/l		P	ND	ND	ND	ND	ND	ND
Di-Isopropyl Ether	ug/l			ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	ug/l			ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l			ND	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (p): Primary MCL (s): Secondary MCL (ND): Not Detected

TABLE 4.3
WEST COAST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2007/2008

Constituents	Units	MCL	MCL Type	PM-1 Columbia	PM-1 Columbia	PM-1 Columbia	PM-1 Columbia
				Zone 1	Zone 1	Zone 2	Zone 2
				06/04/08	09/07/08	06/04/08	09/07/08
General Mineral							
Total Dissolved Solid (TDS)	mg/l	1000	S	296	332	**3250**	334
Cation Sum	meq/l			5.3	5.7	44	46
Anion Sum	meq/l			5.6	5.9	48	34
Iron, Total, ICAP	mg/l	0.3	S	0.072	0.074	**0.33**	0.29
Manganese, Total, ICAP/MS	ug/l	50	S	46	44	**270**	**250**
Turbidity	NTU	5	S	0.2	0.2	**8.7**	**8.2**
Alkalinity	mg/l			243	261	133	159
Boron	mg/l			0.14	0.15	ND	ND
Bicarbonate as HCO3,calculated	mg/l			295	317	162	194
Calcium, Total, ICAP	mg/l			25	27	420	440
Carbonate as CO3, Calculated	mg/l			4.8	3.3	ND	ND
Hardness (Total, as CaCO3)	mg/l			124	133	1710	1760
Chloride	mg/l	500	S	26	23	**1520**	**1000**
Fluoride	mg/l	2	P	0.25	0.34	0.07	0.14
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND
Langelier Index - 25 degree	None			0.8	0.7	1.3	1.1
Magnesium, Total, ICAP	mg/l			15	16	160	160
Mercury	ug/l	2	P	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	ND	ND
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND
Potassium, Total, ICAP	mg/l			8.7	9.2	16	16
Sodium, Total, ICAP	mg/l			60	65	220	240
Sulfate	mg/l	500	S	ND	ND	140	120
Surfactants	mg/l	0.5	S	ND	ND	0.073	0.06
Total Nitrate, Nitrite-N, CALC	mg/l	10		ND	ND	ND	ND
Total Organic Carbon	mg/l			1.7	1.2	0.64	0.51
Carbon Dioxide	mg/l			ND	3.3	3.3	8
General Physical							
Apparent Color	ACU	15	S	10	10	10	5
Lab pH	Units			8.4	8.2	7.9	7.6
Odor	TON	3	S	**3**	**3**	**4**	**4**
pH of CaCO3 saturation(25C)	Units			7.6	7.5	6.6	6.5
pH of CaCO3 saturation(60C)	Units			7.1	7.1	6.2	6.1
Specific Conductance	umho/cm	1600	S	524	527	**4610**	**4800**
Metal							
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	ND	ND	ND	ND
Barium, Total, ICAP/MS	ug/l	100	P	24	25	**440**	**500**
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	ND	ND	5.9	18
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1000	S	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15		ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	26
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND
Volatile Organic Compounds							
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l	80	P	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND
Fluorotrichloromethane-Freon11	ug/l	150	P	ND	ND	ND	ND
Freon 113	ug/l	1200		ND	ND	ND	ND
Isopropylbenzene	ug/l	770		ND	ND	ND	ND
n-Propylbenzene	ug/l	260		ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l		S	ND	ND	ND	ND
Benzene	ug/l	0.5	P	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND
MTBE	ug/l	13		ND	ND	ND	ND
TBA	ug/l		P	ND		ND	
Di-Isopropyl Ether	ug/l			ND	ND	ND	ND
Tert Amyl Methyl Ether	ug/l			ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l			ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (p): Primary MCL (s): Secondary MCL (ND): Not Detected

Constituents	Units	MCL	MCL Type	PM-3 Madrid	PM-3 Madrid	PM-3 Madrid	PM-3 Madrid	PM-3 Madrid	PM-3 Madrid	PM-3 Madrid	PM-3 Madrid
				Zone 1	Zone 1	Zone 2	Zone 2	Zone 3	Zone 3	Zone 4	Zone 4
				04/09/08	09/07/08	04/09/08	09/07/08	04/09/08	09/07/08	04/09/08	09/07/08
General Mineral											
Total Dissolved Solid (TDS)	mg/l	1000	S	382	408	324	332	702	730	934	**1020**
Cation Sum	meq/l			6.9	7	5.7	5.4	9.8	10	13	14
Anion Sum	meq/l			5.8	7.6	5.7	5.6	9.4	11	12	15
Iron, Total, ICAP	mg/l	0.3	S	0.053	0.053	0.13	0.12	0.093	0.098	**0.35**	**0.36**
Manganese, Total, ICAP/MS	ug/l	50	S	29	28	46	38	**56**	**52**	**310**	**260**
Turbidity	NTU	5	S	0.85	0.9	0.25	0.5	0.85	1.3	2.6	3.3
Alkalinity	mg/l			252	347	200	219	161	193	151	191
Boron	mg/l			0.37	0.37	0.12	0.12	0.17	0.18	0.36	0.36
Bicarbonate as HCO3,calculated	mg/l			305	421	243	267	196	235	184	233
Calcium, Total, ICAP	mg/l			12	13	45	41	85	87	100	110
Carbonate as CO3, Calculated	mg/l			5	5.5	2	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			69.5	72.8	166	152	311	324	377	406
Chloride	mg/l	500	S	26	24	60	41	220	240	310	360
Fluoride	mg/l	2	P	0.32	0.32	0.4	0.43	0.36	0.36	0.32	0.32
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.5	0.6	0.7	0.5	0.8	0.8	0.8	0.7
Magnesium, Total, ICAP	mg/l			9.6	9.8	13	12	24	26	31	32
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total, ICAP	mg/l			12	12	3.4	3.2	5	5.1	6.3	6.2
Sodium, Total, ICAP	mg/l			120	120	52	52	80	85	120	120
Sulfate	mg/l	500	S	ND	ND	ND	ND	ND	ND	32	31
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND
Total Nitrate, Nitrite-N, CALC	mg/l	10		ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			3	3	0.51	0.61	0.72	0.68	0.98	0.85
Carbon Dioxide	mg/l			2	3.5	3.2	5.5	3.2	4.9	3	7.6
General Physical											
Apparent Color	ACU	15	S	**35**	**30**	5	5	5	3	10	5
Lab pH	Units			8.4	8.3	8.1	7.9	8	7.9	8	7.7
Odor	TON	3	S	2	**3**	2	2	2	**3**	2	**3**
pH of CaCO3 saturation(25C)	Units			7.9	7.7	7.4	7.4	7.2	7.1	7.2	7
pH of CaCO3 saturation(60C)	Units			7.4	7.3	7	7	6.8	6.7	6.7	6.6
Specific Conductance	umho/cm	1600	S	682	665	581	520	1110	1080	1470	1410
Metal											
Aluminum, Total, ICAP/MS	ug/l	1000	P	62	ND	ND	ND	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	ND	ND	ND	ND	ND	ND	4.1	4.5
Barium, Total, ICAP/MS	ug/l	100	P	21	22	21	19	60	62	72	74
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND		ND		ND	
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1000	S	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15		ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	7.9	6.2	10
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds											
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	0.9	0.9
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	5	5.1	2.6	1.9
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	1.1	1	1.3	1
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l	80	P	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
Fluorotrichloromethane-Freon11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200		ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770		ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260		ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l		S	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13		ND	ND	ND	ND	ND	ND	ND	ND
TBA	ug/l		P	ND		ND		ND		ND	
Di-Isopropyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (p): Primary MCL (s): Secondary MCL (ND): Not Detected

Constituents	Units	MCL	MCL Type	PM-4 Mariner Zone 1 04/13/08	PM-4 Mariner Zone 1 08/24/08	PM-4 Mariner Zone 2 04/13/08	PM-4 Mariner Zone 2 08/24/08	PM-4 Mariner Zone 3 04/13/08	PM-4 Mariner Zone 3 08/24/08	PM-4 Mariner Zone 4 04/13/08	PM-4 Mariner Zone 4 08/24/08
General Mineral											
Total Dissolved Solid (TDS)	mg/l	1000	S	336	314	**11900**	**11300**	608	636	656	664
Cation Sum	meq/l			5.5	6	190	190	8.8	9.8	10	11
Anion Sum	meq/l			5.8	6	190	250	9.3	10	10	11
Iron, Total, ICAP	mg/l	0.3	S	0.067	0.068	0.21	0.21	0.025	0.028	0.13	0.14
Manganese, Total, ICAP/MS	ug/l	50	S	34	36	**927**	**940**	32	37	**76**	**83**
Turbidity	NTU	5	S	0.15	0.15	1.2	1.7	0.6	1.8	0.45	0.75
Alkalinity	mg/l			250	263	153	157	152	174	193	205
Boron	mg/l			0.17	0.17	ND	ND	0.23	0.23	0.24	0.24
Bicarbonate as HCO3,calculated	mg/l			303	319	186	191	185	211	234	249
Calcium, Total, ICAP	mg/l			26	27	1400	1400	36	38	74	73
Carbonate as CO3, Calculated	mg/l			3.9	5.2	ND	ND	ND	3.4	2.4	3.2
Hardness (Total, as CaCO3)	mg/l			110	117	5270	5270	130	136	261	265
Chloride	mg/l	500	S	28	26	**6000**	**8000**	96	110	110	120
Fluoride	mg/l	2	P	0.36	0.36	0.14	0.09	0.46	0.47	0.3	0.28
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.8	0.9	1.7	1.6	0.6	0.9	1	1.1
Magnesium, Total, ICAP	mg/l			11	12	430	430	9.9	10	20	20
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total, ICAP	mg/l			6.8	7.1	49	48	5.5	5.8	6.1	6.2
Sodium, Total, ICAP	mg/l			77	81	2000	2000	150	160	120	120
Sulfate	mg/l	500	S	ND	ND	**700**	**870**	170	180	160	170
Surfactants	mg/l	0.5	S	ND	ND	ND	0.119	ND	ND	ND	ND
Total Nitrate, Nitrite-N, CALC	mg/l	10		ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			1.9	1.8	1.2	1.3	2.2	2.2	1.2	1.4
Carbon Dioxide	mg/l			2.5	2.1	6.1	7.9	ND	ND	2.4	2
General Physical											
Apparent Color	ACU	15	S	**15**	10	5	5	**40**	**30**	5	5
Lab pH	Units			8.3	8.4	7.7	7.6	8.2	8.4	8.2	8.3
Odor	TON	3	S	1	2	2	**3**	2	**3**	2	2
pH of CaCO3 saturation(25C)	Units			7.5	7.5	6	6	7.6	7.5	7.2	7.2
pH of CaCO3 saturation(60C)	Units			7.1	7.1	5.6	5.6	7.2	7.1	6.8	6.7
Specific Conductance	umho/cm	1600	S	664	569	**18900**	**18920**	1010	1070	1090	1070
Metal											
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	ND	ND	ND	130	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	ND	ND	2.7	**11**	ND	ND	ND	ND
Barium, Total, ICAP/MS	ug/l	100	P	21	22	**220**	**240**	69	76	53	56
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	ND		4.2		2.5		ND	
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1000	S	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15		ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	52	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	47	**130**	ND	ND	ND	ND
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds											
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l	80	P	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
Fluorotrichloromethane-Freon11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200		ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770		ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260		ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l		S	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13		ND	ND	ND	ND	ND	ND	ND	ND
TBA	ug/l		P	ND		ND		ND		ND	
Di-Isopropyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND

TABLE 4.3
WEST COAST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2007/2008

Constituents	Units	MCL	MCL Type	Westchester #1	Westchester #1	Westchester #1	Westchester #1	Westchester #1	Westchester #1	Westchester #1	Westchester #1	Westchester #1	Westchester #1
				Zone 1	Zone 1	Zone 2	Zone 2	Zone 3	Zone 3	Zone 4	Zone 4	Zone 5	Zone 5
				04/09/08	09/11/08	04/09/08	09/11/08	04/09/08	09/11/08	04/09/08	09/11/08	04/09/08	09/11/08
General Mineral													
Total Dissolved Solid (TDS)	mg/l	1000	S	**1280**	**1200**	750	806	610	716	572	582	564	754
Cation Sum	meq/l			20	9.6	12	13	11	11	10	11	9.6	9.8
Anion Sum	meq/l			20	19	9	13	7.9	11	9.3	10	9.6	9.7
Iron, Total, ICAP	mg/l	0.3	S	0.25	0.12	0.12	0.12	0.23	0.22	0.13	0.14	0.29	0.29
Manganese, Total, ICAP/MS	ug/l	50	S	**69**	**88**	**61**	**55**	**170**	**150**	4.2	**120**	ND	**180**
Turbidity	NTU	5	S	0.6	3.4	0.65	0.8	0.2	0.2	0.35	0.25	0.65	1.2
Alkalinity	mg/l			825	765	346	561	304	479	291	360	300	317
Boron	mg/l			1.9	0.79	0.87	0.89	0.45	0.48	0.24	0.24	0.23	0.23
Bicarbonate as HCO3,calculated	mg/l			1000	930	420	682	369	583	354	438	365	386
Calcium, Total, ICAP	mg/l			27	22	29	29	48	47	72	71	67	68
Carbonate as CO3, Calculated	mg/l			10	7.6	4.3	5.6	3.8	4.8	2.9	2.8	3	2.5
Hardness (Total, as CaCO3)	mg/l			137	100	142	142	210	208	299	301	278	281
Chloride	mg/l	500	S	130	110	72	67	64	59	64	59	68	63
Fluoride	mg/l	2	P	0.26	0.26	0.28	0.27	0.28	0.26	0.27	0.26	0.32	0.32
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			1.2	1	0.8	1	1	1.1	1.1	1	1	1
Magnesium, Total, ICAP	mg/l			17	11	17	17	22	22	29	30	27	27
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total, ICAP	mg/l			15	7.1	14	15	12	12	9.2	9.4	7.3	7.2
Sodium, Total, ICAP	mg/l			380	170	210	220	140	150	95	98	88	92
Sulfate	mg/l	500	S	10	23	ND	ND	1.1	ND	79	69	82	76
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Nitrate, Nitrite-N, CALC	mg/l	10		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			28	29	9.9	11	3.9	3.6	1.8	1.6	1.5	1.3
Carbon Dioxide	mg/l			10	12	4.3	8.9	3.8	7.6	4.6	7.2	4.8	6.3
General Physical													
Apparent Color	ACU	15	S	**600**	**300**	**100**	**100**	**25**	**25**	10	**15**	10	10
Lab pH	Units			8.2	8.1	8.2	8.1	8.2	8.1	8.1	8	8.1	8
Odor	TON	3	S	2	2	1	**3**	2	2	2	2	2	**3**
pH of CaCO3 saturation(25C)	Units			7	7.1	7.4	7.1	7.2	7	7	7	7.1	7
pH of CaCO3 saturation(60C)	Units			6.6	6.7	6.9	6.7	6.8	6.6	6.6	6.5	6.6	6.6
Specific Conductance	umho/cm	1600	S	**2000**	**1690**	1270	1220	1050	1010	1010	969	947	912
Metal													
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	ND	ND	ND	ND	1.2	ND	ND	ND	ND	1.3
Barium, Total, ICAP/MS	ug/l	100	P	93	93	**141**	**130**	74	75	2.1	76	ND	63
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	2.4	1.6	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1000	S	ND	2.8	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds													
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l	80	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluorotrichloromethane-Freon11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l		S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TBA	ug/l		P	ND		ND		ND		ND		ND	
Di-Isopropyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (p): Primary MCL (s): Secondary MCL (ND): Not Detected

TABLE 4.3
WEST COAST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2007/2008

Constituents	Units	MCL	MCL Type	Wilmington #1	Wilmington #1	Wilmington #1	Wilmington #1	Wilmington #1	Wilmington #1	Wilmington #1	Wilmington #1	Wilmington #1	Wilmington #1
				Zone 1	Zone 1	Zone 2	Zone 2	Zone 3	Zone 3	Zone 4	Zone 4	Zone 5	Zone 5
				03/28/08	08/25/08	03/28/08	08/25/08	03/28/08	08/25/08	03/28/08	08/25/08	03/28/08	08/25/08
General Mineral													
Total Dissolved Solid (TDS)	mg/l	1000	S	710	692	**2120**	?	**2600**	**2890**	**1530**	**1410**	784	854
Cation Sum	meq/l			9.9	10	23	25	30	31	23	22	11	13
Anion Sum	meq/l			10	9.9	24	23	32	31	25	22	13	14
Iron, Total, ICAP	mg/l	0.3	S	ND	ND	0.039	0.048	ND	ND	ND	0.032	0.1	0.099
Manganese, Total, ICAP/MS	ug/l	50	S	21	25	24	24	ND	ND	19	20	44	**53**
Turbidity	NTU	5	S	0.1	0.15	0.15	0.15	0.2	0.15	0.1	0.25	1.9	1.9
Alkalinity	mg/l			124	142	113	144	135	129	148	159	144	148
Boron	mg/l			0.21	0.21	0.36	0.32	0.26	ND	0.25	0.25	0.18	0.19
Bicarbonate as HCO3,calculated	mg/l			151	173	138	175	165	157	180	193	175	180
Calcium, Total, ICAP	mg/l			59	59	200	220	210	210	120	110	89	100
Carbonate as CO3, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			230	230	690	763	710	751	470	439	350	398
Chloride	mg/l	500	S	270	250	**700**	**730**	**1000**	**1000**	**580**	**520**	180	230
Fluoride	mg/l	2	P	0.14	0.14	0.06	0.07	0.07	0.07	0.1	0.1	0.14	0.14
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.5	0.7	0.7	1	0.3	0.8	0.8	0.9	0.5	0.8
Magnesium, Total, ICAP	mg/l			19	20	46	52	55	55	42	40	30	36
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total, ICAP	mg/l			7.7	7.6	7.9	8.1	9.4	9.5	8.4	7.6	5.9	6.1
Sodium, Total, ICAP	mg/l			120	120	210	230	350	370	300	300	100	120
Sulfate	mg/l	500	S	ND	ND	84	ND	39	ND	250	220	220	210
Surfactants	mg/l	0.5	S	0.434	0.257	0.409	0.382	0.299	0.328	0.163	0.222	**0.752**	0.491
Total Nitrate, Nitrite-N, CALC	mg/l	10		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			3.8	3.4	4.9	2.1	4.9	4.3	3.1	2.2	3.3	3
Carbon Dioxide	mg/l			2.5	2.3	4.5	3.6	17	5.1	3.7	3.2	4.5	3
General Physical													
Apparent Color	ACU	15	S	5	5	5	5	10	10	5	5	5	5
Lab pH	Units			8	8.1	7.7	7.9	7.2	7.7	7.9	8	7.8	8
Odor	TON	3	S	**17**	**8**	**17**	**40**	**40**	**40**	**17**	**8**	**17**	**8**
pH of CaCO3 saturation(25C)	Units			7.5	7.4	7	6.9	6.9	6.9	7.1	7.1	7.3	7.2
pH of CaCO3 saturation(60C)	Units			7.1	7	6.6	6.4	6.5	6.5	6.7	6.7	6.8	6.7
Specific Conductance	umho/cm	1600	S	1170	1130	**2600**	**2780**	**3450**	**3380**	**2530**	**2360**	1240	1370
Metal													
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium, Total, ICAP/MS	ug/l	100	P	11	12	13	16	28	31	50	49	71	83
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	ND		ND		ND		ND		ND	
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	ND	11	ND	13	46	36	ND	ND	ND	ND
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds													
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l	80	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluorotrichloromethane-Freon11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770			ND		ND		ND		ND		ND
n-Propylbenzene	ug/l	260		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l		S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TBA	ug/l		P	**136**	**112**	**163**	**149**	**143**	**122**	**47**	**32**	**50.7**	**48**
Di-Isopropyl Ether	ug/l			3.8	3.5	23	22	6.1	5.8	3.5	3.1	ND	2.5
Tert Amyl Methyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (p): Primary MCL (s): Secondary MCL (ND): Not Detected

TABLE 4.3
WEST COAST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2007/2008

Constituents	Units	MCL	MCL Type	Wilmington #2	Wilmington #2	Wilmington #2	Wilmington #2	Wilmington #2	Wilmington #2	Wilmington #2	Wilmington #2	Wilmington #2	Wilmington #2
				Zone 1	Zone 1	Zone 2	Zone 2	Zone 3	Zone 3	Zone 4	Zone 4	Zone 5	Zone 5
				04/08/08	09/09/08	04/08/08	09/09/08	04/08/08	09/09/08	04/08/08	09/09/08	04/08/08	09/09/08
General Mineral													
Total Dissolved Solid (TDS)	mg/l	1000	S	526	530	**1490**	**1600**	332	424	**1170**	**1200**	**6600**	**5900**
Cation Sum	meq/l			8.3	4.5	24	13	5.8	6.2	19	20	94	87
Anion Sum	meq/l			7.2	8.8	23	27	5.3	6.5	20	22	97	110
Iron, Total, ICAP	mg/l	0.3	S	0.069	0.045	0.073	0.035	ND	ND	ND	ND	ND	ND
Manganese, Total, ICAP/MS	ug/l	50	S	5	4.4	14	14	8.6	9.7	11	12	**74**	**74**
Turbidity	NTU	5	S	0.65	1	0.5	0.5	0.55	0.35	1.6	0.65	0.9	0.45
Alkalinity	mg/l			297	384	343	500	132	169	270	380	152	175
Boron	mg/l			0.63	0.34	1.7	0.92	0.19	0.18	0.58	0.6	0.63	0.6
Bicarbonate as HCO3,calculated	mg/l			359	464	417	608	160	205	328	462	185	213
Calcium, Total, ICAP	mg/l			3.1	1.6	32	17	21	23	56	55	310	310
Carbonate as CO3, Calculated	mg/l			9.3	12	4.3	5	ND	2.1	3.4	3.8	ND	ND
Hardness (Total, as CaCO3)	mg/l			16.8	8.94	175	91.9	85.4	93.3	243	236	1390	1300
Chloride	mg/l	500	S	42	38	**560**	**600**	94	110	**500**	**500**	**3000**	**3300**
Fluoride	mg/l	2	P	1	0.98	0.35	0.31	0.26	0.24	0.57	0.56	0.22	0.19
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.2	0	0.9	0.7	0.3	0.4	1	1.1	1.2	1
Magnesium, Total, ICAP	mg/l			2.2	1.2	23	12	8	8.7	25	24	150	140
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total, ICAP	mg/l			4.7	2.6	12	6.3	4.6	4.8	8.2	8.8	22	21
Sodium, Total, ICAP	mg/l			180	99	460	260	92	98	310	340	1500	1400
Sulfate	mg/l	500	S	ND	ND	ND	ND	ND	ND	4.6	ND	450	420
Surfactants	mg/l	0.5	S	0.1	ND	0.073	ND	ND	ND	0.075	ND	0.131	ND
Total Nitrate, Nitrite-N, CALC	mg/l	10		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			10	8.3	19	18	2.6	2.3	9.3	10	2.9	1.3
Carbon Dioxide	mg/l			ND	ND	4.3	7.9	ND	2.1	3.4	6	3.8	7
General Physical													
Apparent Color	ACU	15	S	**400**	**200**	**150**	**150**	**25**	**200**	**100**	**100**	**15**	**15**
Lab pH	Units			8.6	8.6	8.2	8.1	8.2	8.2	8.2	8.1	7.9	7.7
Odor	TON	3	S	1	**16**	**8**	**4**	**3**	2	**400**	**8**	**8**	**3**
pH of CaCO3 saturation(25C)	Units			8.4	8.6	7.3	7.4	7.9	7.8	7.2	7	6.7	6.7
pH of CaCO3 saturation(60C)	Units			8	8.1	6.9	7	7.5	7.3	6.7	6.6	6.2	6.2
Specific Conductance	umho/cm	1600	S	836	802	**2600**	**2570**	658	648	**2240**	**1960**	**9750**	**9290**
Metal													
Aluminum, Total, ICAP/MS	ug/l	1000	P	24	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium, Total, ICAP/MS	ug/l	100	P	4.5	4.9	49	51	8.6	11	43	41	66	71
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	1.6	1.5	1.9	ND	ND	ND	1.8	ND	ND	
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1000	S	ND	2.9	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	11	13	ND	ND	6.1	5.9	ND	ND
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds													
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l	80	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluorotrichloromethane-Freon11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l		S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TBA	ug/l		P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-Isopropyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (p): Primary MCL (s): Secondary MCL (ND): Not Detected

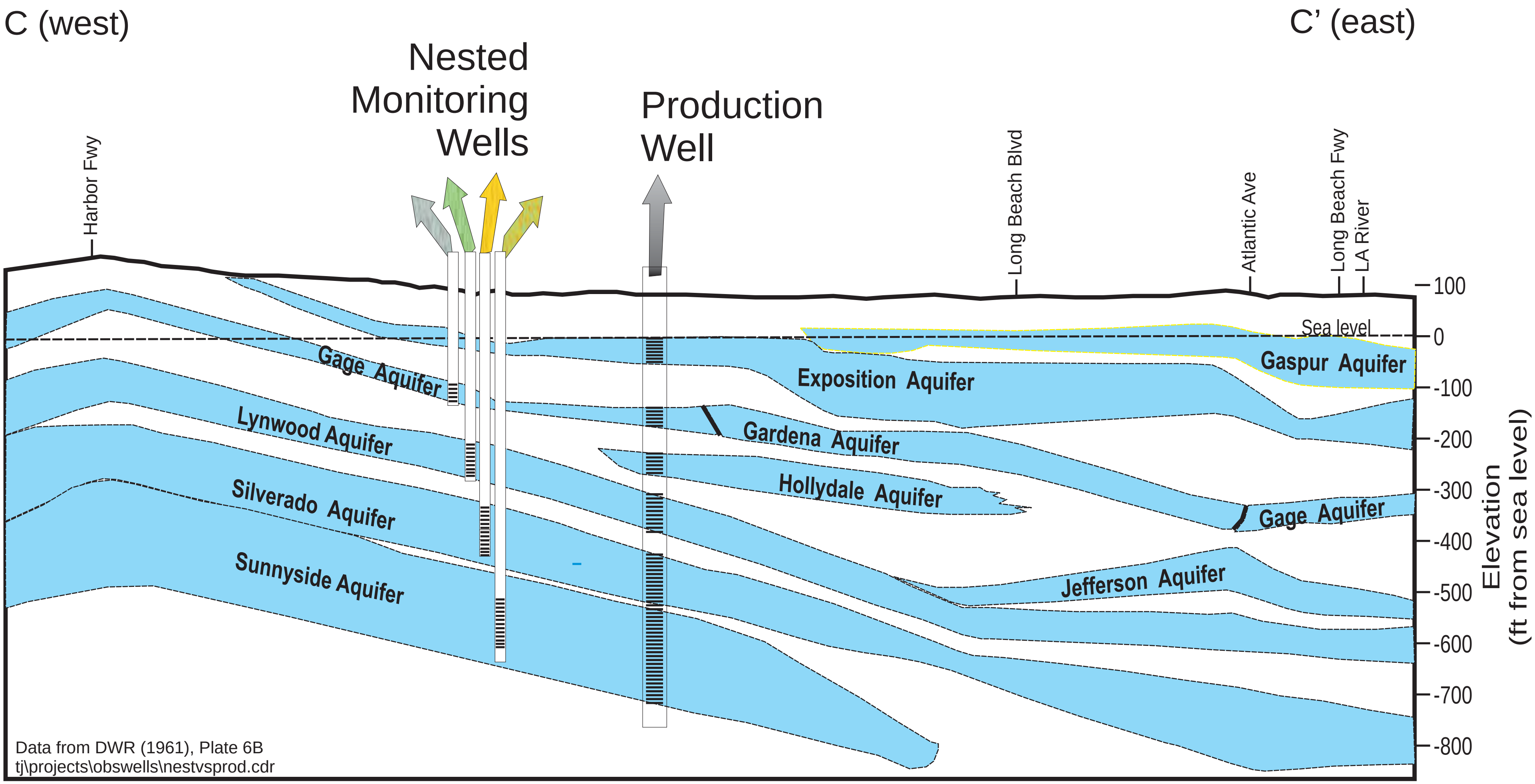
FIGURES

Page Left Intentionally Blank

Water Replenishment District of Southern California
SANTA MONICA
CULVER CITY
MONTEREY PARK
SOUTH EL MONTE
WEST COVIN
LA PUENTE
MONTEBELLO
INDUST
Los Angeles Forebay
VERNON
COMMERCE
Rio Hondo Spreading Grounds
PICO RIVERA
San Gabriel River Spreading Grounds
MAYWOOD
HUNTINGTON PARK
BELL
BELL GARDENS
CUDAHY
Montebello Forebay
WHITTIER
LA HABRA HEIGHTS
Whittier Area
NON-PRESSURE AREA
PRESSURE AREA
NEWPORT
INGLEWOOD
UPLIFT
LOS ANGELES
INGLEWOOD
Los Angeles Intl
West
Central
SOUTH GATE
DOWNEY
SANTA FE SPRINGS
LYNWOOD
EL SEGUNDO
HAWTHORNE
NORWALK
LA MIRADA
Santa Monica Bay
MANHATTAN BEACH
West Coast Barrier
LAWNDALE
GARDENA
Coast
COMPTON
PARAMOUNT
BELLFLOWER
HERMOSA BEACH
REDONDO BEACH
ARTESIA
CERRITOS
Basin
Basin
LAKEWOOD
PACIFIC OCEAN
TORRANCE
CARSON
HAWAIIAN GARDENS
Long Beach Airport
Dominguez Gap Barrier
SIGNAL HILL
LOMITA
PALOS VERDES ESTATES
ROLLING HILLS ESTATES
LOS ANGELES
LONG BEACH
Alamitos Gap Barrier
ROLLING HILLS
RANCHO PALOS VERDES
San Pedro Bay
WRD

Figure 1.1

NESTED WELLS versus PRODUCTION WELLS FOR AQUIFER-SPECIFIC DATA



Production wells are typically perforated across multiple aquifers producing an average water quality. Nested monitoring wells are screened in a portion of a specific aquifer, providing water quality and water level information for the specific zone.

Figure 1.2

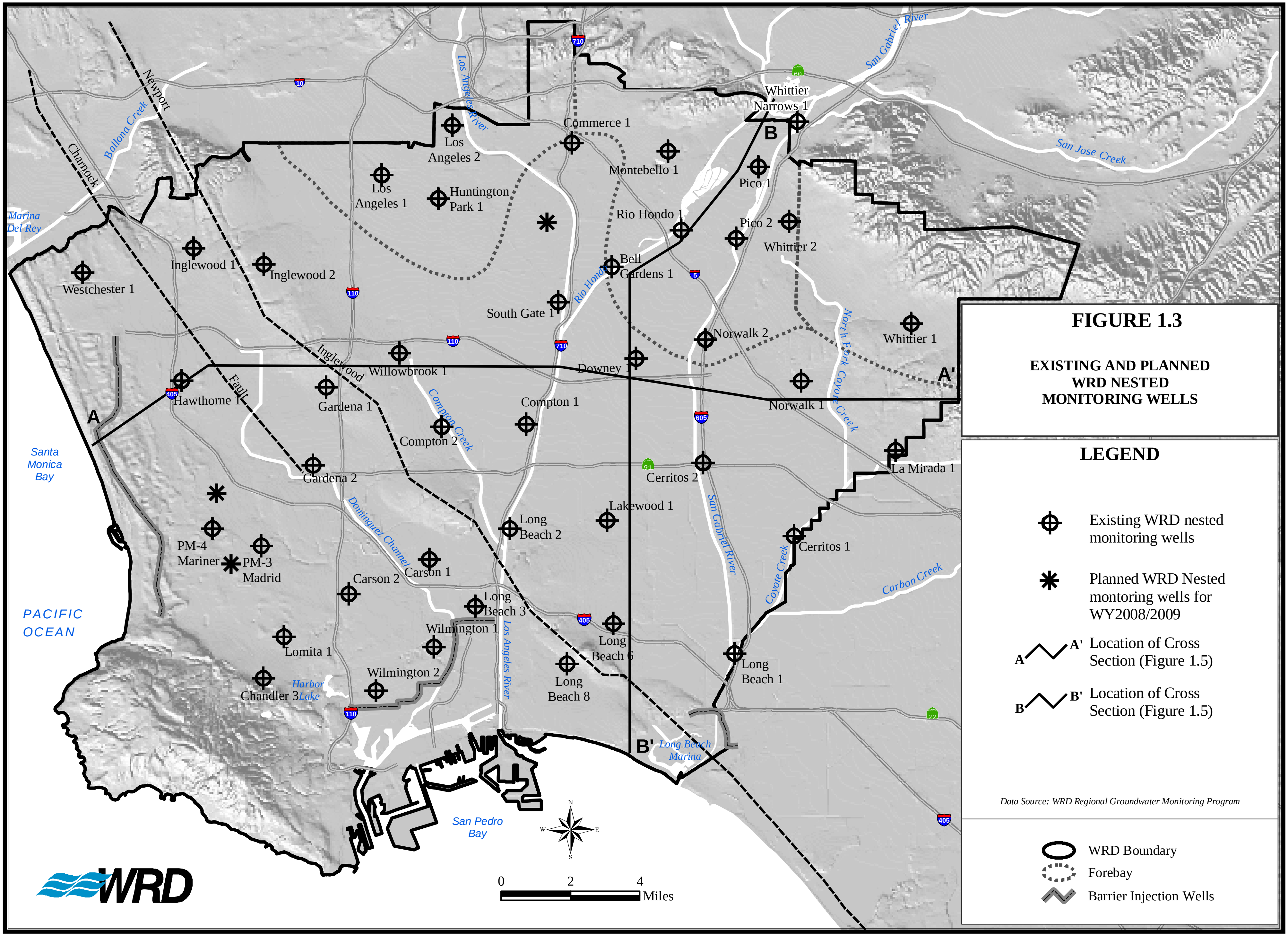
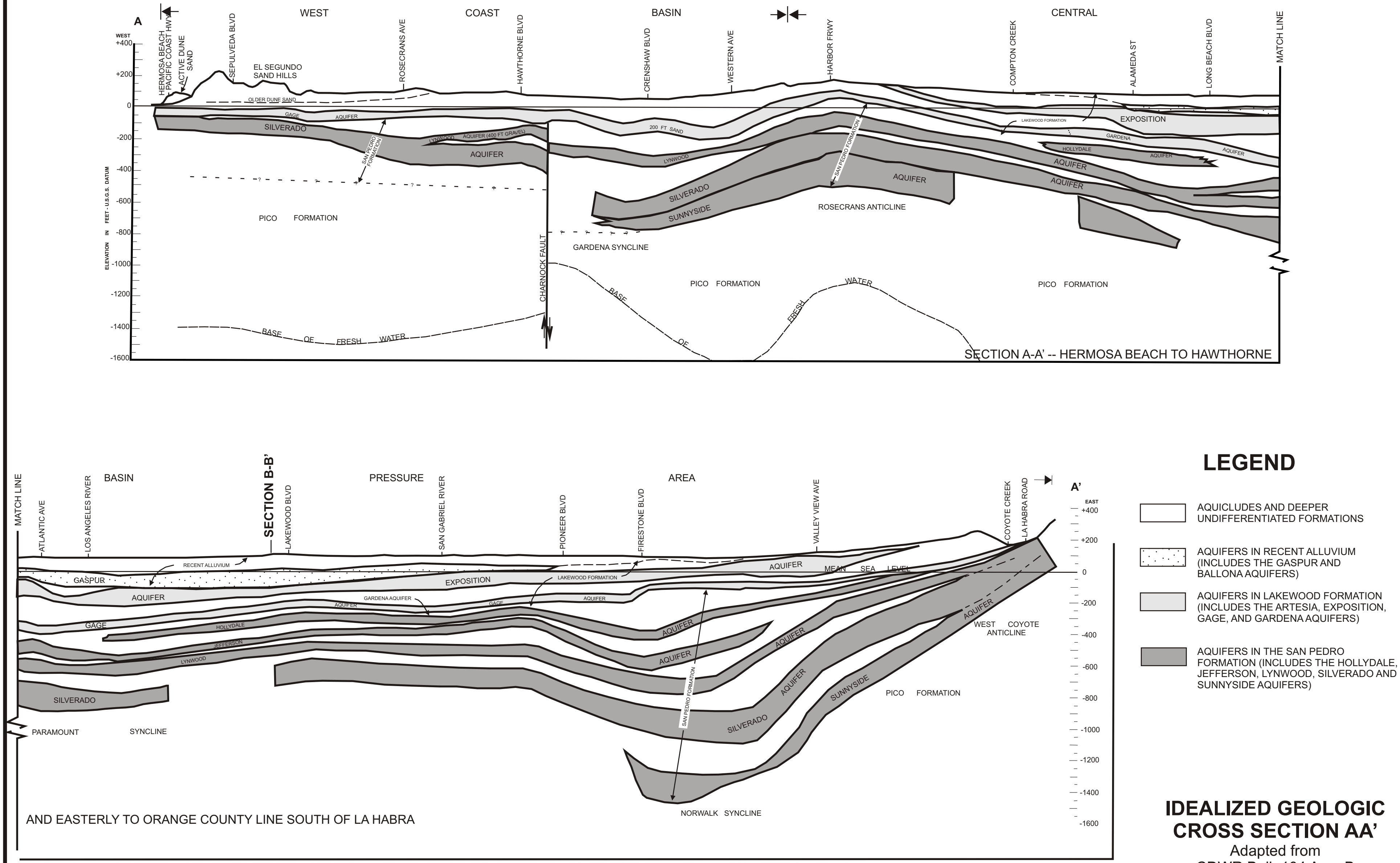


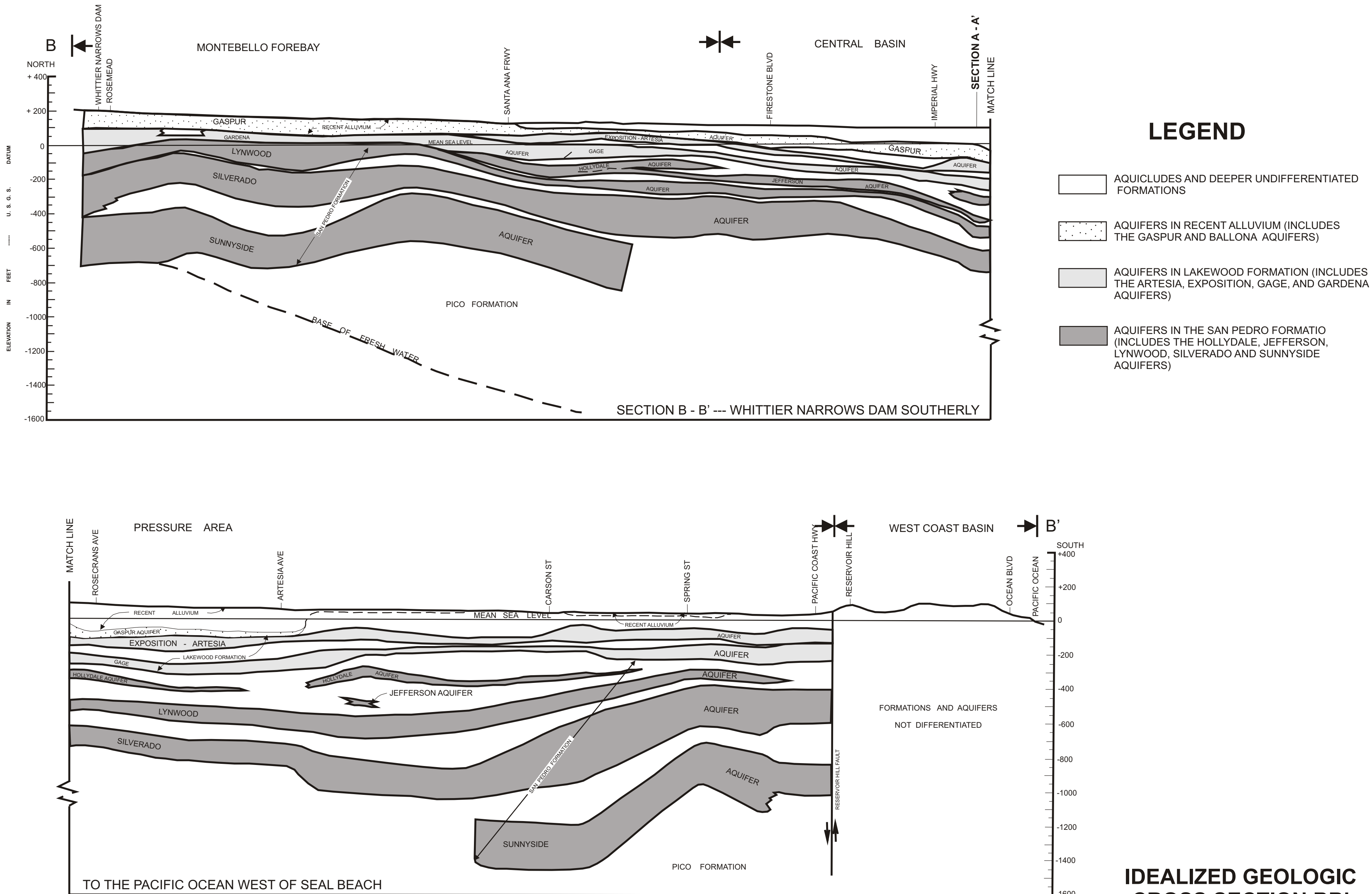
FIGURE 1.3

EXISTING AND PLANNED WRD NESTED MONITORING WELLS



IDEALIZED GEOLOGIC CROSS SECTION AA'
Adapted from
CDWR Bull. 104 App. B

FIGURE 1.4



IDEALIZED GEOLOGIC CROSS SECTION BB'

Adapted from CDWR Bull. 104 App. B

FIGURE 1.5

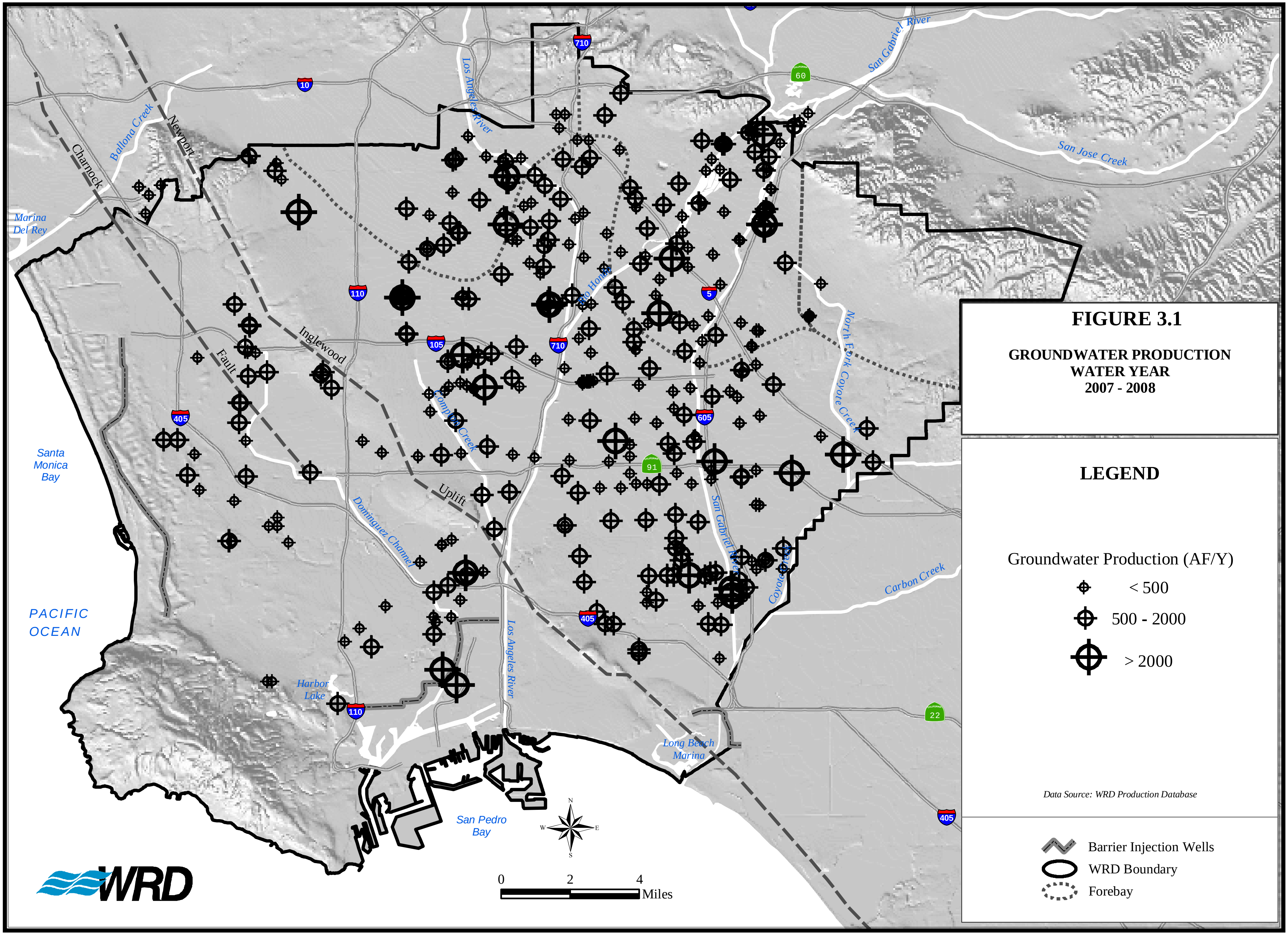


FIGURE 3.1

GROUNDWATER PRODUCTION WATER YEAR 2007 - 2008

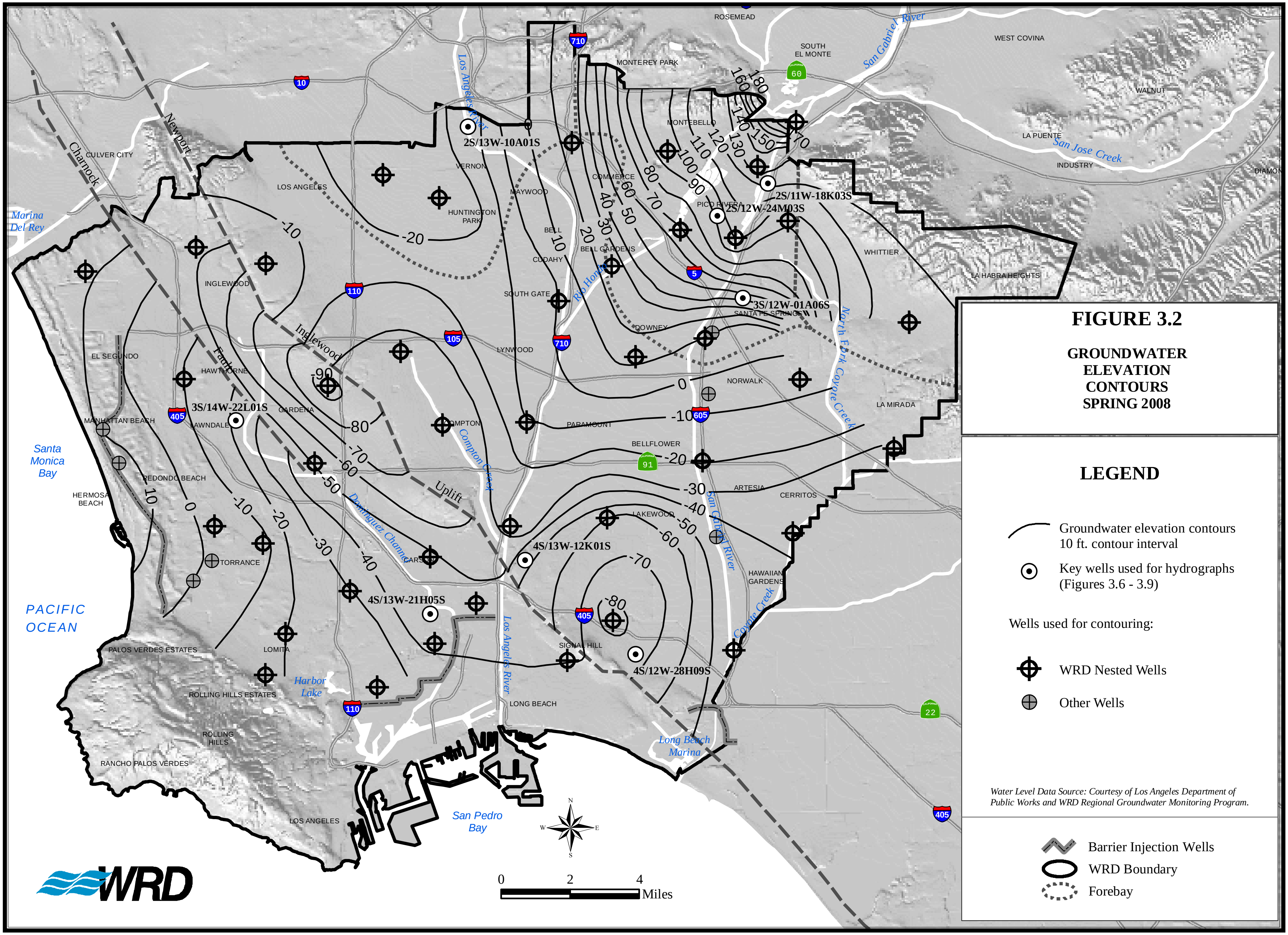


FIGURE 3.2

GROUNDWATER ELEVATION CONTOURS SPRING 2008

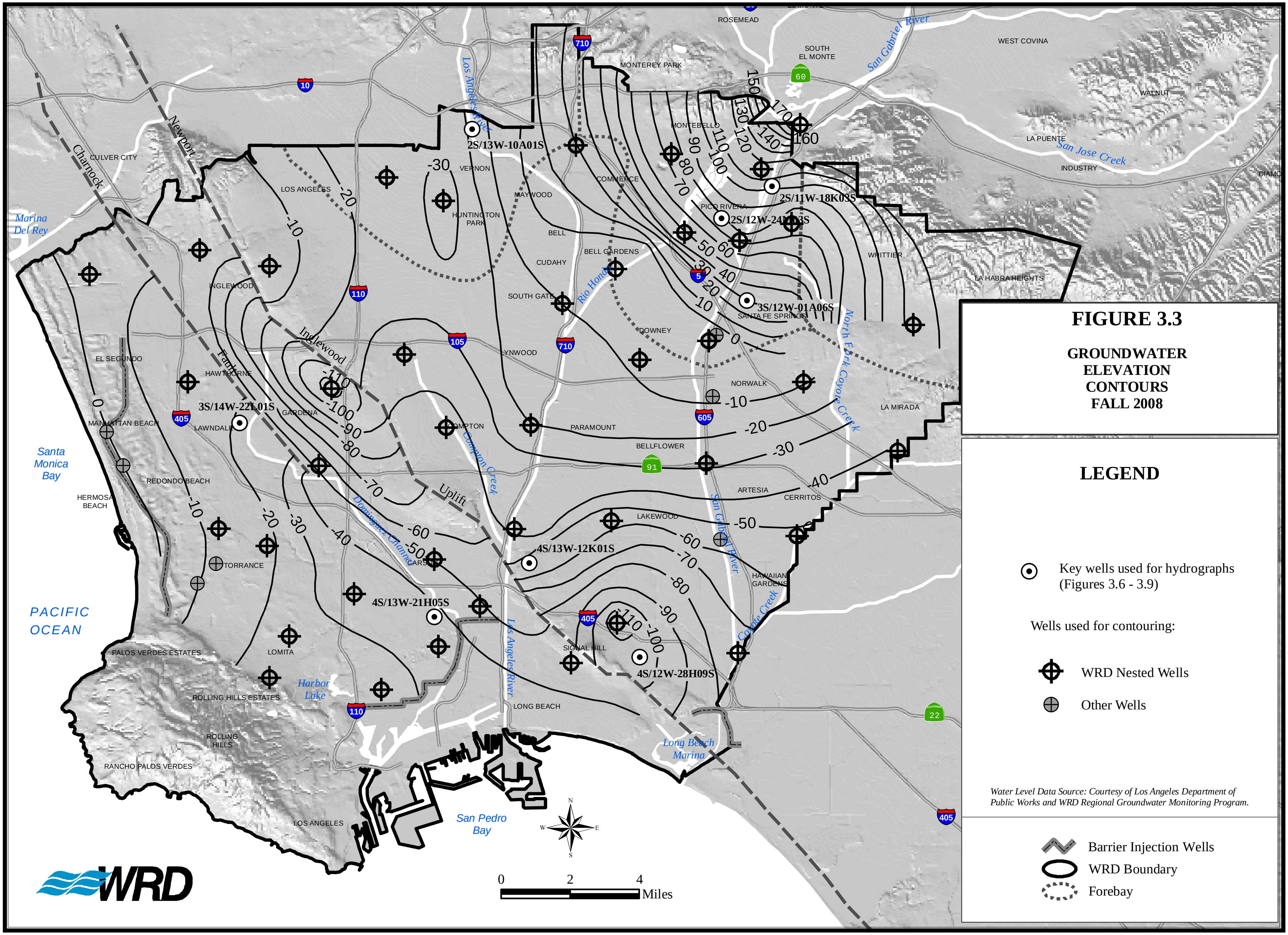


FIGURE 3.3
GROUNDWATER ELEVATION CONTOURS FALL 2008
LEGEND
Key wells used for hydrographs (Figures 3.6 - 3.9)
Wells used for contouring:
WRD Nested Wells
Other Wells
Barrier Injection Wells
WRD Boundary
Forebay
Water Level Data Source: Courtesy of Los Angeles Department of Public Works and WRD Regional Groundwater Monitoring Program.
2S/13W-10A01S
2S/11W-18K03S
3S/12W-01A06S
3S/14W-22L01S
4S/13W-12K01S
4S/13W-21H05S
4S/12W-28H09S
PACIFIC OCEAN
Santa Monica Bay
San Pedro Bay
Marina Del Rey
Harbor Lake
Long Beach Marina
Los Angeles River
San Gabriel River
Rio Hondo
Compton Creek
Dominguez Channel
Coyote Creek
North Fork Coyote Creek
San Jose Creek
Newport
Inglewood
Uplift
Charnock
ROSEMEAD
SOUTH EL MONTE
WEST COVINA
MONTEREY PARK
WALNUT
LA PUENTE
INDUSTRY
MONTEBELLO
CULVER CITY
LOS ANGELES
VERNON
COMMERCE
MAYWOOD
HUNTINGTON PARK
BELL
PICO RIVERA
WHITTIER
BELL GARDENS
CUDAHY
LA HABRA HEIGHTS
SOUTH GATE
SANTA FE SPRINGS
INGLEWOOD
DOWNEY
EL SEGUNDO
LYNWOOD
HAWTHORNE
NORWALK
LA MIRADA
GARDENA
MANHATTAN BEACH
LAWNDALE
COMPTON
PARAMOUNT
BELLFLOWER
REDONDO BEACH
HERMOSA BEACH
ARTESIA
CERRITOS
LAKEWOOD
TORRANCE
CARSON
HAWAIIAN GARDENS
PALOS VERDES ESTATES
LOMITA
SIGNAL HILL
ROLLING HILLS ESTATES
LONG BEACH
ROLLING HILLS
RANCHO PALOS VERDES
0 2 4 Miles
WRD

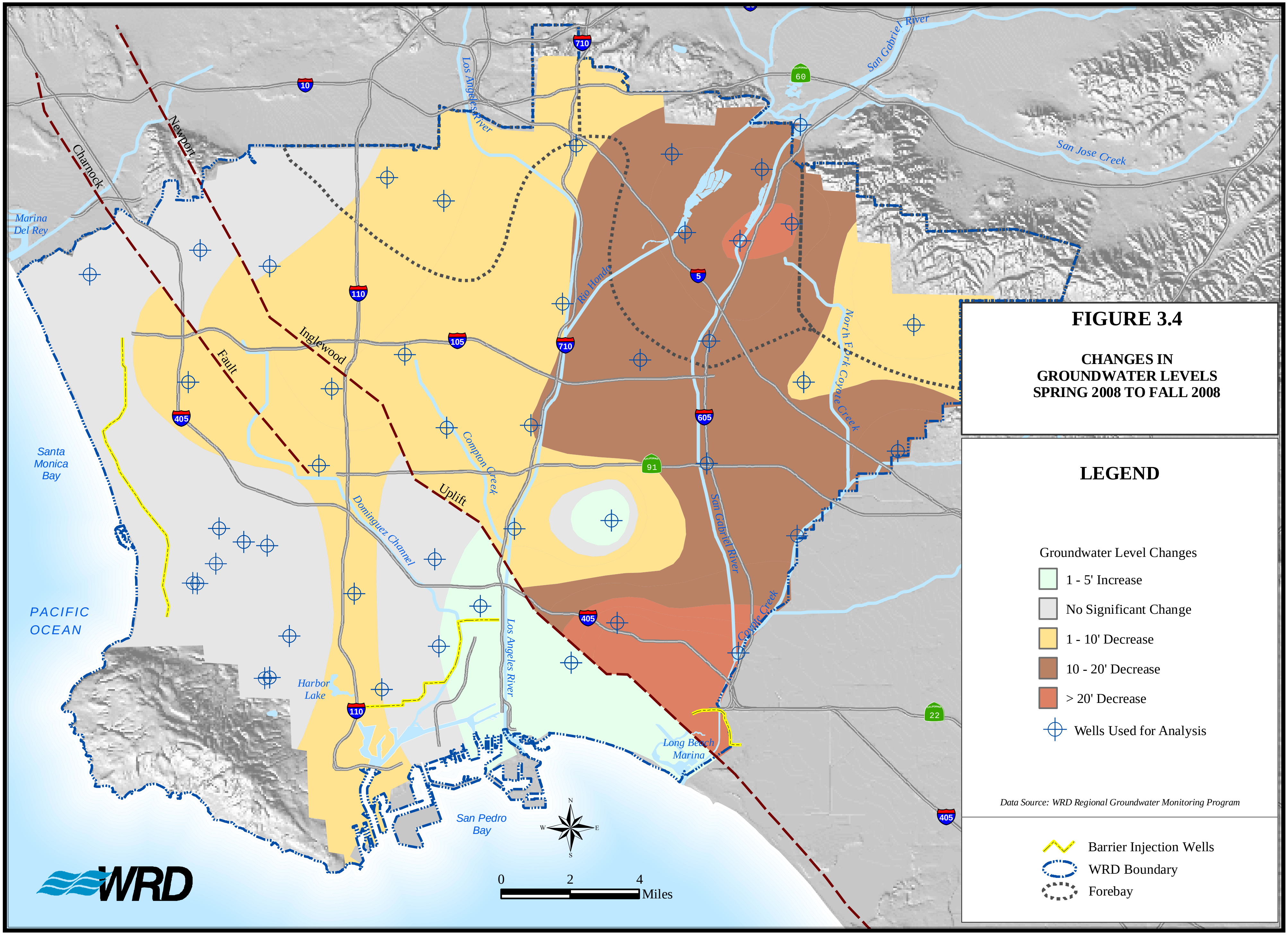
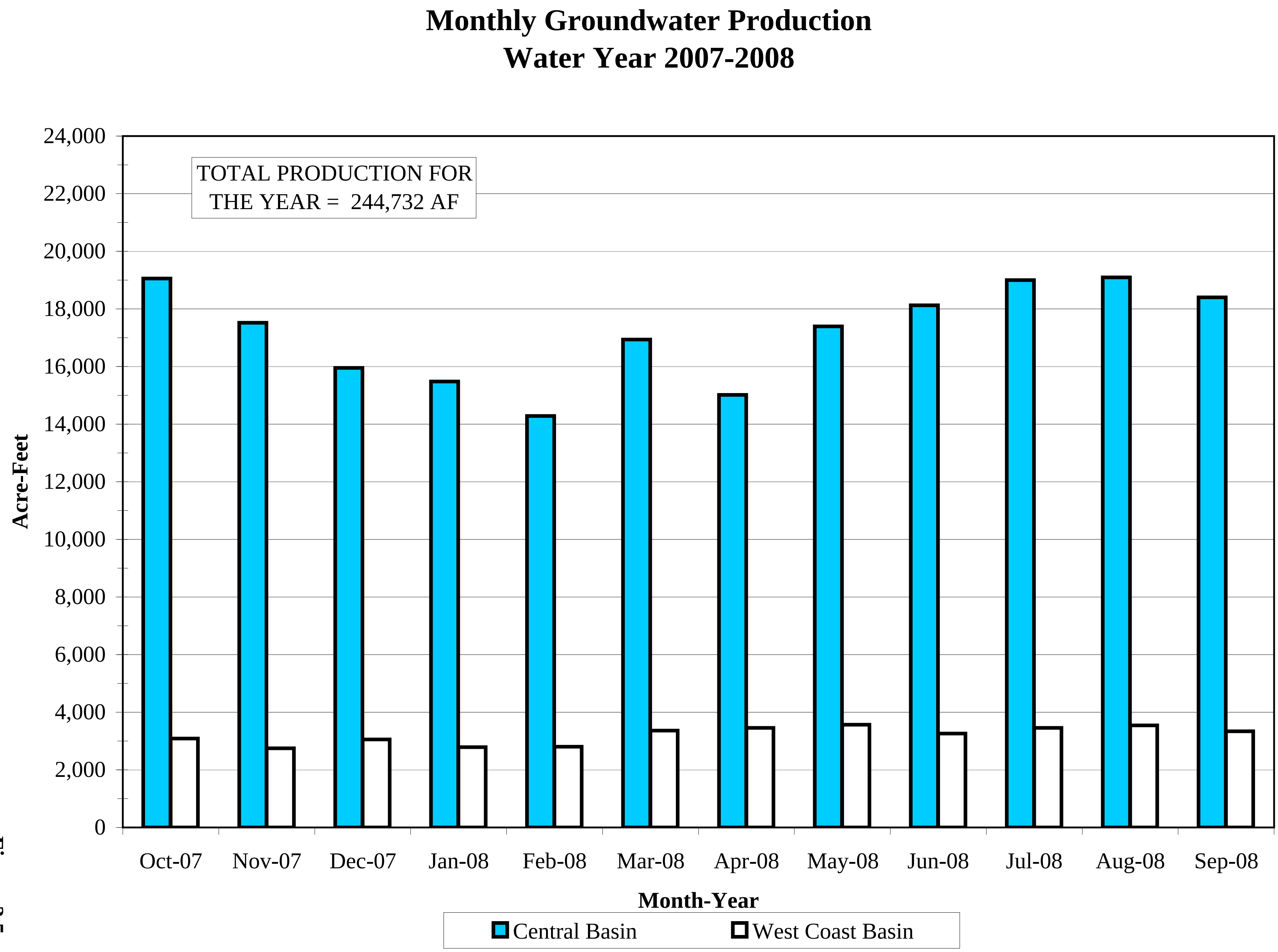


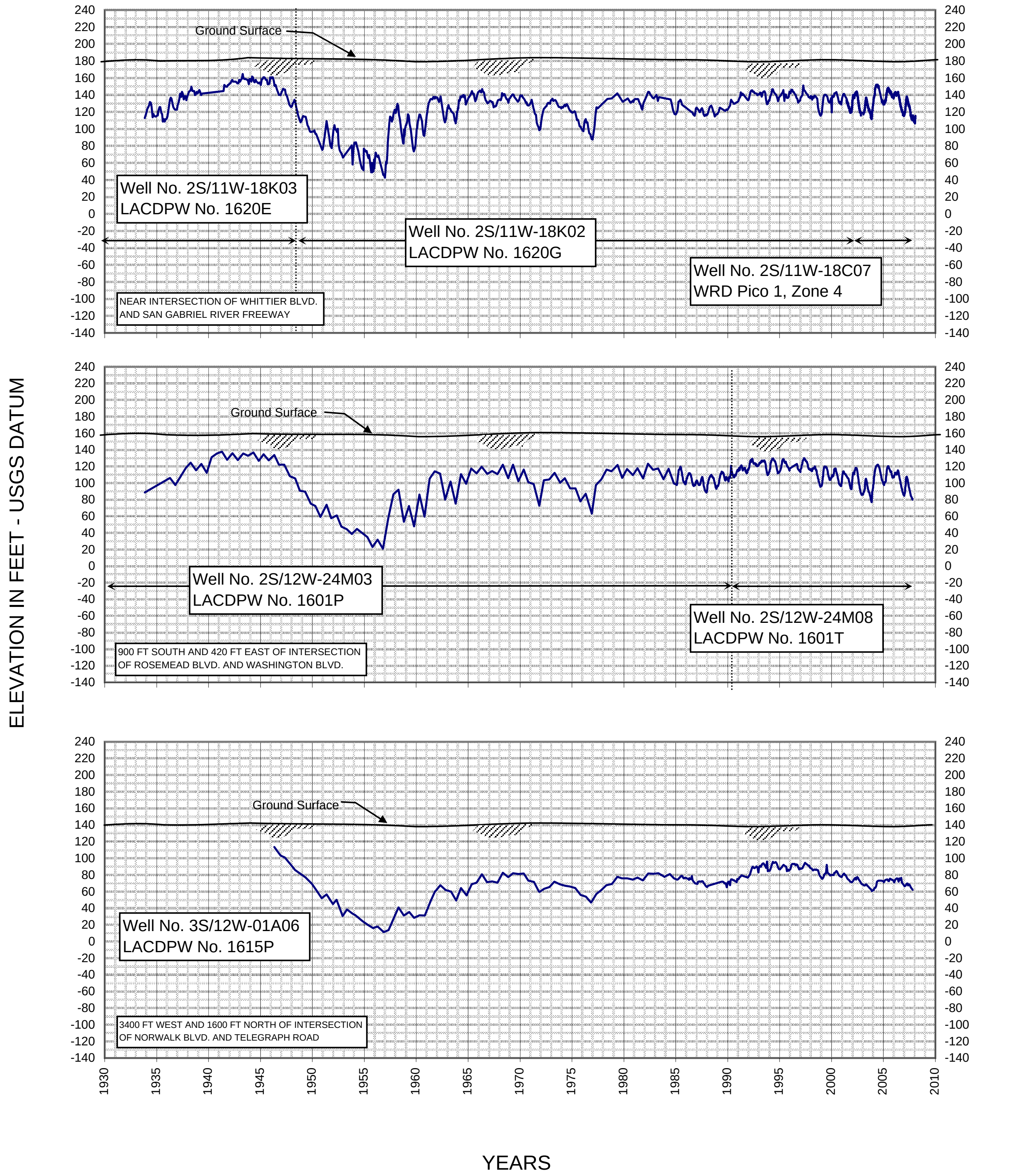
FIGURE 3.4

CHANGES IN GROUNDWATER LEVELS SPRING 2008 TO FALL 2008



Monthly Groundwater Production
Water Year 2007-2008
TOTAL PRODUCTION FOR THE YEAR = 244,732 AF
Acre-Feet
24,000
22,000
20,000
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
Oct-07
Nov-07
Dec-07
Jan-08
Feb-08
Mar-08
Apr-08
May-08
Jun-08
Jul-08
Aug-08
Sep-08
Month-Year
Central Basin
West Coast Basin

Figure 3.5

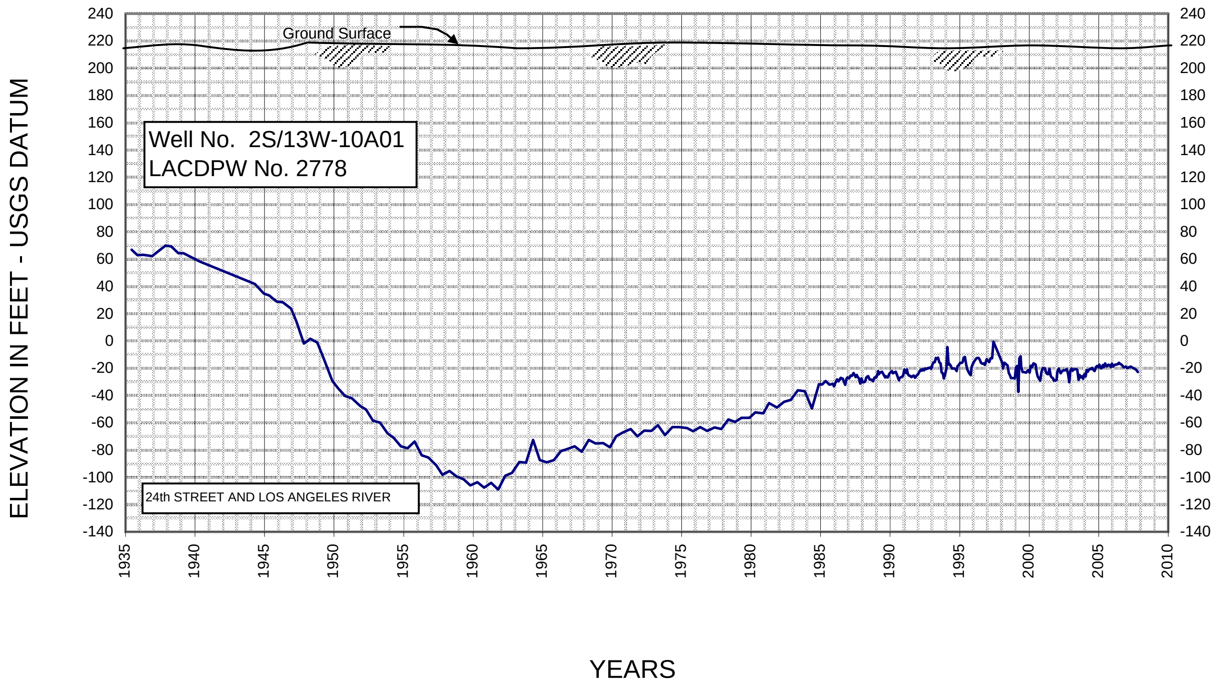


See Figure 3.2 for well locations

FLUCTUATIONS OF WATER LEVEL AT WELLS

MONTEBELLO FOREBAY

Figure 3.6

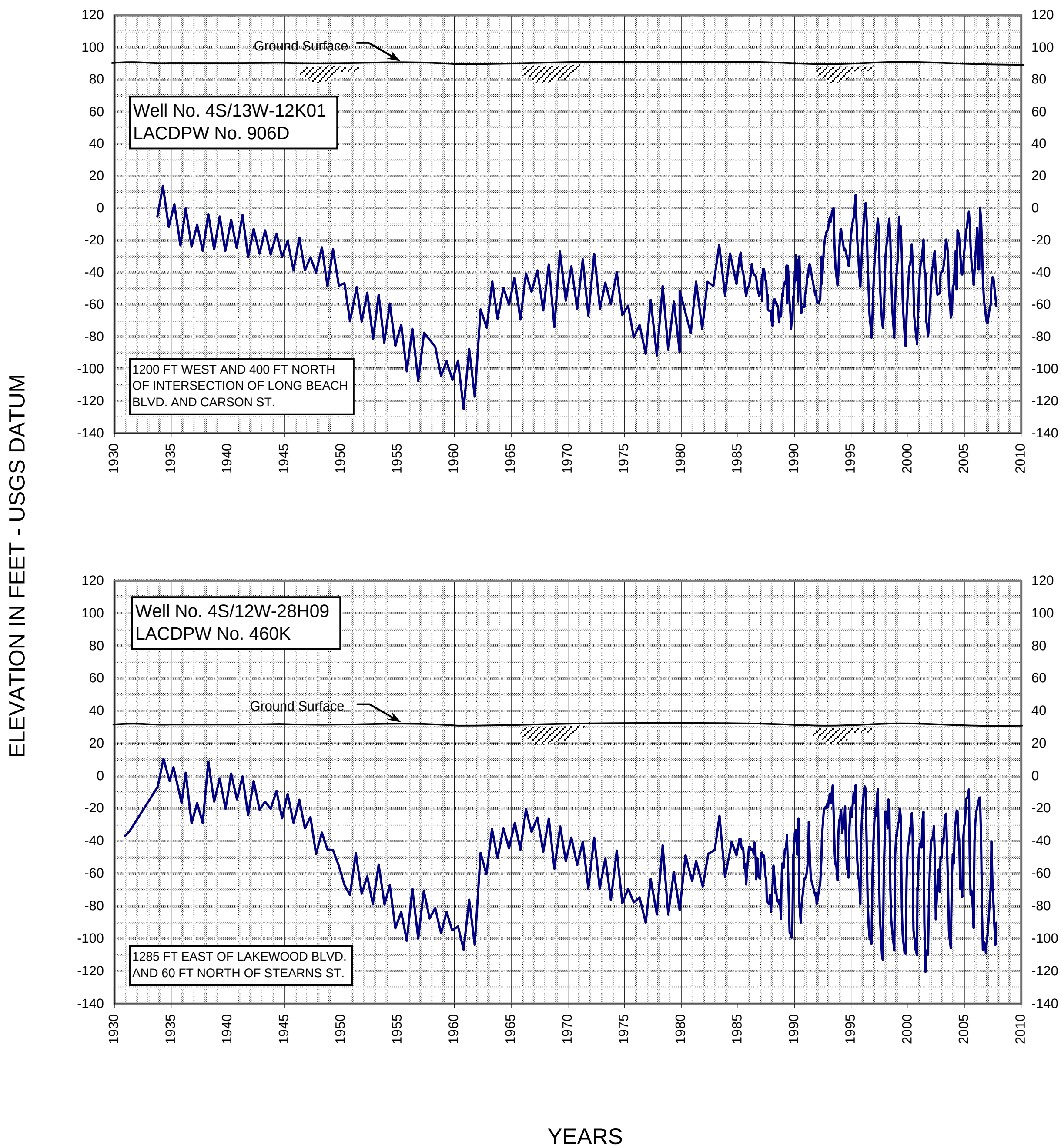


See Figure 3.2 for well location

FLUCTUATIONS OF WATER LEVEL AT WELLS

LOS ANGELES FOREBAY

Figure 3.7

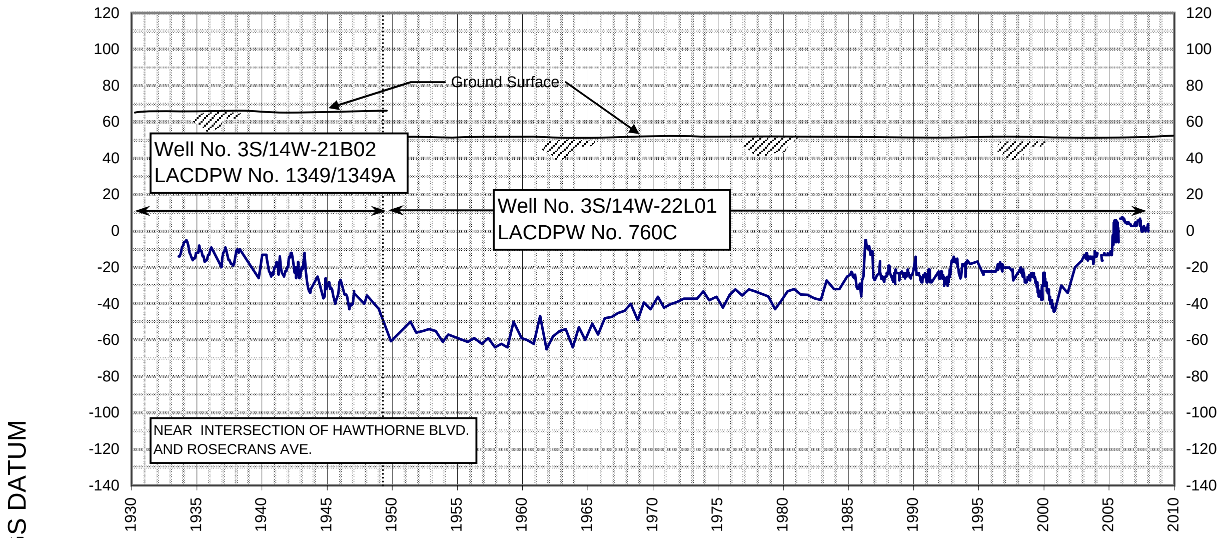


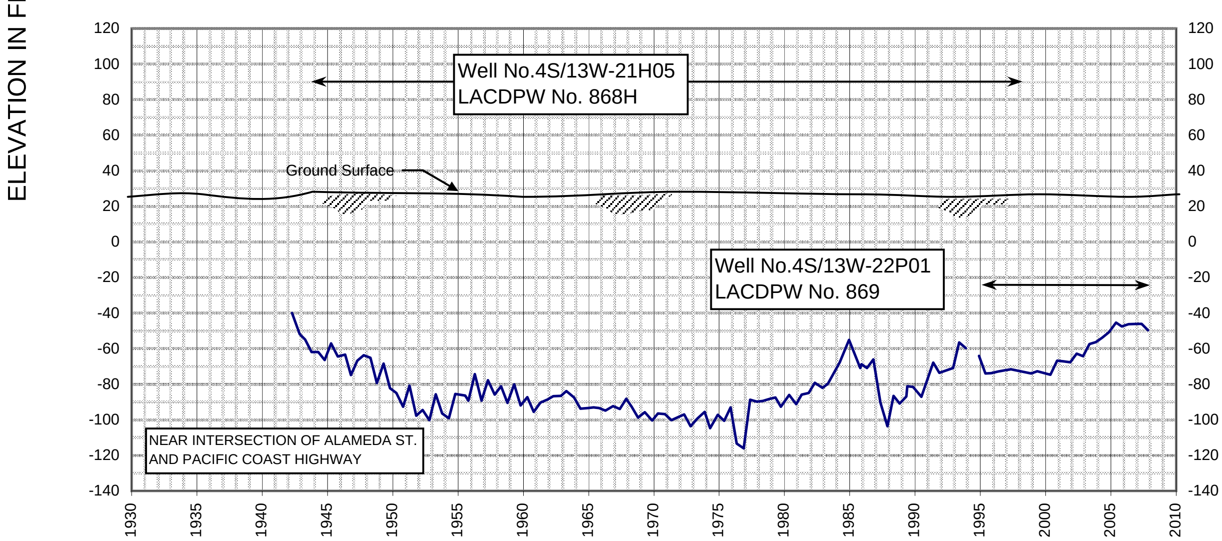
See Figure 3.2 for well locations

FLUCTUATIONS OF WATER LEVEL AT WELLS

CENTRAL BASIN PRESSURE AREA

Figure 3.8



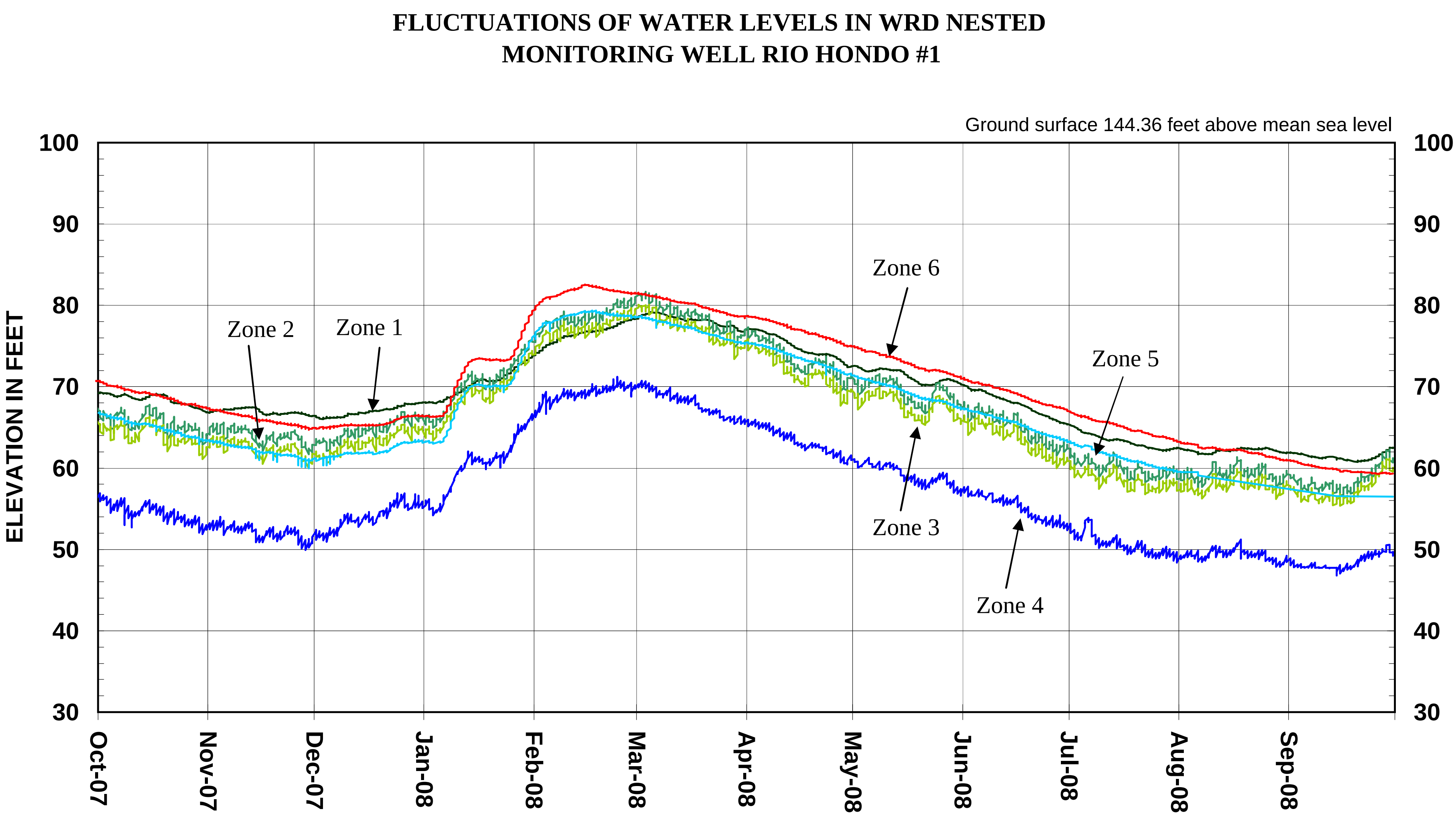


See Figure 3.2 for well locations

FLUCTUATIONS OF WATER LEVEL AT WELLS

WEST BASIN

Figure 3.9


FLUCTUATIONS OF WATER LEVELS IN WRD NESTED
MONITORING WELL RIO HONDO #1
Ground surface 144.36 feet above mean sea level
ELEVATION IN FEET
100
90
80
70
60
50
40
30
Zone 1
Zone 2
Zone 3
Zone 4
Zone 5
Zone 6
Oct-07
Nov-07
Dec-07
Jan-08
Feb-08
Mar-08
Apr-08
May-08
Jun-08
Jul-08
Aug-08
Sep-08
Zone 1 (1110' - 1130', Sunnyside)
Zone 2 (910' - 930', Sunnyside)
Zone 3 (710' - 730', Sunnyside)
Zone 4 (430' - 450', Silverado)
Zone 5 (280' - 300', Lynwood)
Zone 6 (140' - 160', Gardena)

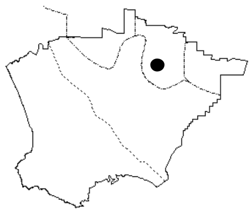


Figure 3.10

FLUCTUATIONS OF WATER LEVELS IN WRD NESTED MONITORING WELL HUNTINGTON PARK #1

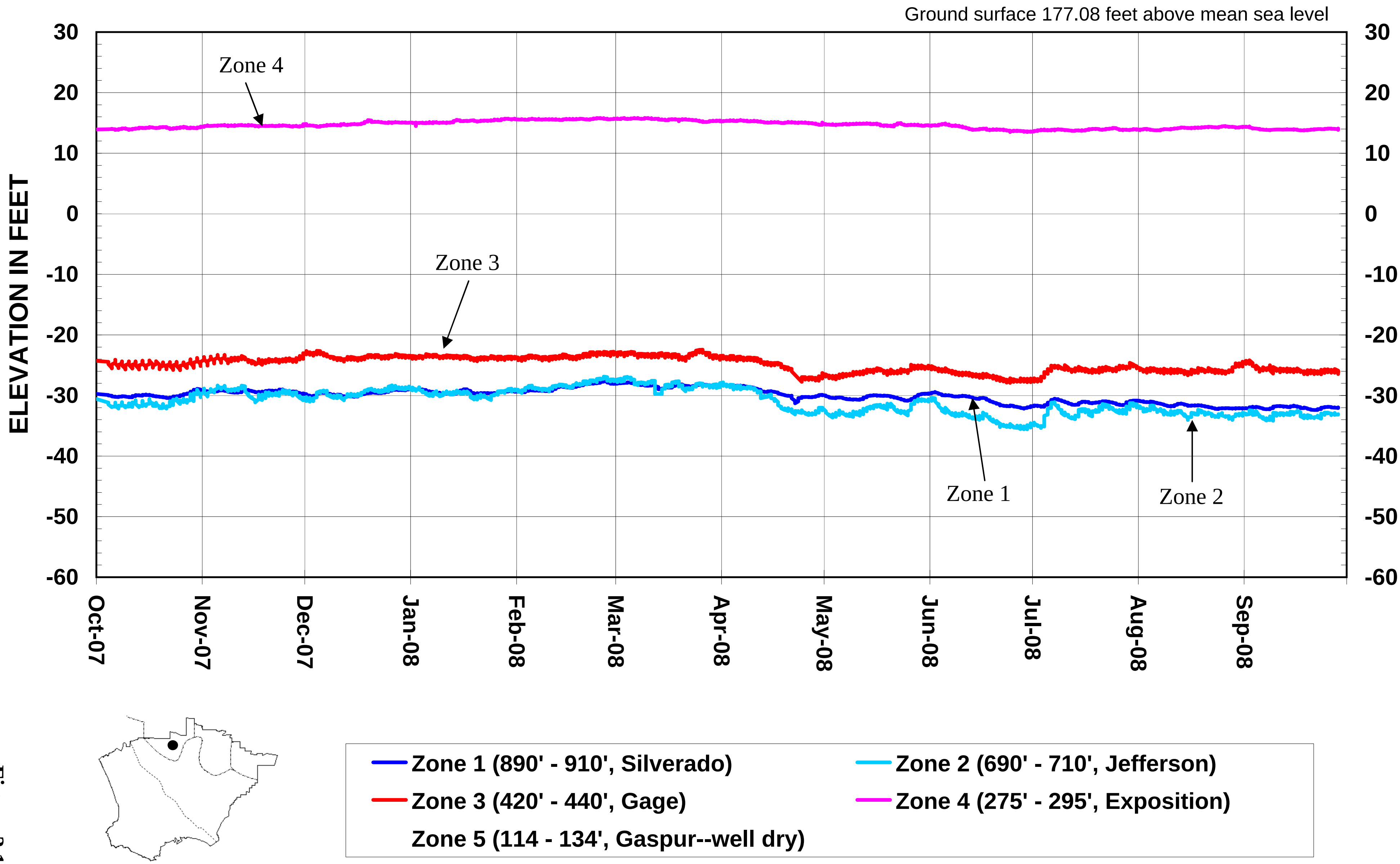


Figure 3.11

FLUCTUATIONS OF WATER LEVELS IN WRD NESTED MONITORING WELL LONG BEACH #1

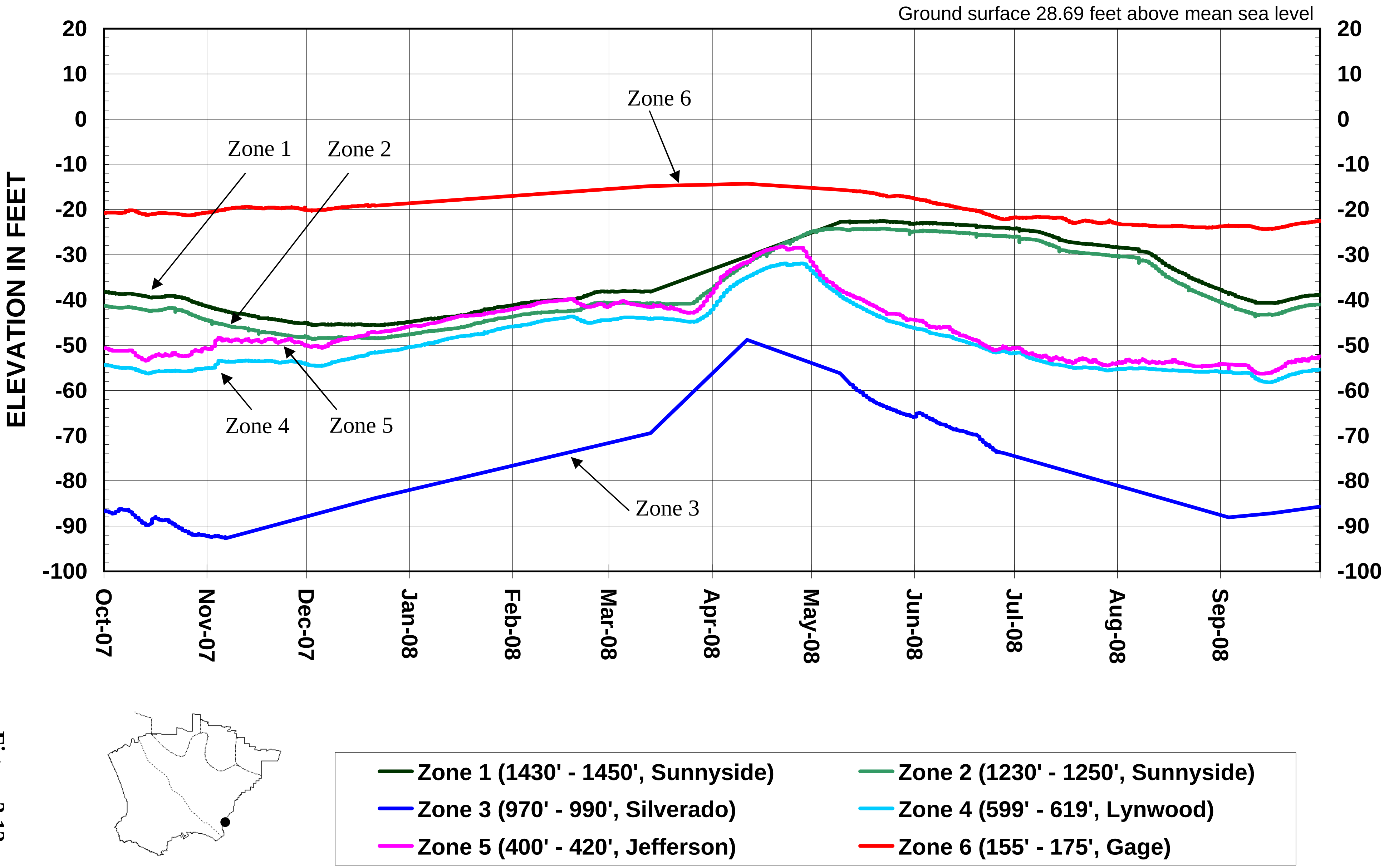
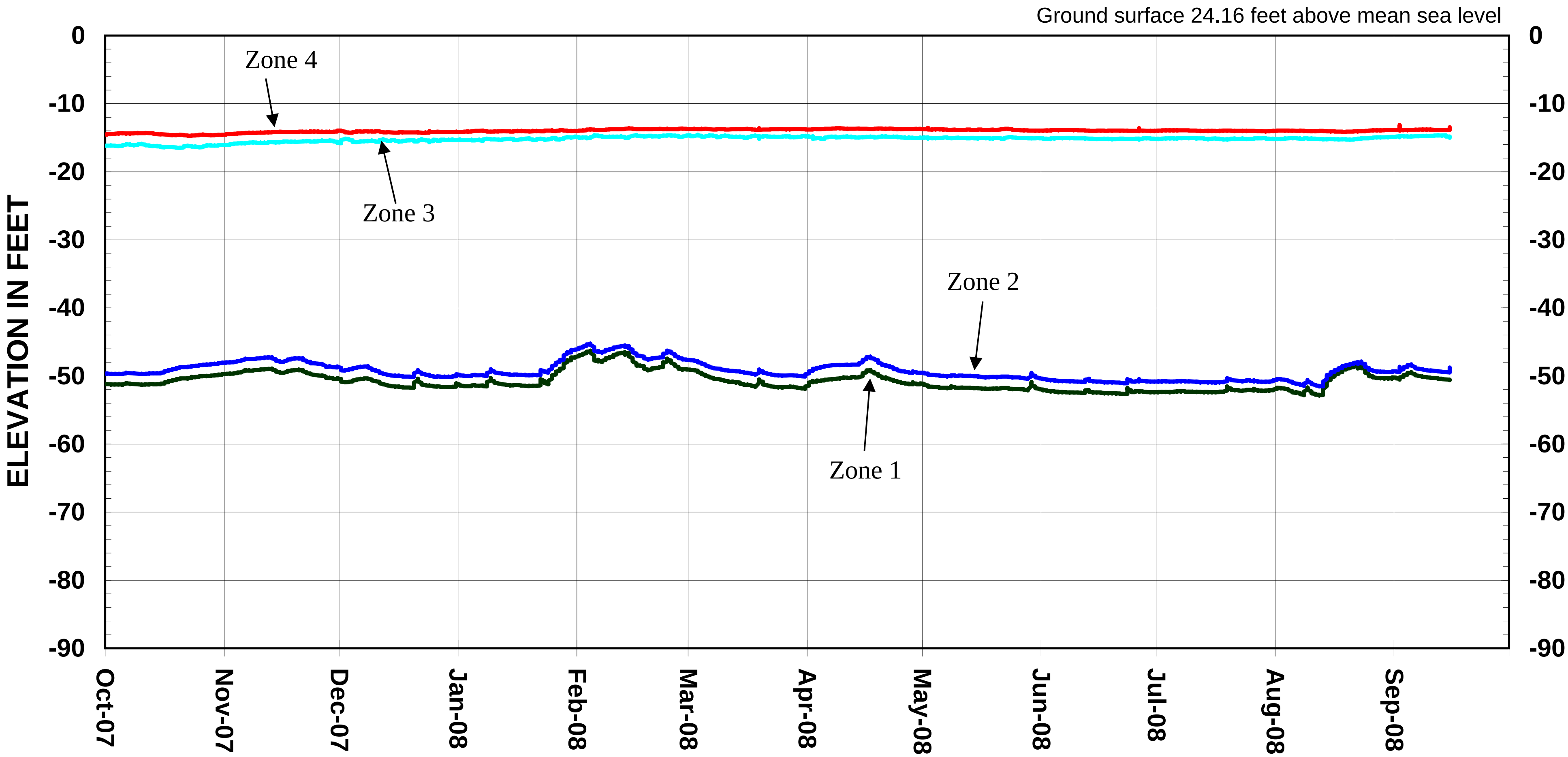


Figure 3.12

FLUCTUATIONS OF WATER LEVELS IN WRD NESTED MONITORING WELL CARSON #1



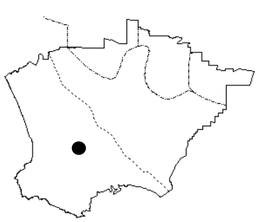


Figure 3.13

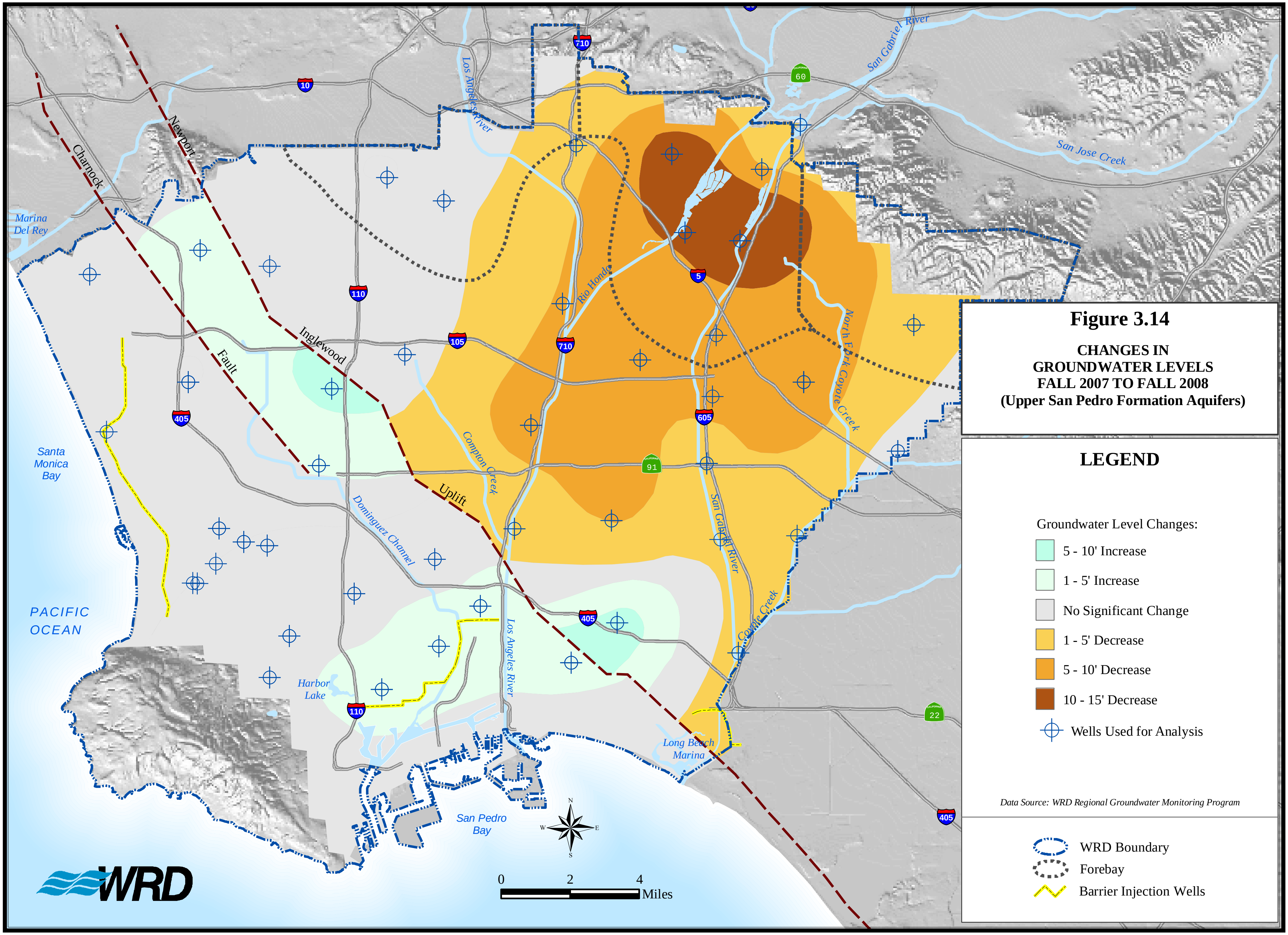


Figure 3.14
CHANGES IN GROUNDWATER LEVELS FALL 2007 TO FALL 2008 (Upper San Pedro Formation Aquifers)
LEGEND
Groundwater Level Changes:
5 - 10' Increase
1 - 5' Increase
No Significant Change
1 - 5' Decrease
5 - 10' Decrease
10 - 15' Decrease
Wells Used for Analysis
Data Source: WRD Regional Groundwater Monitoring Program
WRD Boundary
Forebay
Barrier Injection Wells
0 2 4 Miles
PACIFIC OCEAN
Santa Monica Bay
San Pedro Bay
Marina Del Rey
Harbor Lake
Long Beach Marina
Charnock
Newport
Inglewood
Fault
Uplift
Los Angeles River
San Gabriel River
San Jose Creek
Rio Hondo
Compton Creek
Dominguez Channel
North Fork Coyote Creek
Coyote Creek
WRD

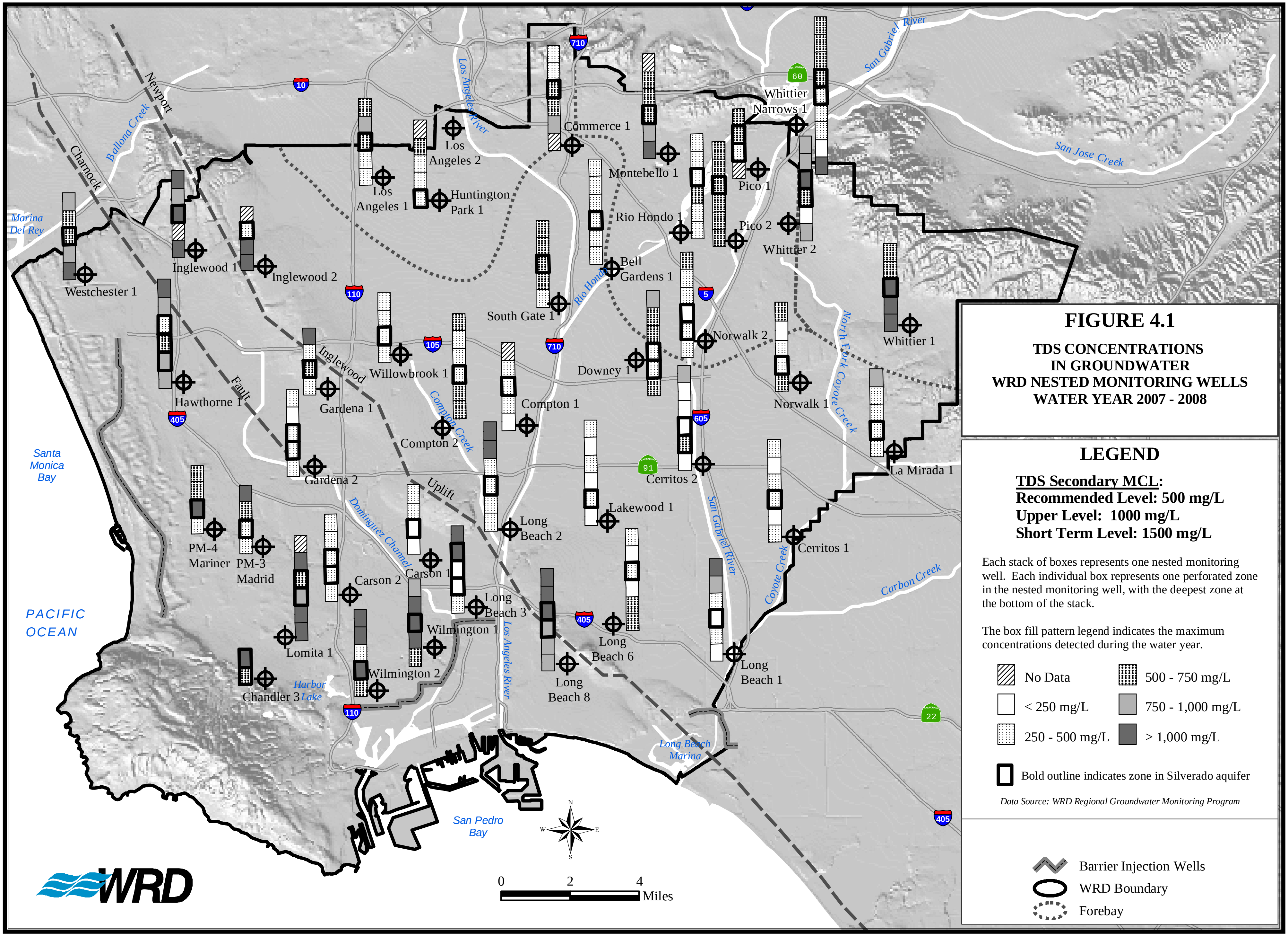


FIGURE 4.1
TDS CONCENTRATIONS
IN GROUNDWATER
WRD NESTED MONITORING WELLS
WATER YEAR 2007 - 2008
LEGEND
TDS Secondary MCL:
Recommended Level: 500 mg/L
Upper Level: 1000 mg/L
Short Term Level: 1500 mg/L
Each stack of boxes represents one nested monitoring well. Each individual box represents one perforated zone in the nested monitoring well, with the deepest zone at the bottom of the stack.
The box fill pattern legend indicates the maximum concentrations detected during the water year.
No Data
500 - 750 mg/L
< 250 mg/L
750 - 1,000 mg/L
250 - 500 mg/L
> 1,000 mg/L
Bold outline indicates zone in Silverado aquifer
Data Source: WRD Regional Groundwater Monitoring Program
Barrier Injection Wells
WRD Boundary
Forebay
0
2
4
Miles
WRD
Santa Monica Bay
PACIFIC OCEAN
San Pedro Bay
Marina Del Rey
Harbor Lake
Long Beach Marina
Ballona Creek
Los Angeles River
San Gabriel River
San Jose Creek
Rio Hondo
Compton Creek
Dominguez Channel
North Fork Coyote Creek
Coyote Creek
Carbon Creek
Newport
Inglewood
Fault
Charnock
Uplift
Westchester 1
Inglewood 1
Inglewood 2
Hawthorne 1
Gardena 1
Gardena 2
Los Angeles 1
Los Angeles 2
Huntington Park 1
Commerce 1
Montebello 1
Rio Hondo 1
Pico 1
Pico 2
Whittier Narrows 1
Whittier 2
Whittier 1
Bell Gardens 1
South Gate 1
Willowbrook 1
Compton 1
Compton 2
Downey 1
Norwalk 2
Norwalk 1
La Mirada 1
Cerritos 2
Cerritos 1
Lakewood 1
Long Beach 1
Long Beach 2
Long Beach 3
Long Beach 6
Long Beach 8
PM-4 Mariner
PM-3 Madrid
Carson 1
Carson 2
Lomita 1
Chandler 3
Wilmington 1
Wilmington 2
10
110
105
710
5
605
405
91
60
22

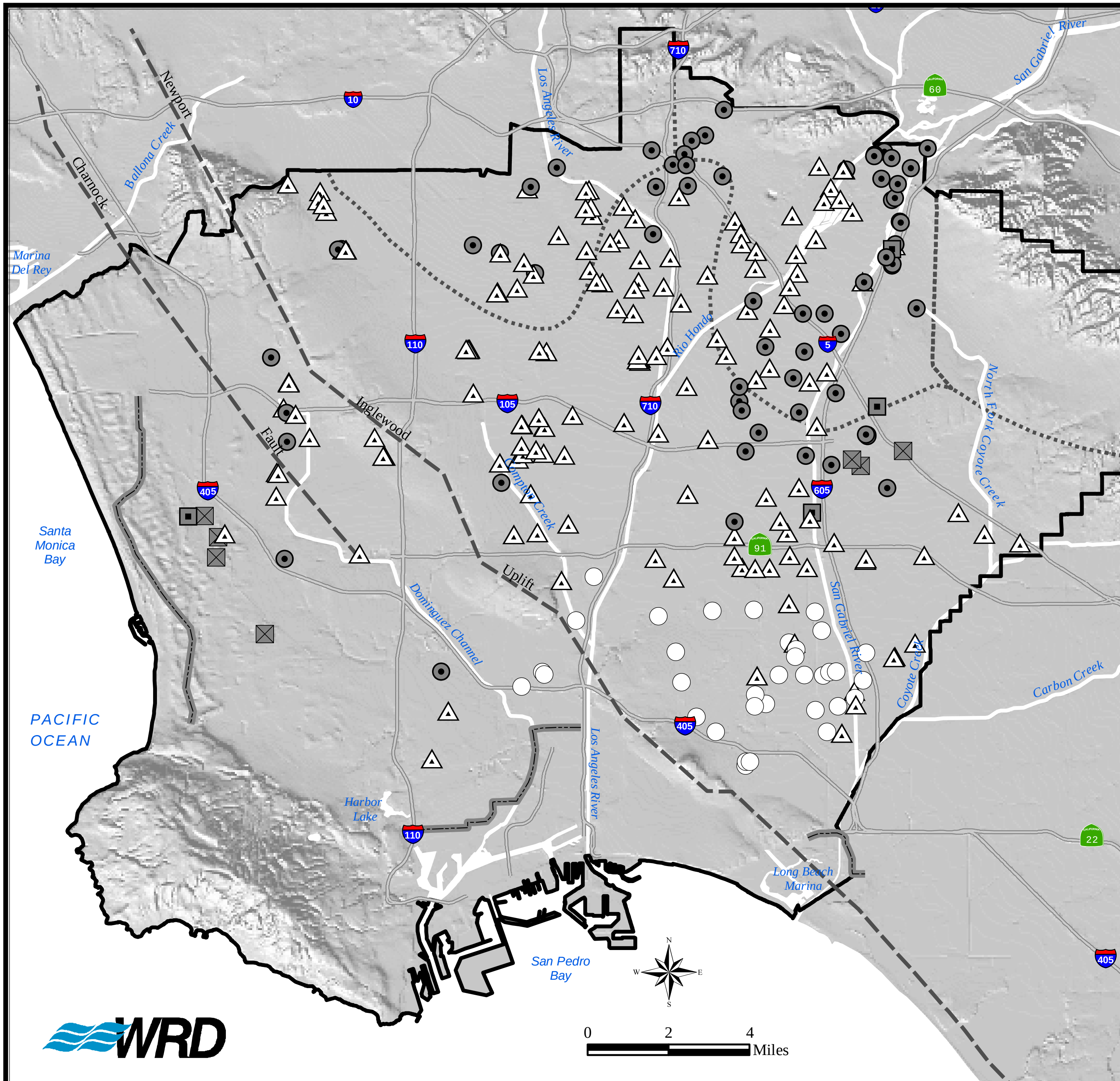


FIGURE 4.2

TDS CONCENTRATIONS IN GROUNDWATER FROM PRODUCTION WELLS

LEGEND

TDS Secondary MCL:
Recommended Level: 500 mg/L
Upper Level: 1000 mg/L
Short Term Level: 1500 mg/L

- < 250 mg/L
- 250 - 500 mg/L
- 500 - 750 mg/L
- 750 - 1,000 mg/L
- > 1,000 mg/L

Symbol represents the maximum concentration reported from October 2005 - September 2008

Data Source: CA Department of Public Health

- Barrier Injection Wells
- WRD Boundary
- Forebay

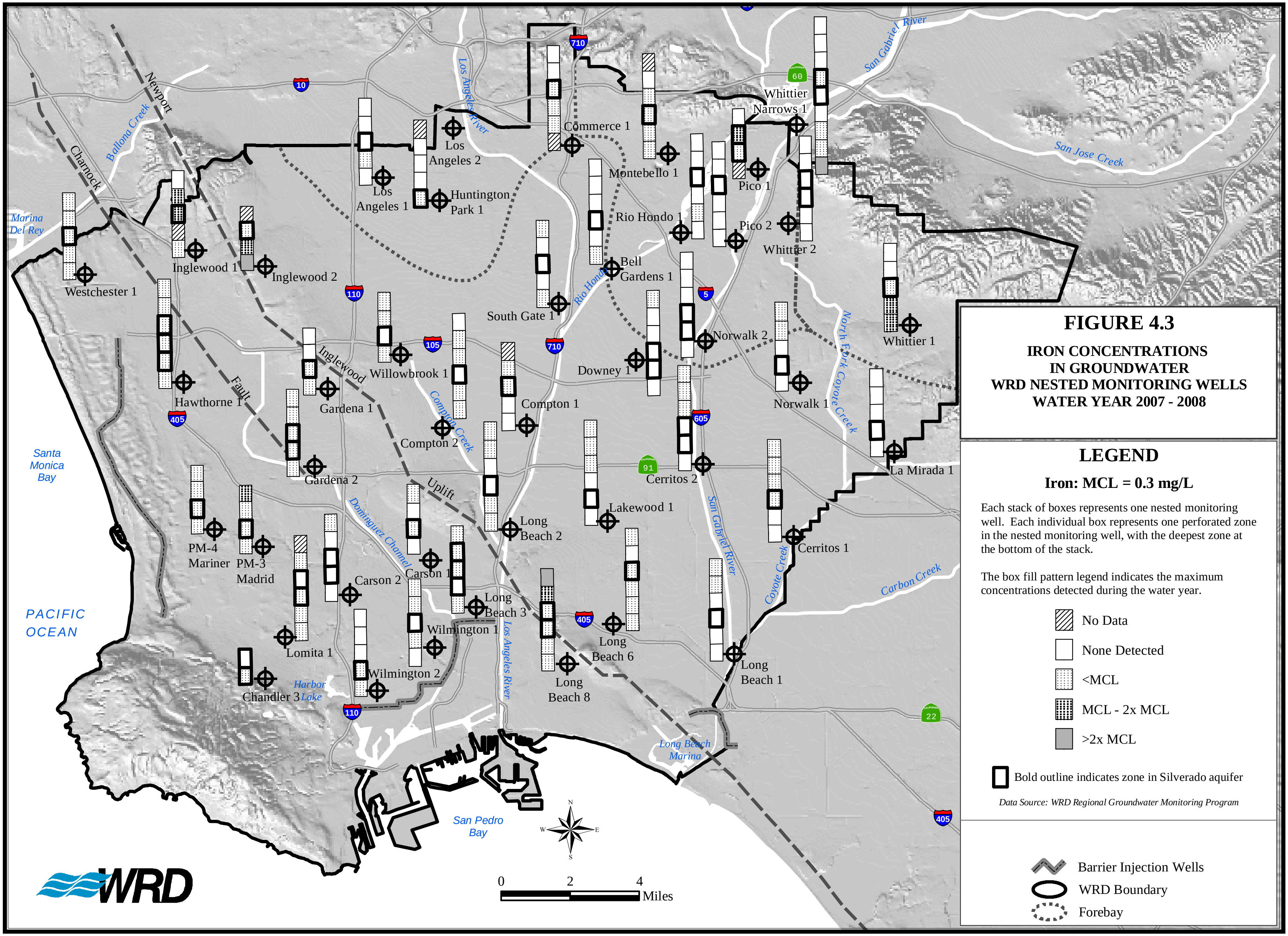


FIGURE 4.3
IRON CONCENTRATIONS
IN GROUNDWATER
WRD NESTED MONITORING WELLS
WATER YEAR 2007 - 2008
LEGEND
Iron: MCL = 0.3 mg/L
Each stack of boxes represents one nested monitoring well. Each individual box represents one perforated zone in the nested monitoring well, with the deepest zone at the bottom of the stack.
The box fill pattern legend indicates the maximum concentrations detected during the water year.
No Data
None Detected
<MCL
MCL - 2x MCL
>2x MCL
Bold outline indicates zone in Silverado aquifer
Data Source: WRD Regional Groundwater Monitoring Program
Barrier Injection Wells
WRD Boundary
Forebay
WRD
0
2
4
Miles
N
S
E
W
PACIFIC
OCEAN
Santa
Monica
Bay
San Pedro
Bay
Marina
Del Rey
Harbor
Lake
Long Beach
Marina
Ballona Creek
Los Angeles River
San Gabriel River
San Jose Creek
Rio Hondo
Compton Creek
Dominguez Channel
North Fork Coyote Creek
Coyote Creek
Carbon Creek
Charnock
Newport
Inglewood
Fault
Uplift
10
60
710
110
105
5
605
405
91
22
Westchester 1
Inglewood 1
Inglewood 2
Los
Angeles 1
Los
Angeles 2
Huntington
Park 1
Commerce 1
Montebello 1
Whittier
Narrows 1
Pico 1
Pico 2
Whittier 2
Rio Hondo 1
Bell
Gardens 1
South Gate 1
Hawthorne 1
Gardena 1
Willowbrook 1
Compton 2
Compton 1
Downey 1
Norwalk 2
Norwalk 1
Whittier 1
La Mirada 1
Gardena 2
Cerritos 2
Lakewood 1
Cerritos 1
PM-4
Mariner
PM-3
Madrid
Carson 2
Carson 1
Long
Beach 2
Long
Beach 3
Wilmington 1
Wilmington 2
Lomita 1
Chandler 3
Long
Beach 6
Long
Beach 8
Long
Beach 1

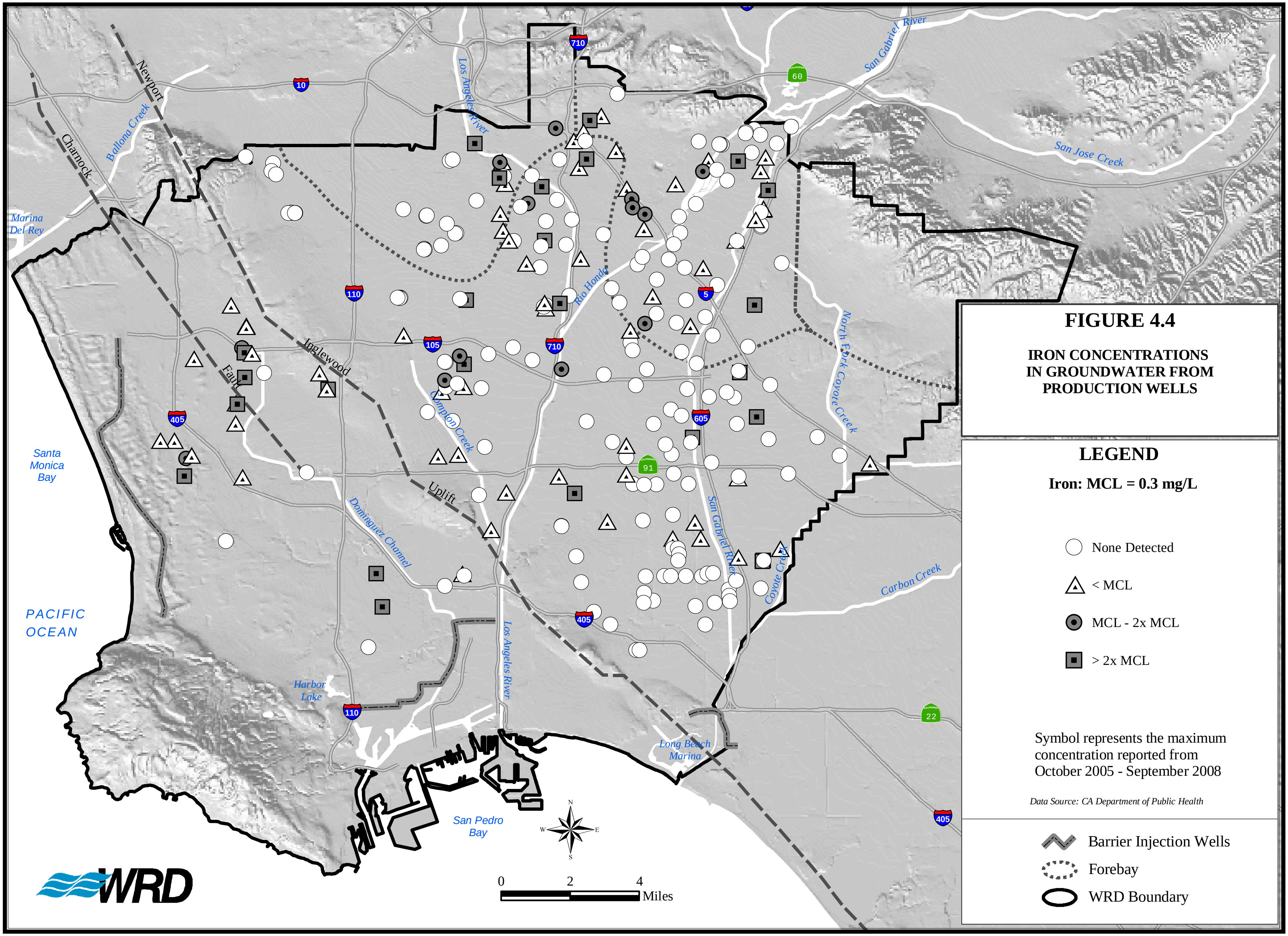


FIGURE 4.4

IRON CONCENTRATIONS IN GROUNDWATER FROM PRODUCTION WELLS

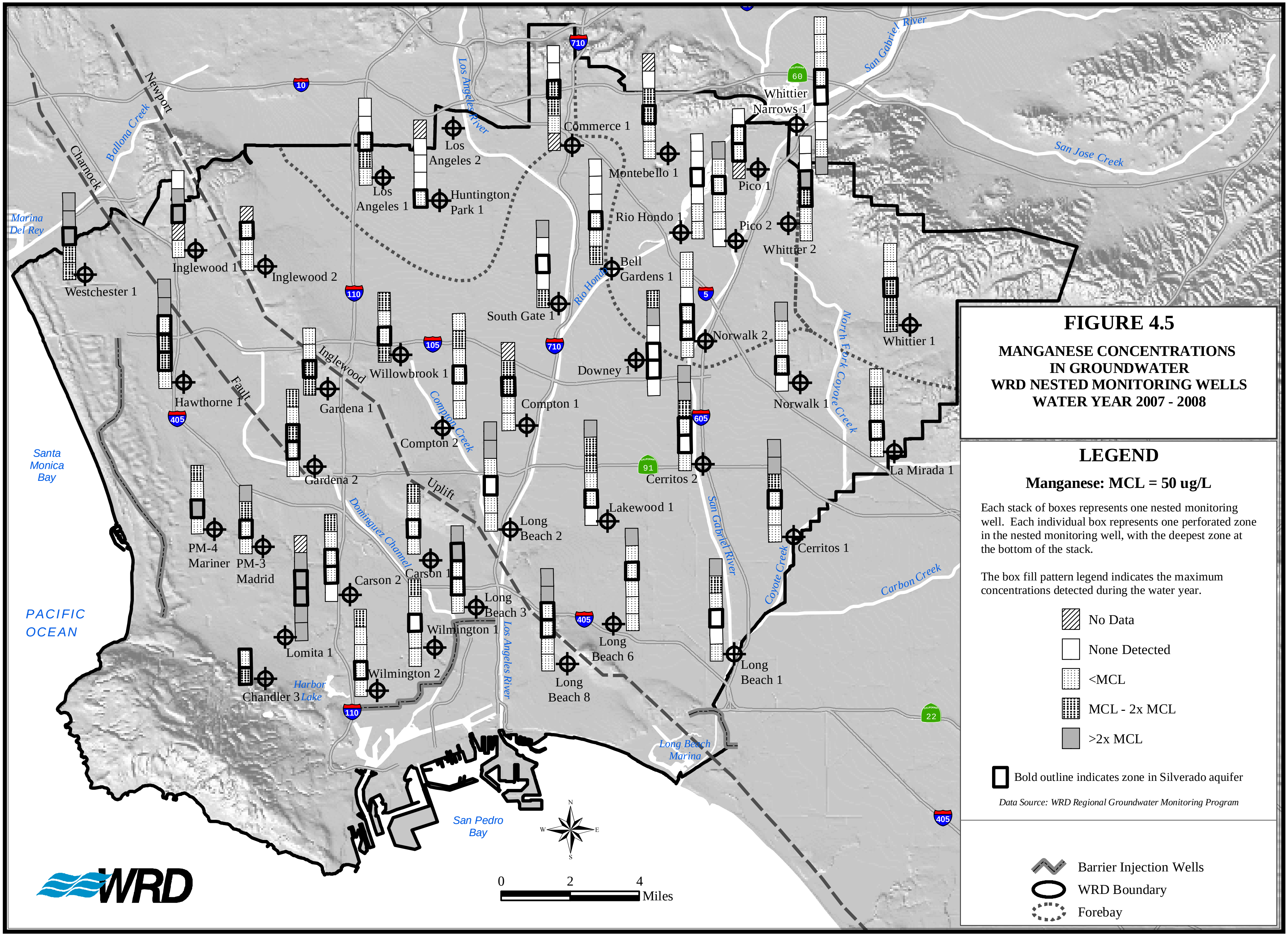


FIGURE 4.5
MANGANESE CONCENTRATIONS
IN GROUNDWATER
WRD NESTED MONITORING WELLS
WATER YEAR 2007 - 2008
LEGEND
Manganese: MCL = 50 ug/L
Each stack of boxes represents one nested monitoring well. Each individual box represents one perforated zone in the nested monitoring well, with the deepest zone at the bottom of the stack.
The box fill pattern legend indicates the maximum concentrations detected during the water year.
No Data
None Detected
<MCL
MCL - 2x MCL
>2x MCL
Bold outline indicates zone in Silverado aquifer
Data Source: WRD Regional Groundwater Monitoring Program
Barrier Injection Wells
WRD Boundary
Forebay
Westchester 1
Inglewood 1
Inglewood 2
Los Angeles 1
Los Angeles 2
Huntington Park 1
Commerce 1
Montebello 1
Whittier Narrows 1
Pico 1
Pico 2
Whittier 2
Whittier 1
Rio Hondo 1
Bell Gardens 1
South Gate 1
Hawthorne 1
Gardena 1
Gardena 2
Willowbrook 1
Compton 1
Compton 2
Downey 1
Norwalk 1
Norwalk 2
La Mirada 1
Cerritos 1
Cerritos 2
Lakewood 1
Long Beach 1
Long Beach 2
Long Beach 3
Long Beach 6
Long Beach 8
PM-4 Mariner
PM-3 Madrid
Carson 1
Carson 2
Lomita 1
Chandler 3
Wilmington 1
Wilmington 2
Marina Del Rey
Santa Monica Bay
PACIFIC OCEAN
San Pedro Bay
Harbor Lake
Long Beach Marina
Ballona Creek
Los Angeles River
San Gabriel River
San Jose Creek
Rio Hondo
Compton Creek
Dominguez Channel
North Fork Coyote Creek
Coyote Creek
Carbon Creek
Charnock
Newport
Inglewood
Fault
Uplift
10
60
110
105
710
5
605
91
405
22
0
2
4
Miles
N
S
E
W
WRD

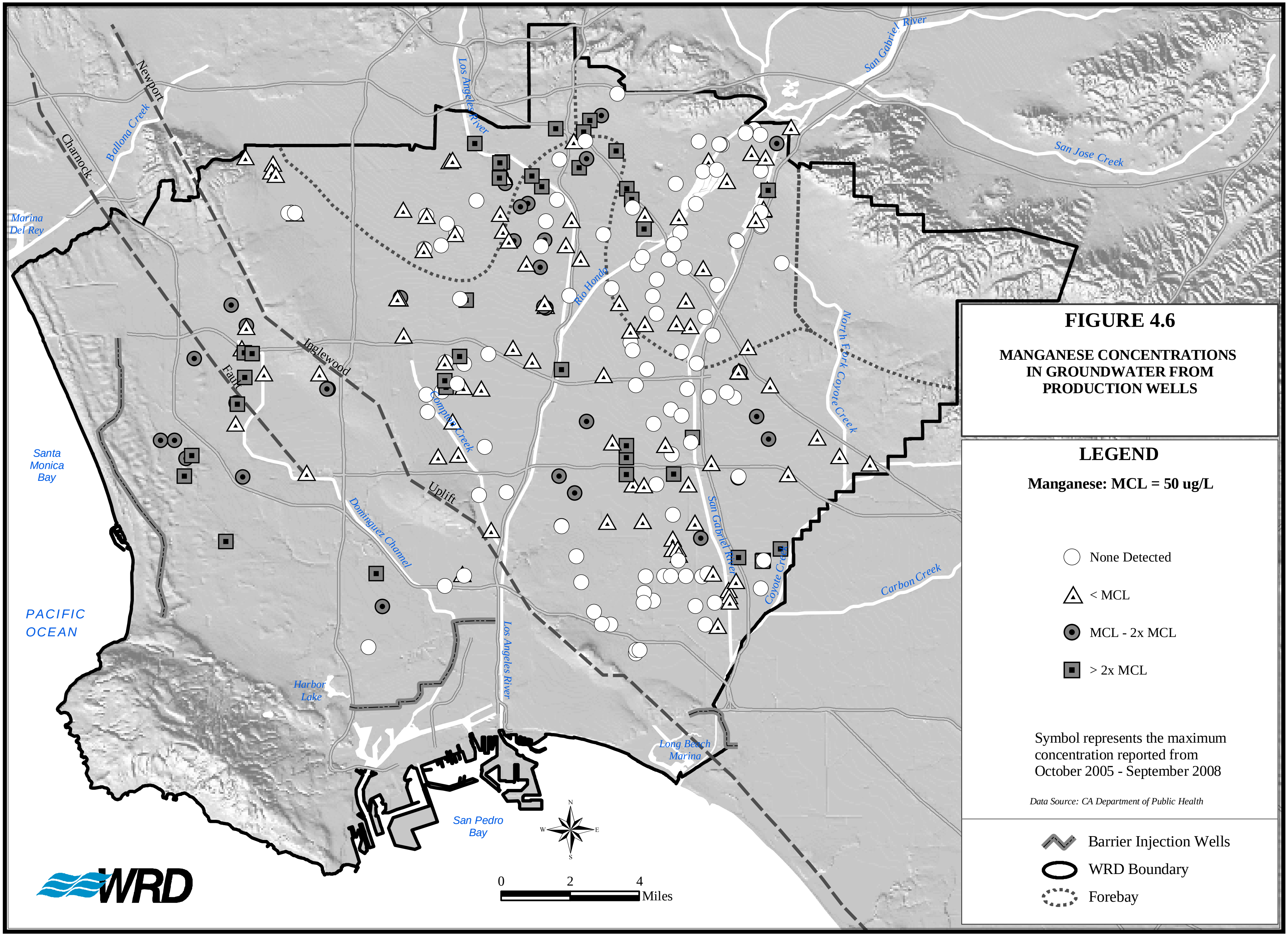


FIGURE 4.6

MANGANESE CONCENTRATIONS IN GROUNDWATER FROM PRODUCTION WELLS

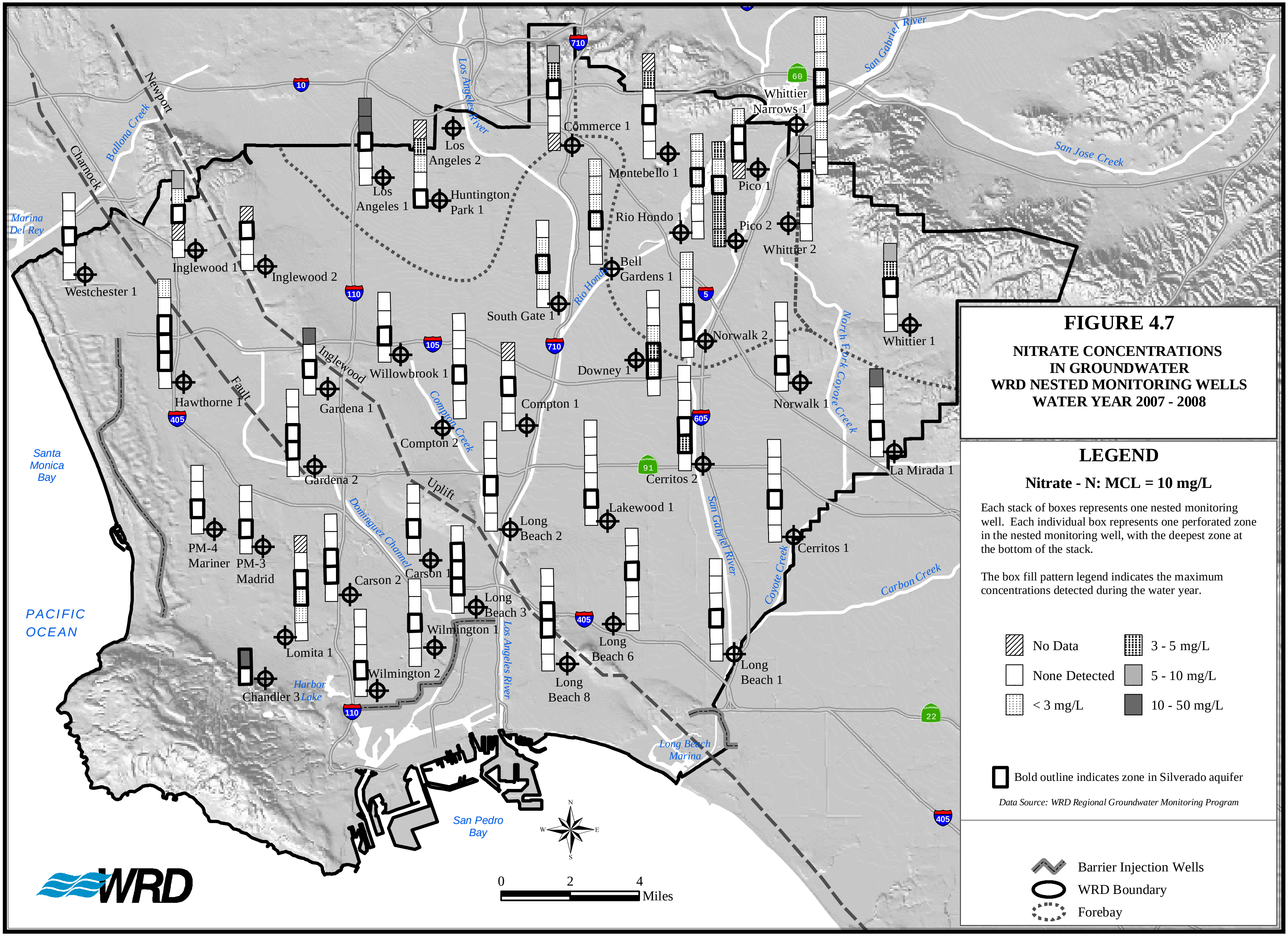


FIGURE 4.7
NITRATE CONCENTRATIONS IN GROUNDWATER
WRD NESTED MONITORING WELLS
WATER YEAR 2007 - 2008
LEGEND
Nitrate - N: MCL = 10 mg/L
Each stack of boxes represents one nested monitoring well. Each individual box represents one perforated zone in the nested monitoring well, with the deepest zone at the bottom of the stack.
The box fill pattern legend indicates the maximum concentrations detected during the water year.
No Data
3 - 5 mg/L
None Detected
5 - 10 mg/L
< 3 mg/L
10 - 50 mg/L
Bold outline indicates zone in Silverado aquifer
Data Source: WRD Regional Groundwater Monitoring Program
Barrier Injection Wells
WRD Boundary
Forebay
0
2
4
Miles
WRD
Westchester 1
Inglewood 1
Inglewood 2
Los Angeles 1
Los Angeles 2
Huntington Park 1
Commerce 1
Montebello 1
Whittier Narrows 1
Pico 1
Pico 2
Whittier 2
Whittier 1
Rio Hondo 1
Bell Gardens 1
South Gate 1
Norwalk 2
Norwalk 1
Downey 1
Hawthorne 1
Gardena 1
Willowbrook 1
Compton 1
Compton 2
Gardena 2
Cerritos 2
Cerritos 1
La Mirada 1
Lakewood 1
Long Beach 2
PM-4 Mariner
PM-3 Madrid
Carson 2
Carson 1
Long Beach 3
Wilmington 1
Wilmington 2
Lomita 1
Chandler 3
Long Beach 6
Long Beach 8
Long Beach 1
Santa Monica Bay
PACIFIC OCEAN
Marina Del Rey
Ballona Creek
Charnock
Newport
Inglewood
Fault
Uplift
Los Angeles River
Rio Hondo
San Gabriel River
San Jose Creek
North Fork Coyote Creek
Coyote Creek
Carbon Creek
Compton Creek
Dominguez Channel
Harbor Lake
Long Beach Marina
San Pedro Bay
10
60
710
110
105
5
605
405
91
22

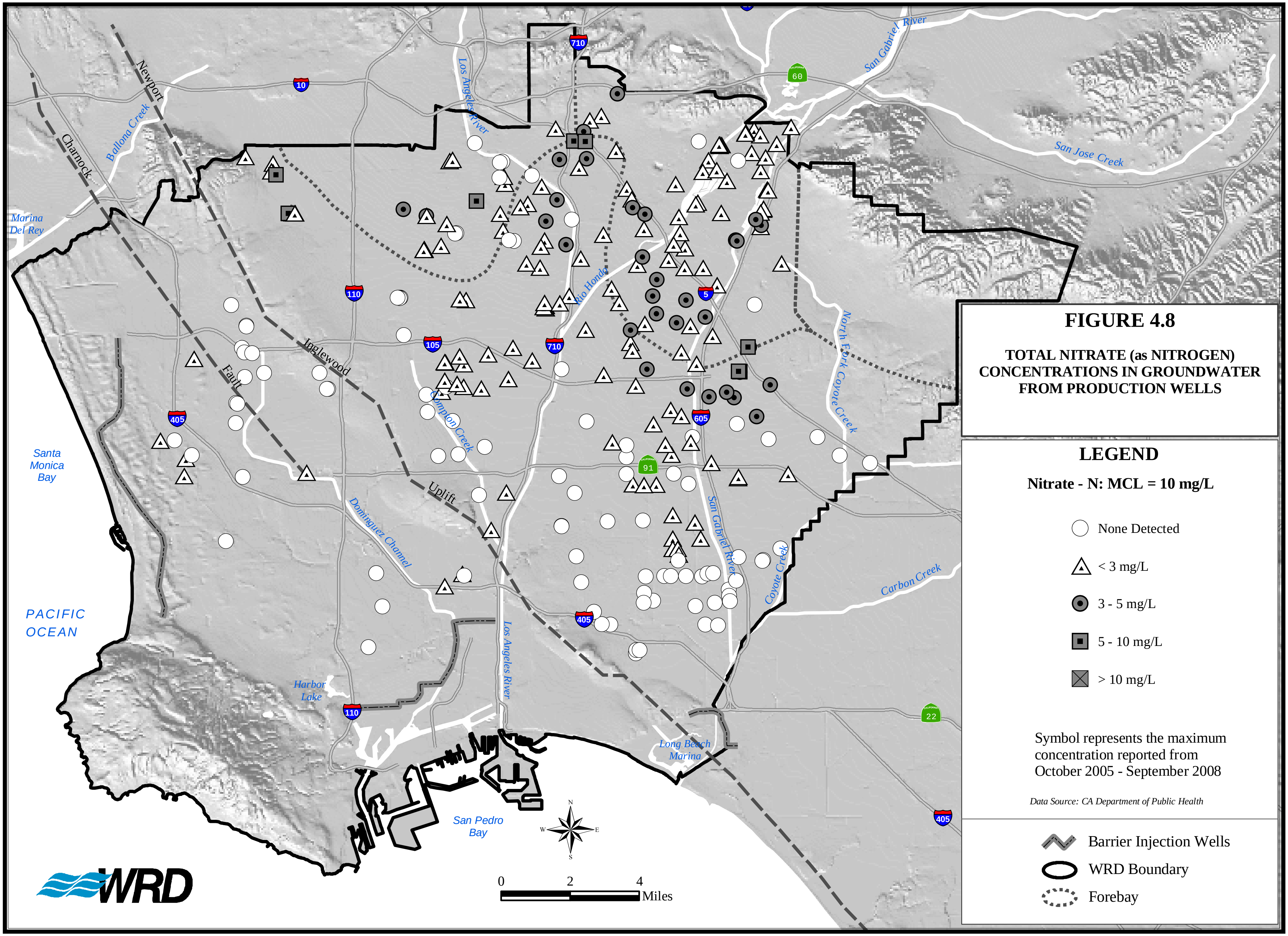


FIGURE 4.8
TOTAL NITRATE (as NITROGEN) CONCENTRATIONS IN GROUNDWATER FROM PRODUCTION WELLS
LEGEND
Nitrate - N: MCL = 10 mg/L
None Detected
< 3 mg/L
3 - 5 mg/L
5 - 10 mg/L
> 10 mg/L
Symbol represents the maximum concentration reported from October 2005 - September 2008
Data Source: CA Department of Public Health
Barrier Injection Wells
WRD Boundary
Forebay
Santa Monica Bay
PACIFIC OCEAN
Marina Del Rey
San Pedro Bay
Harbor Lake
Long Beach Marina
Newport
Inglewood
Fault
Uplift
Charnock
Ballona Creek
Los Angeles River
Rio Hondo
San Gabriel River
San Jose Creek
North Fork Coyote Creek
Coyote Creek
Carbon Creek
Compton Creek
Dominguez Channel
WRD
0
2
4
Miles

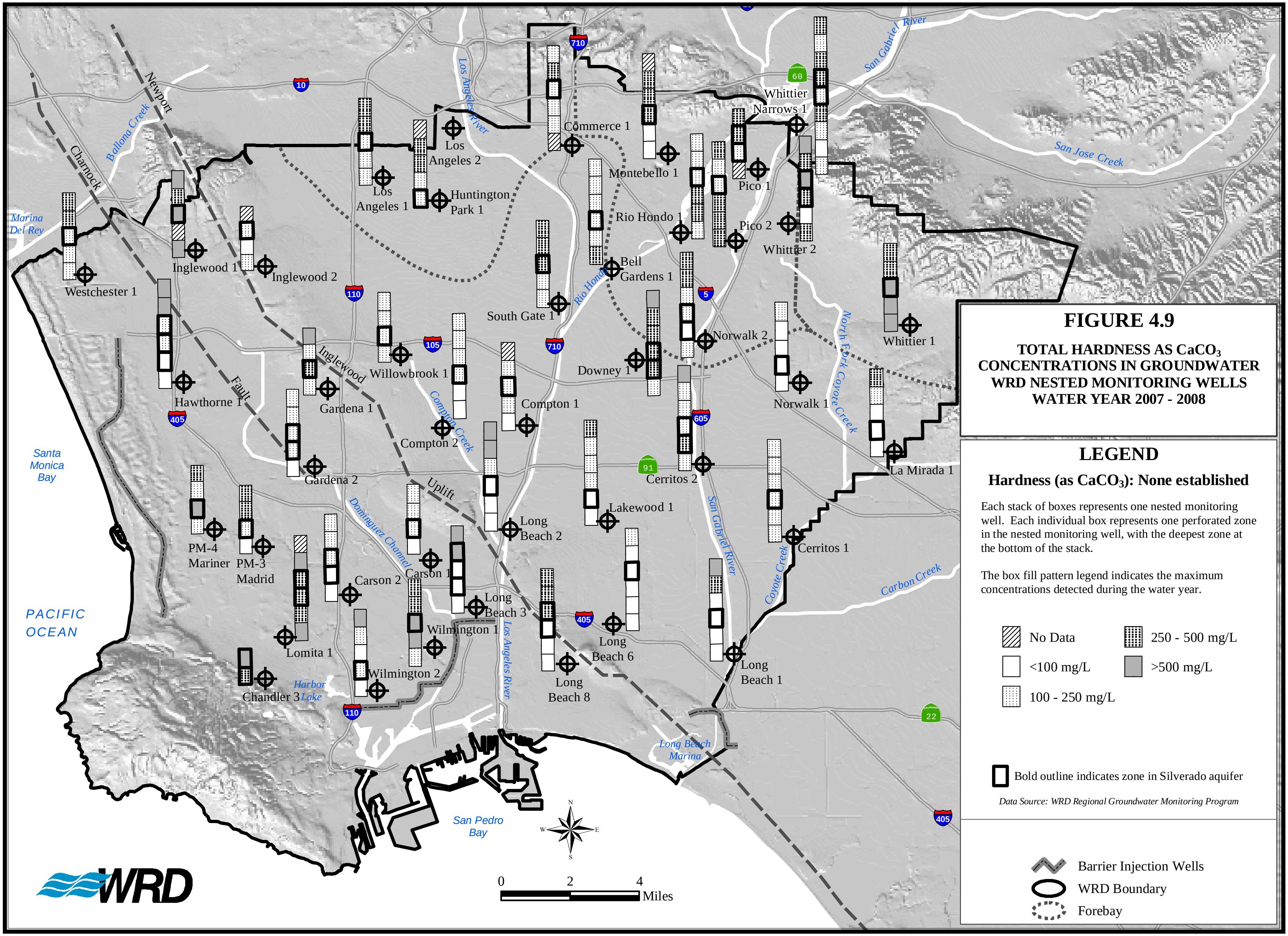


FIGURE 4.9

TOTAL HARDNESS AS $CaCO_3$ CONCENTRATIONS IN GROUNDWATER WRD NESTED MONITORING WELLS WATER YEAR 2007 - 2008

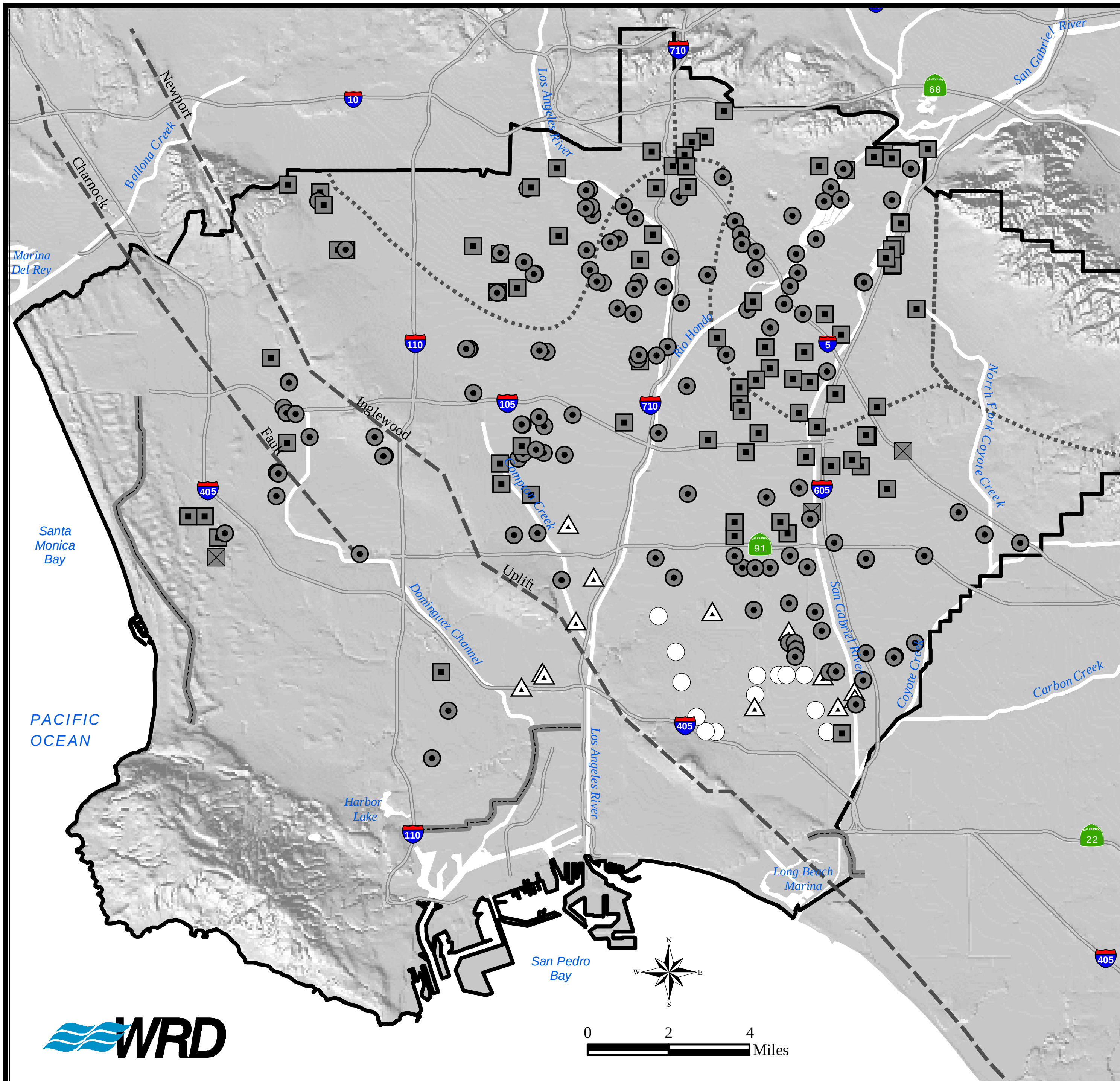


FIGURE 4.10

TOTAL HARDNESS (as $CaCO_3$) CONCENTRATIONS IN GROUNDWATER FROM PRODUCTION WELLS

LEGEND

Hardness (as $CaCO_3$): None established

- <50 mg/L
- 50 - 100 mg/L
- 100 - 250 mg/L
- 250 - 500 mg/L
- >500 mg/L

Symbol represents the maximum concentration reported from October 2005 - September 2008

Data Source: CA Department of Public Health

- Barrier Injection Wells
- WRD Boundary
- Forebay

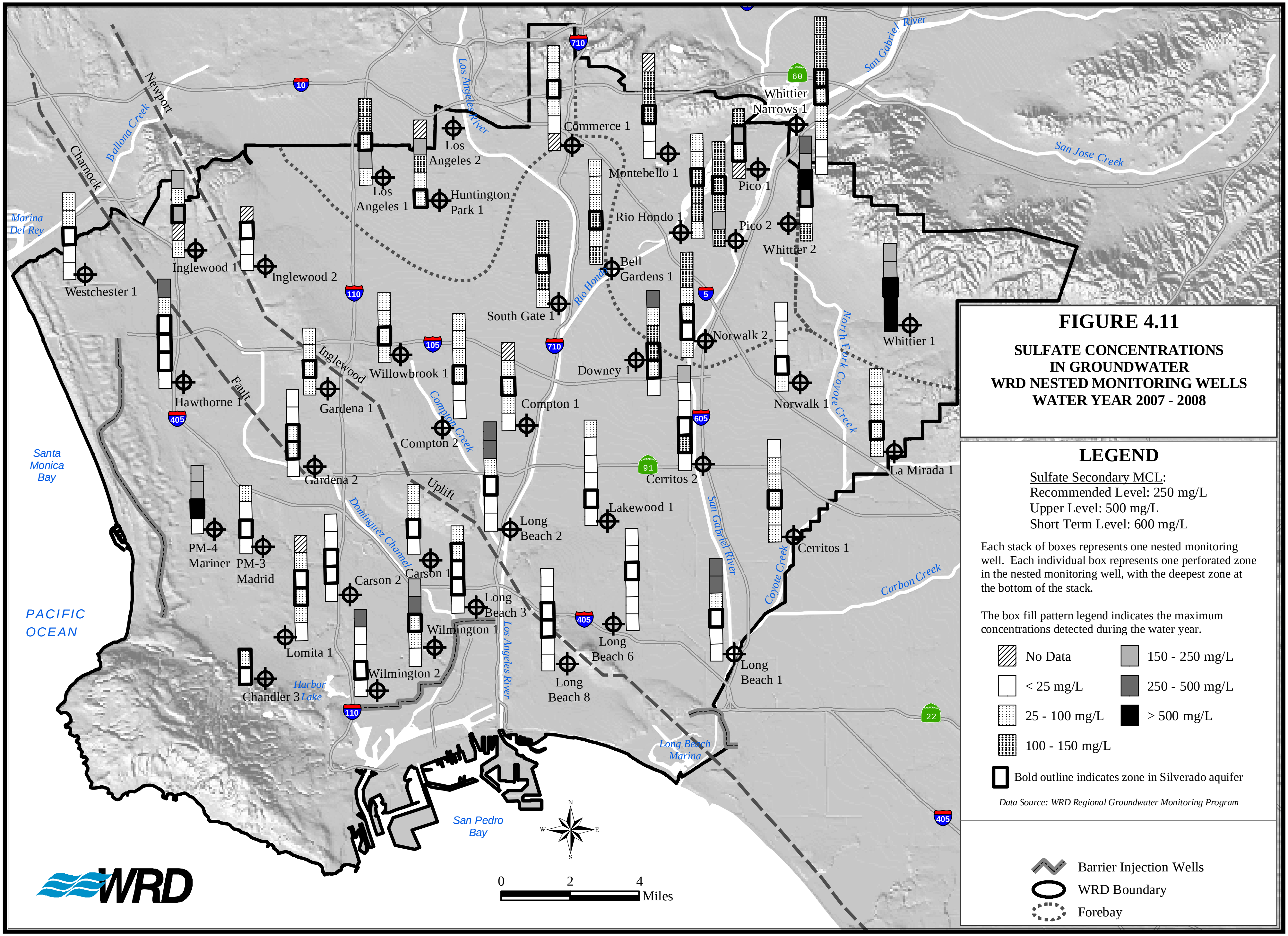


FIGURE 4.11

SULFATE CONCENTRATIONS IN GROUNDWATER WRD NESTED MONITORING WELLS WATER YEAR 2007 - 2008

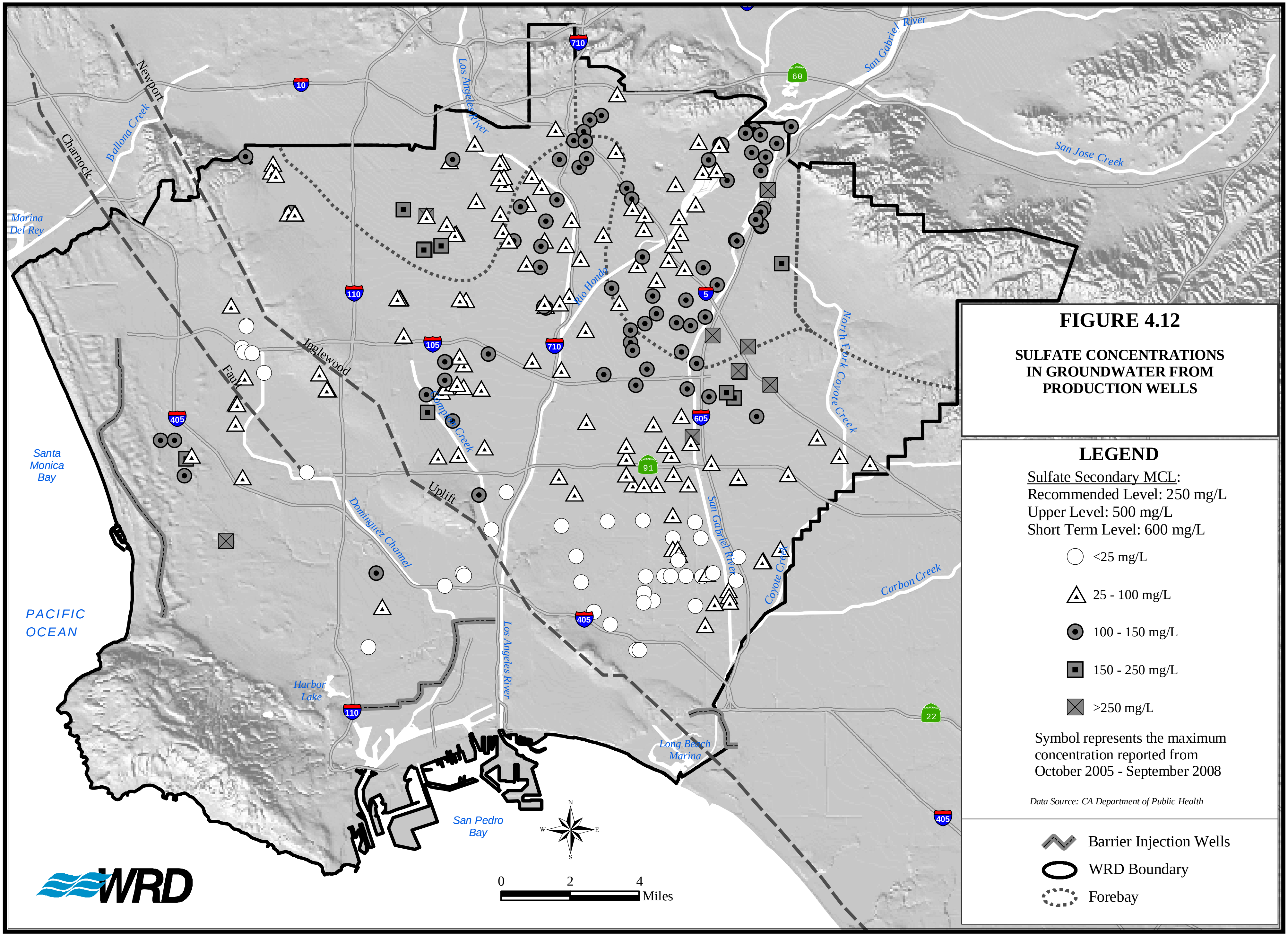


FIGURE 4.12

SULFATE CONCENTRATIONS IN GROUNDWATER FROM PRODUCTION WELLS

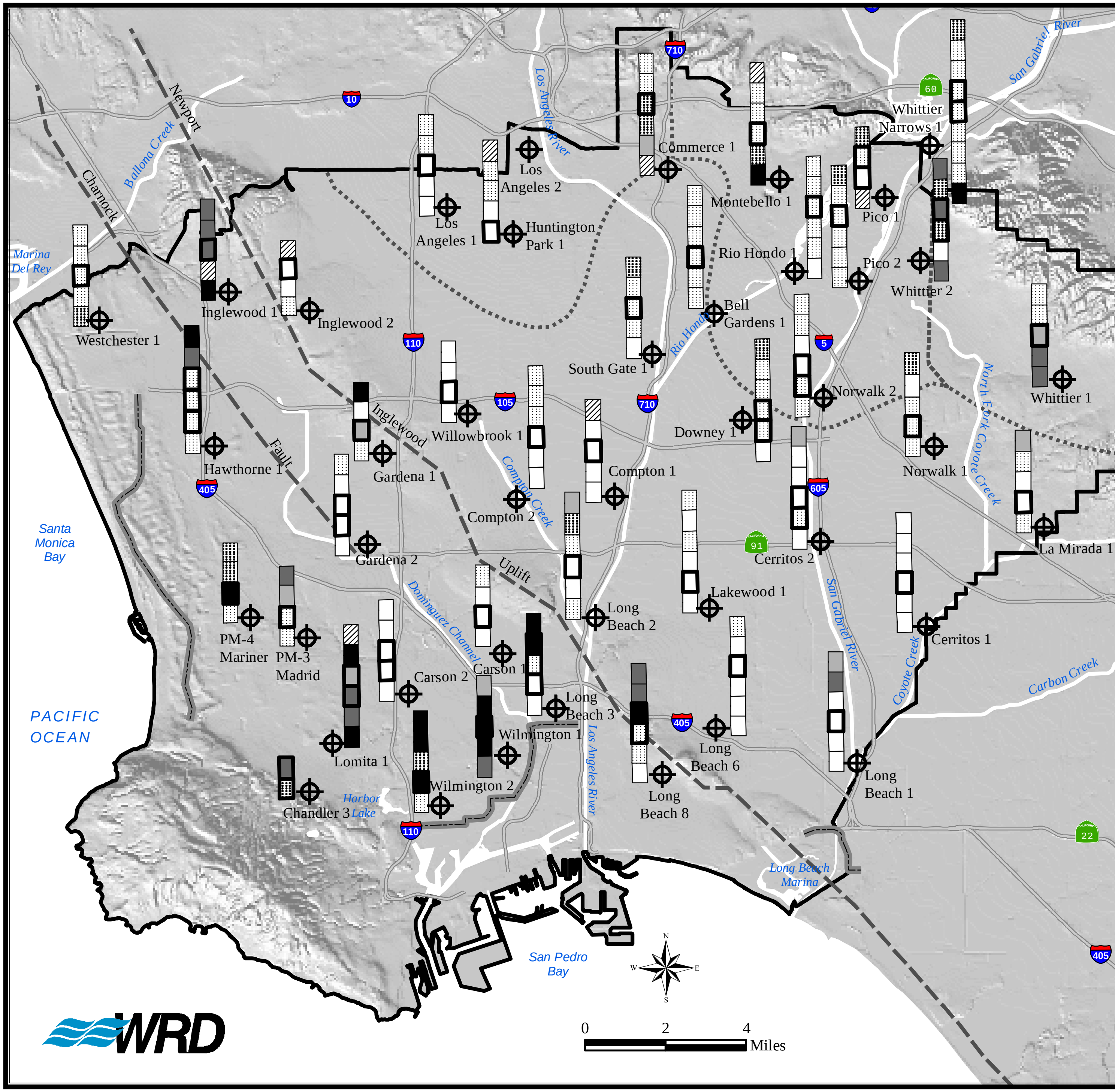


FIGURE 4.13

CHLORIDE CONCENTRATIONS IN GROUNDWATER WRD NESTED MONITORING WELLS WATER YEAR 2007 - 2008

LEGEND

Chloride Secondary MCL:
Recommended Level: 250 mg/L
Upper Level: 500 mg/L
Short Term Level: 600 mg/L

Each stack of boxes represents one nested monitoring well. Each individual box represents one perforated zone in the nested monitoring well, with the deepest zone at the bottom of the stack.

The box fill pattern legend indicates the maximum concentrations detected during the water year.

- No Data
- <25 mg/L
- 25 - 100 mg/L
- 100 - 150 mg/L
- 150 - 250 mg/L
- 250 - 500 mg/L
- >500 mg/L

Bold outline indicates zone in Silverado aquifer

Data Source: WRD Regional Groundwater Monitoring Program

- Barrier Injection Wells
- WRD Boundary
- Forebay

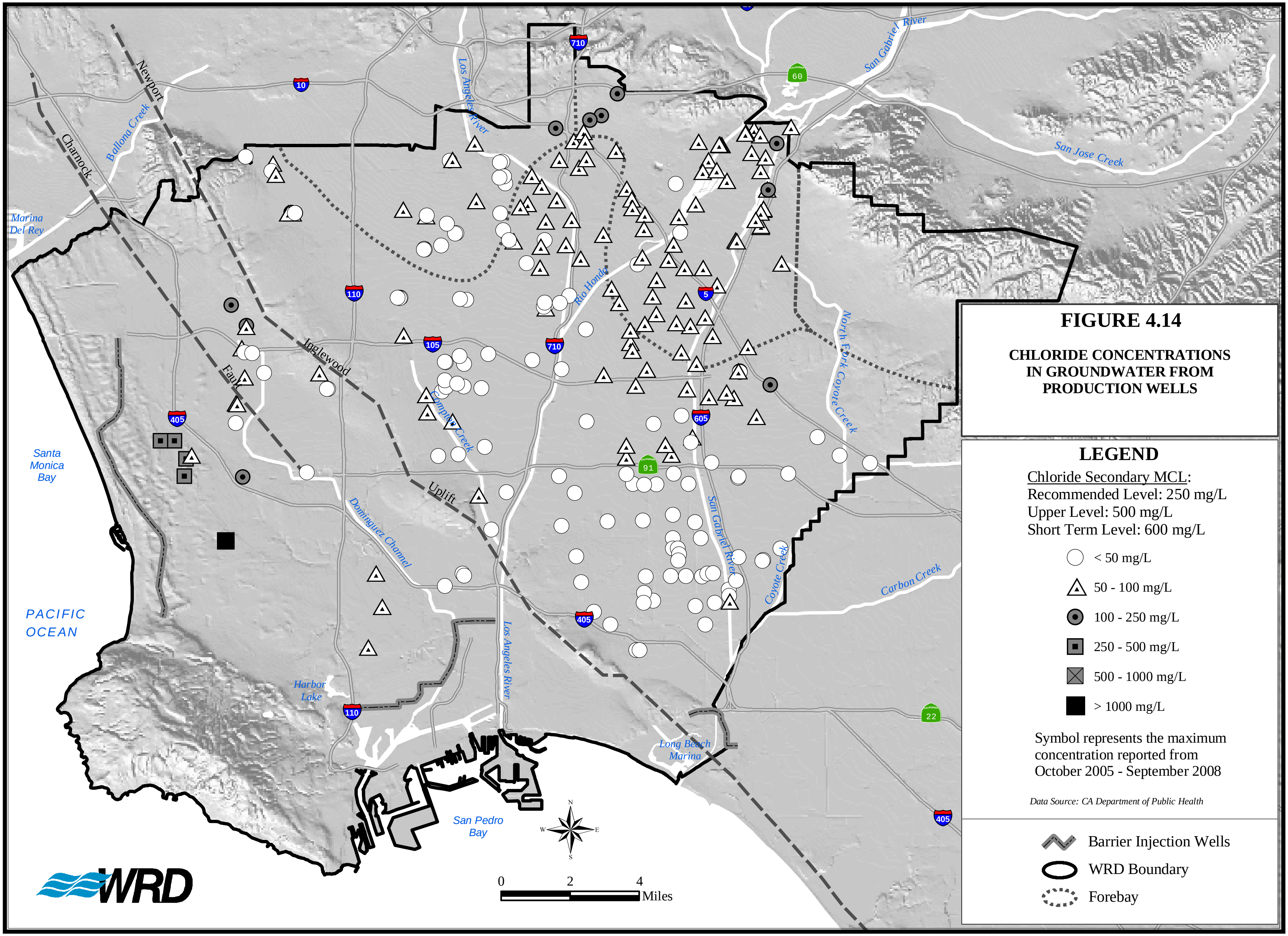


FIGURE 4.14
CHLORIDE CONCENTRATIONS IN GROUNDWATER FROM PRODUCTION WELLS
LEGEND
Chloride Secondary MCL:
Recommended Level: 250 mg/L
Upper Level: 500 mg/L
Short Term Level: 600 mg/L
< 50 mg/L
50 - 100 mg/L
100 - 250 mg/L
250 - 500 mg/L
500 - 1000 mg/L
> 1000 mg/L
Symbol represents the maximum concentration reported from October 2005 - September 2008
Data Source: CA Department of Public Health
Barrier Injection Wells
WRD Boundary
Forebay
PACIFIC OCEAN
Santa Monica Bay
San Pedro Bay
Marina Del Rey
Harbor Lake
Long Beach Marina
Newport
Inglewood
Fault
Uplift
Charnock
Ballona Creek
Los Angeles River
Rio Hondo
San Gabriel River
San Jose Creek
North Fork Coyote Creek
Coyote Creek
Carbon Creek
Compton Creek
Dominguez Channel
0
2
4
Miles
WRD

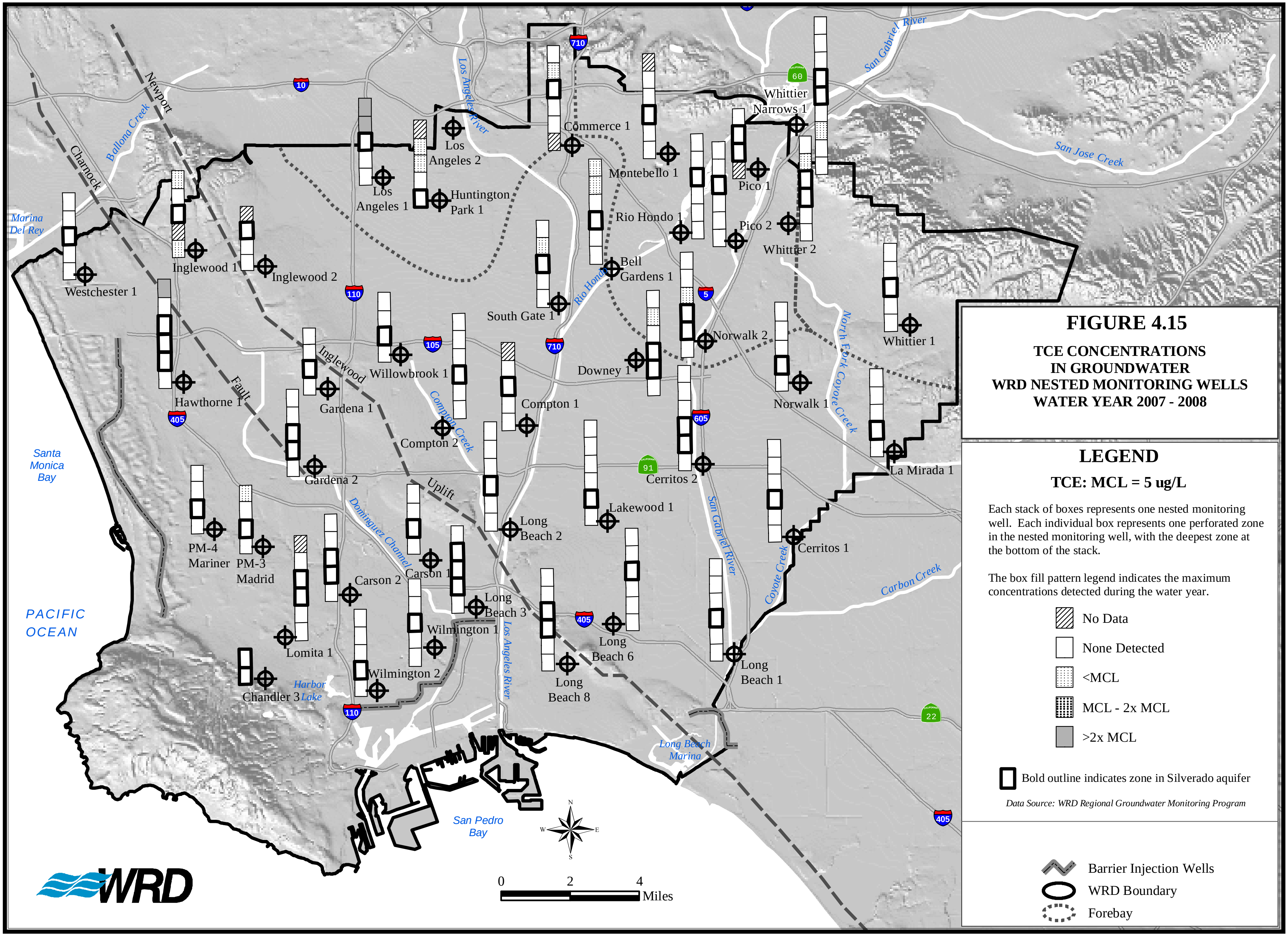


FIGURE 4.15

TCE CONCENTRATIONS IN GROUNDWATER WRD NESTED MONITORING WELLS WATER YEAR 2007 - 2008

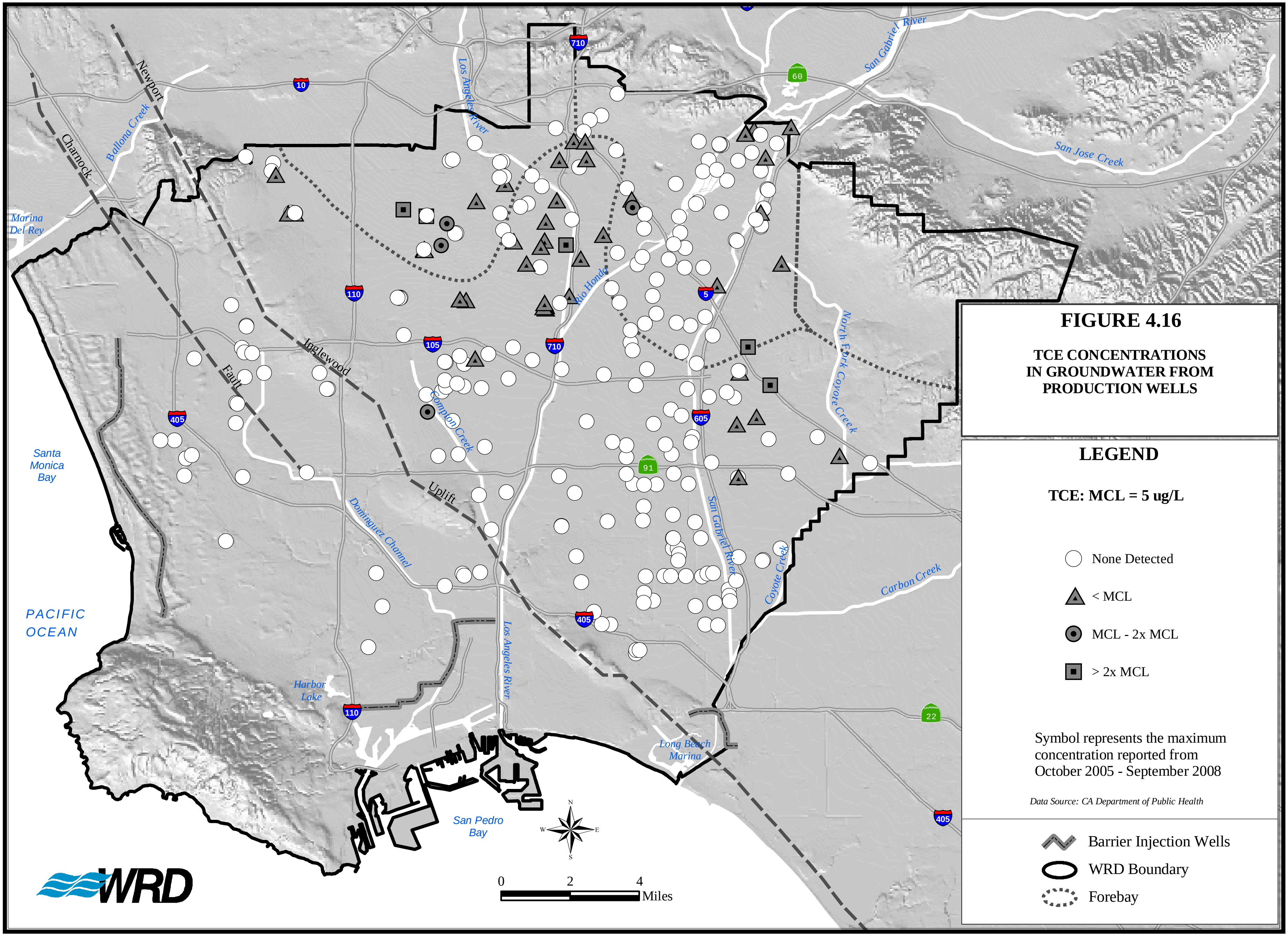


FIGURE 4.16
TCE CONCENTRATIONS
IN GROUNDWATER FROM
PRODUCTION WELLS
LEGEND
TCE: MCL = 5 ug/L
None Detected
< MCL
MCL - 2x MCL
> 2x MCL
Symbol represents the maximum concentration reported from October 2005 - September 2008
Data Source: CA Department of Public Health
Barrier Injection Wells
WRD Boundary
Forebay
PACIFIC OCEAN
Santa Monica Bay
Marina Del Rey
San Pedro Bay
Harbor Lake
Long Beach Marina
Newport
Inglewood
Fault
Uplift
Charnock
Ballona Creek
Los Angeles River
Rio Hondo
San Gabriel River
San Jose Creek
North Fork Coyote Creek
Coyote Creek
Carbon Creek
Compton Creek
Dominguez Channel
10
60
110
105
710
5
605
91
405
22
0
2
4
Miles
N
S
E
W
WRD

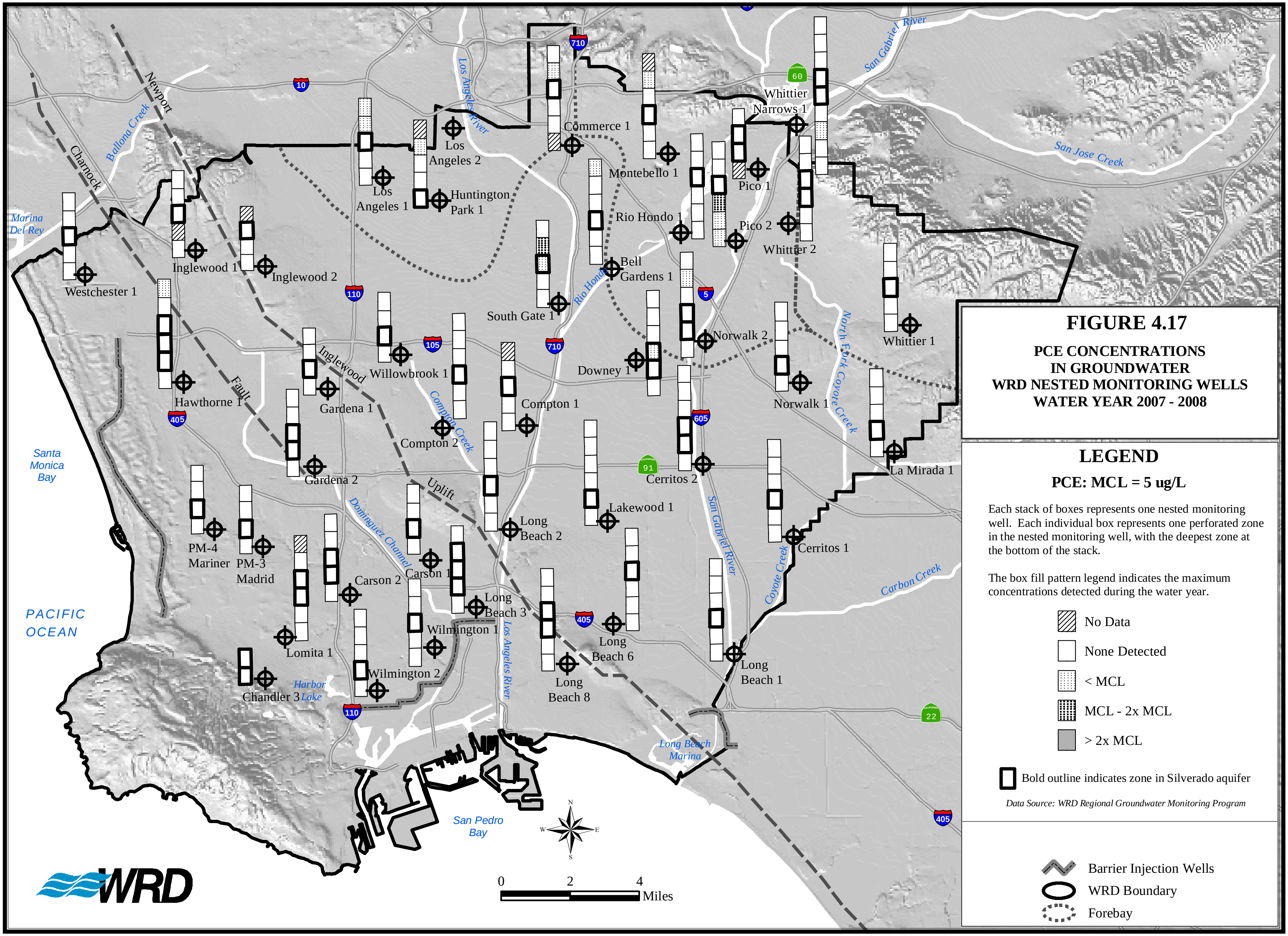


FIGURE 4.17
PCE CONCENTRATIONS IN GROUNDWATER
WRD NESTED MONITORING WELLS
WATER YEAR 2007 - 2008

LEGEND

PCE: MCL = 5 ug/L

Each stack of boxes represents one nested monitoring well. Each individual box represents one perforated zone in the nested monitoring well, with the deepest zone at the bottom of the stack.

The box fill pattern legend indicates the maximum concentrations detected during the water year.

No Data
None Detected
< MCL
MCL - 2x MCL
> 2x MCL

Bold outline indicates zone in Silverado aquifer

Data Source: WRD Regional Groundwater Monitoring Program

Barrier Injection Wells
WRD Boundary
Forebay

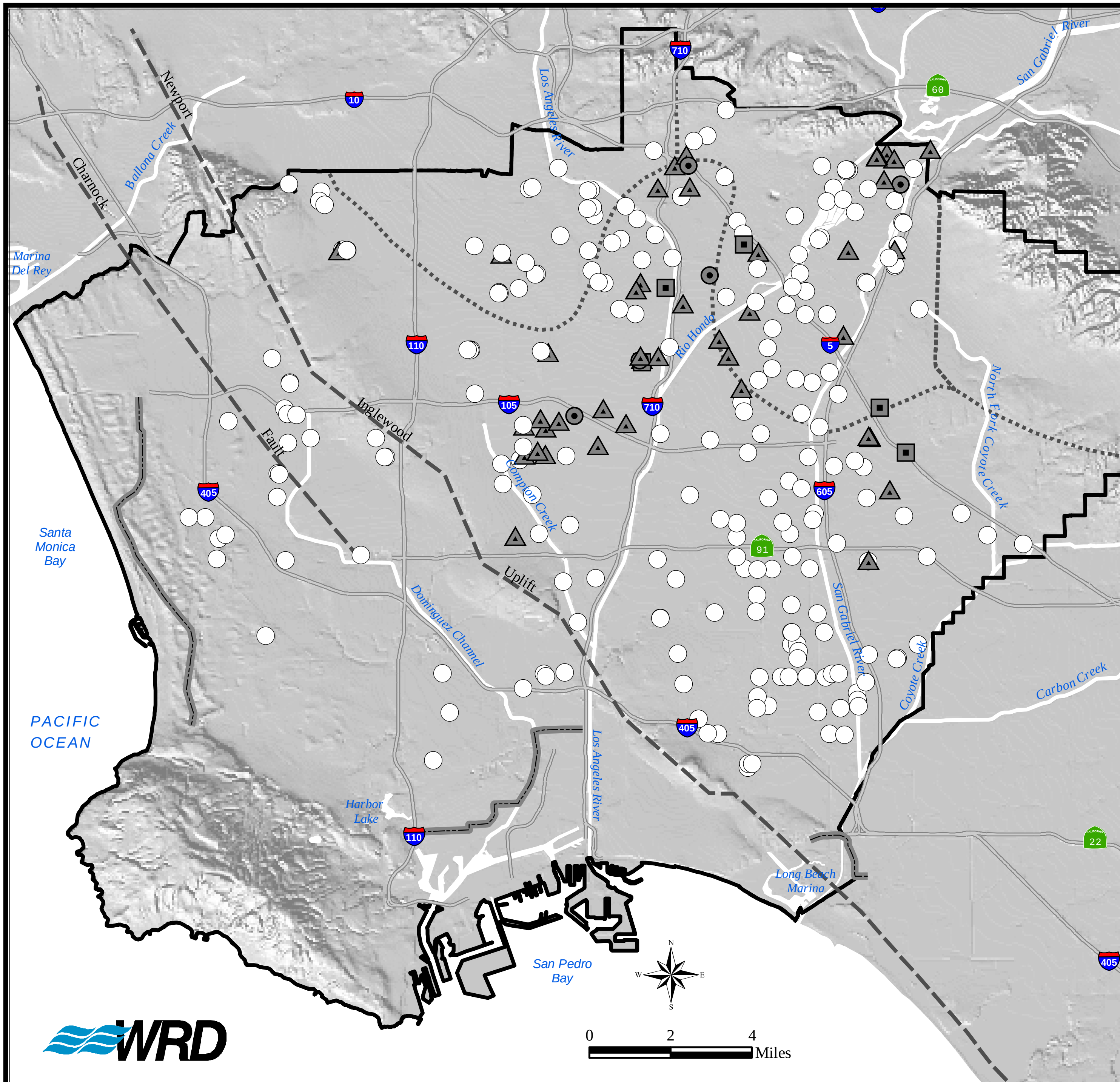


FIGURE 4.18

PCE CONCENTRATIONS IN GROUNDWATER FROM PRODUCTION WELLS

LEGEND

PCE: MCL = 5 ug/L

- None Detected
- < MCL
- MCL - 2x MCL
- > 2x MCL

Symbol represents the maximum concentration reported from October 2005 - September 2008

Data Source: CA Department of Public Health

- Barrier Injection Wells
- WRD Boundary
- Forebay

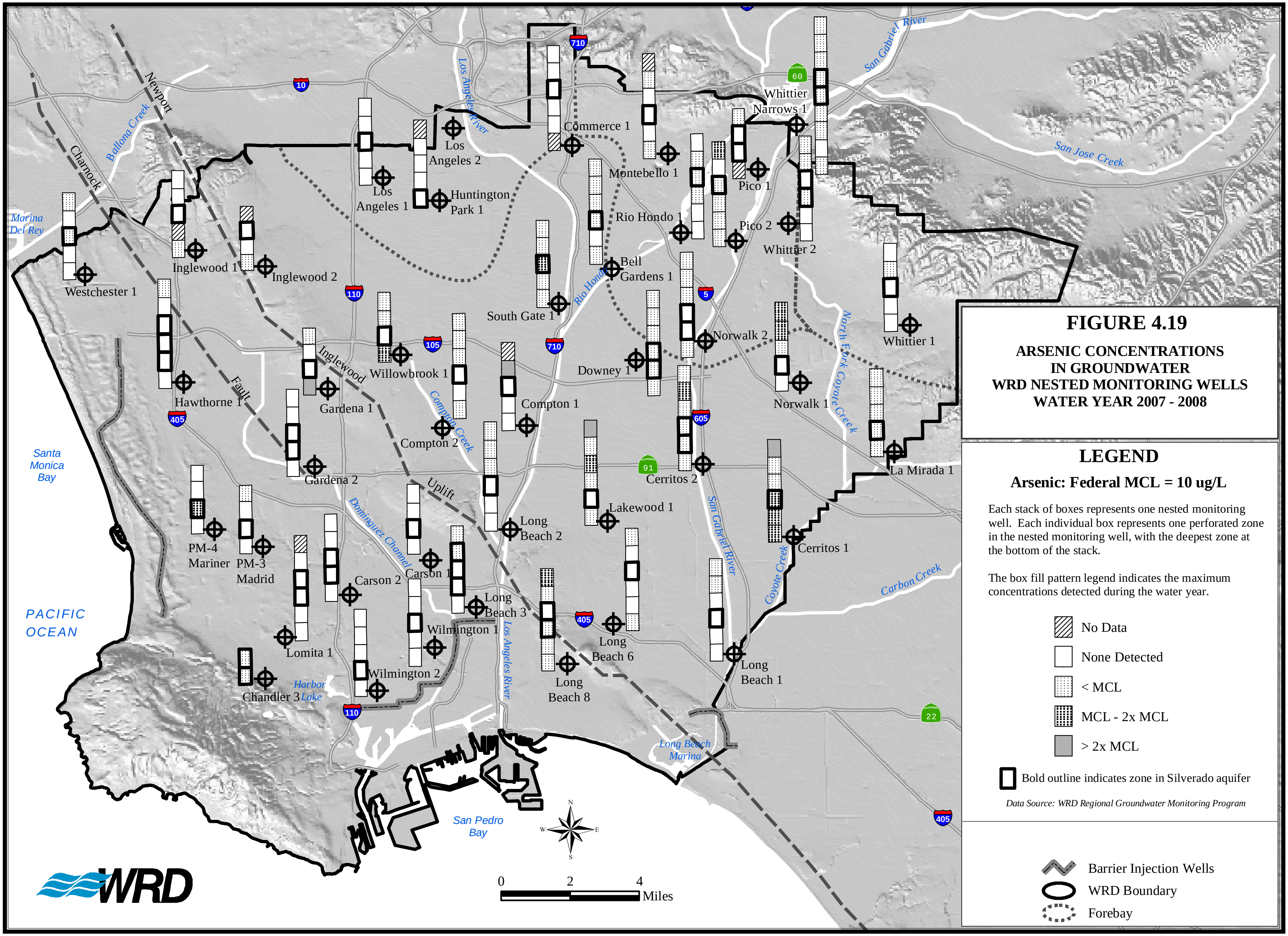


FIGURE 4.19

ARSENIC CONCENTRATIONS IN GROUNDWATER WRD NESTED MONITORING WELLS WATER YEAR 2007 - 2008

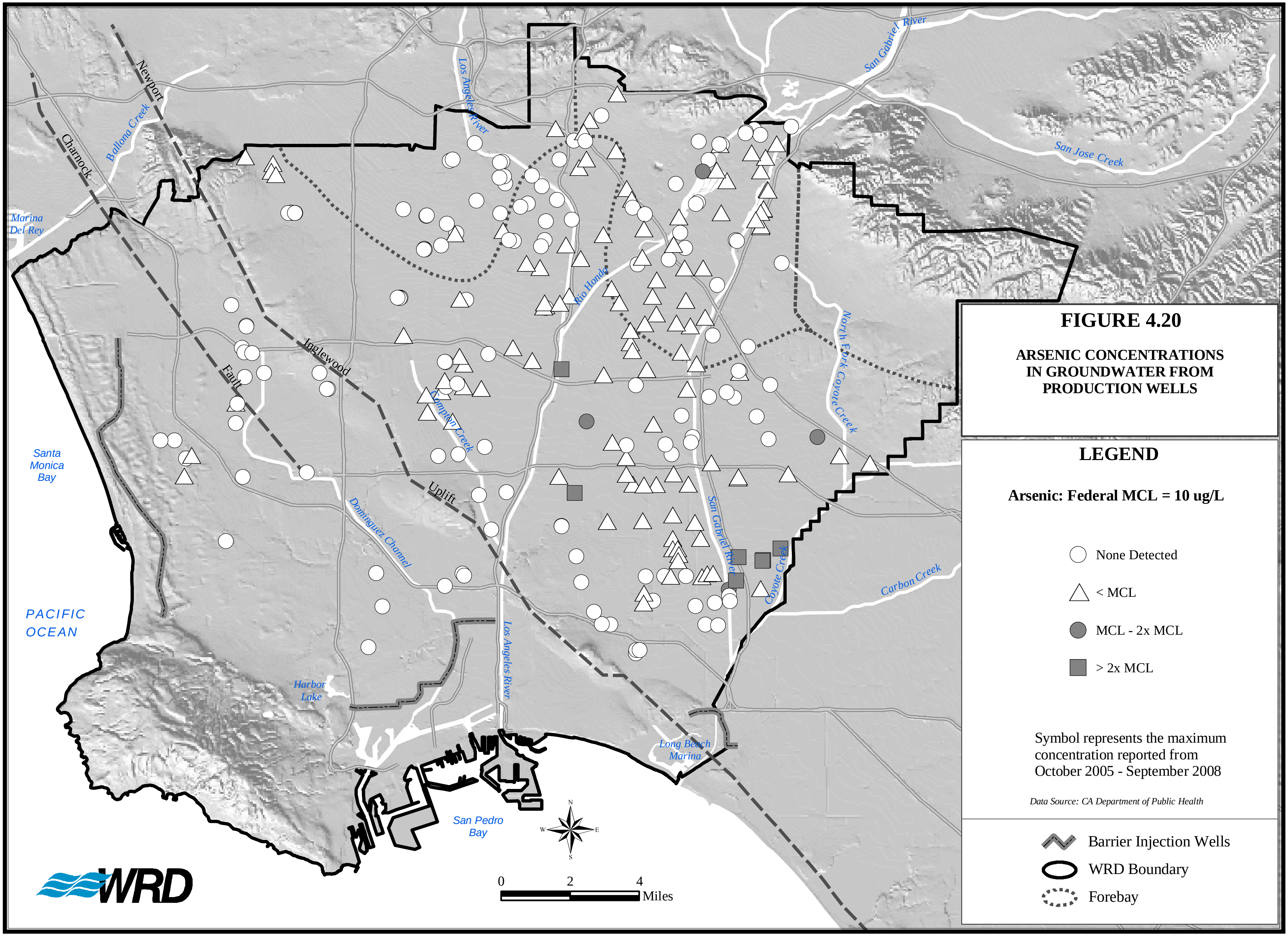


FIGURE 4.20
ARSENIC CONCENTRATIONS IN GROUNDWATER FROM PRODUCTION WELLS
LEGEND
Arsenic: Federal MCL = 10 ug/L
None Detected
< MCL
MCL - 2x MCL
> 2x MCL
Symbol represents the maximum concentration reported from October 2005 - September 2008
Data Source: CA Department of Public Health
Barrier Injection Wells
WRD Boundary
Forebay
PACIFIC OCEAN
Santa Monica Bay
Marina Del Rey
San Pedro Bay
Harbor Lake
Long Beach Marina
Newport
Inglewood
Fault
Charnock
Uplift
Ballona Creek
Los Angeles River
Rio Hondo
San Gabriel River
San Jose Creek
North Fork Coyote Creek
Coyote Creek
Carbon Creek
Compton Creek
Dominguez Channel
0
2
4
Miles
N
S
W
E
WRD

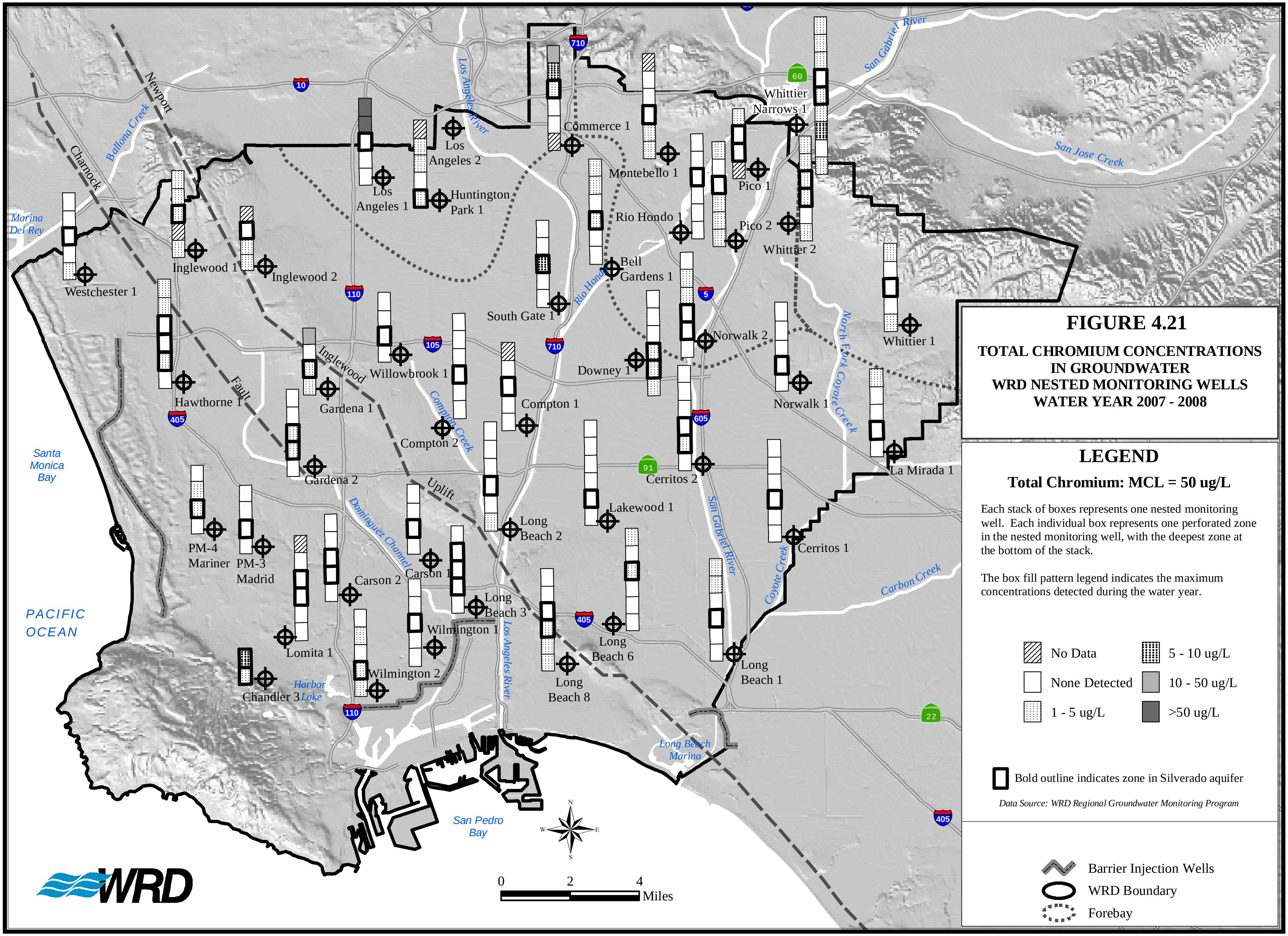


FIGURE 4.21
TOTAL CHROMIUM CONCENTRATIONS IN GROUNDWATER WRD NESTED MONITORING WELLS WATER YEAR 2007 - 2008
LEGEND
Total Chromium: MCL = 50 ug/L
Each stack of boxes represents one nested monitoring well. Each individual box represents one perforated zone in the nested monitoring well, with the deepest zone at the bottom of the stack.
The box fill pattern legend indicates the maximum concentrations detected during the water year.
No Data
None Detected
1 - 5 ug/L
5 - 10 ug/L
10 - 50 ug/L
>50 ug/L
Bold outline indicates zone in Silverado aquifer
Data Source: WRD Regional Groundwater Monitoring Program
Barrier Injection Wells
WRD Boundary
Forebay
0 2 4 Miles
WRD
Westchester 1
Inglewood 1
Inglewood 2
Hawthorne 1
Gardena 1
Gardena 2
Los Angeles 1
Los Angeles 2
Huntington Park 1
Commerce 1
Montebello 1
Rio Hondo 1
Bell Gardens 1
South Gate 1
Willowbrook 1
Compton 1
Compton 2
Downey 1
Norwalk 1
Norwalk 2
Pico 1
Pico 2
Whittier Narrows 1
Whittier 1
Whittier 2
La Mirada 1
Cerritos 1
Cerritos 2
Lakewood 1
Long Beach 1
Long Beach 2
Long Beach 3
Long Beach 6
Long Beach 8
Carson 1
Carson 2
Wilmington 1
Wilmington 2
Lomita 1
Chandler 3
PM-4 Mariner
PM-3 Madrid
Newport
Inglewood
Fault
Charnock
Uplift
Marina Del Rey
Santa Monica Bay
PACIFIC OCEAN
San Pedro Bay
Harbor Lake
Long Beach Marina
Ballona Creek
Los Angeles River
San Gabriel River
San Jose Creek
Rio Hondo
Compton Creek
Dominguez Channel
North Fork Coyote Creek
Coyote Creek
Carbon Creek
10
60
110
105
710
5
605
405
91
22

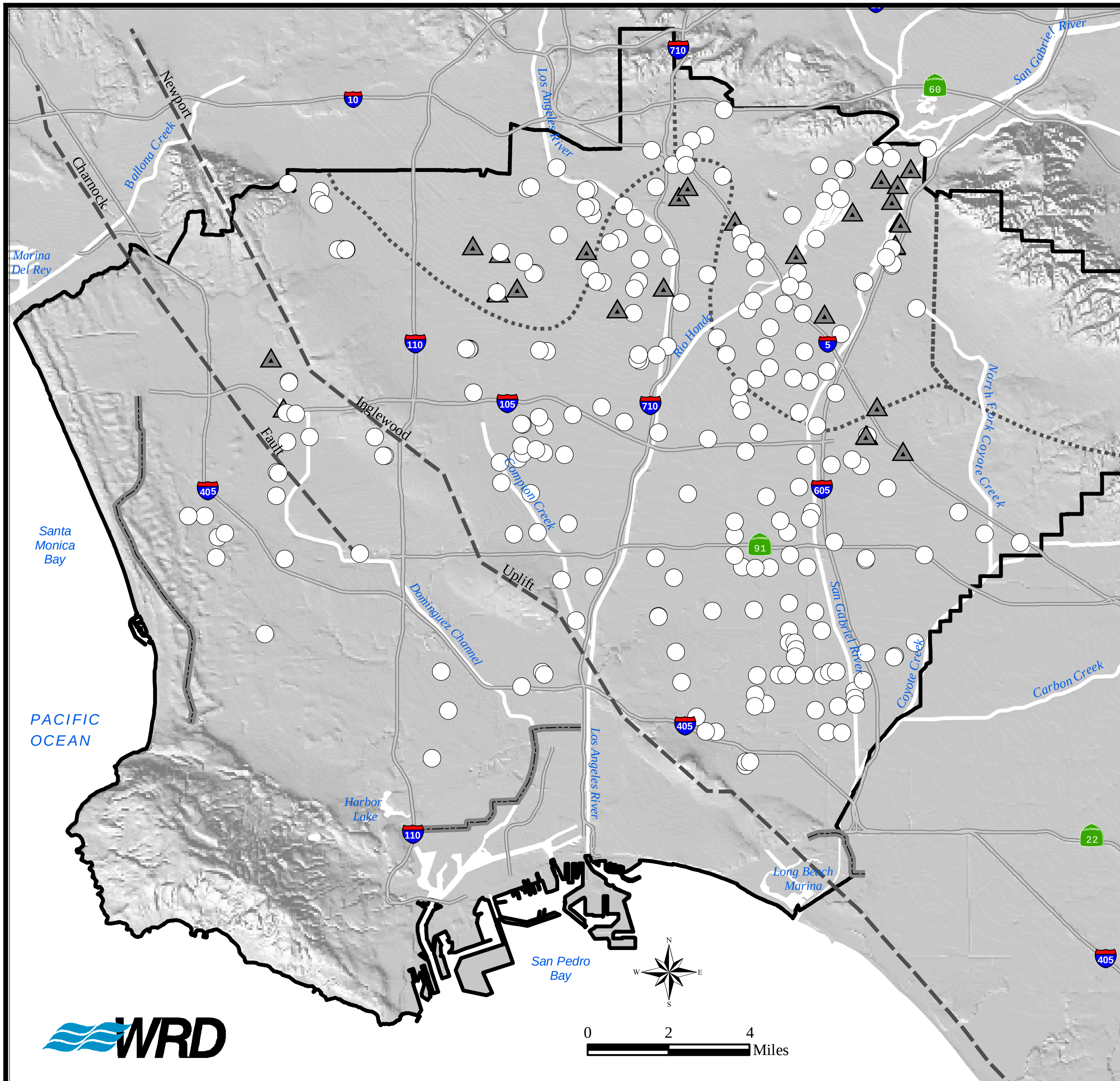


FIGURE 4.22

TOTAL CHROMIUM CONCENTRATIONS IN GROUNDWATER FROM PRODUCTION WELLS

LEGEND

Total Chromium: MCL = 50 ug/L

None Detected

< MCL

Symbol represents the maximum concentration reported from October 2005 - September 2008

Data Source: CA Department of Public Health

Barrier Injection Wells

WRD Boundary

Forebay

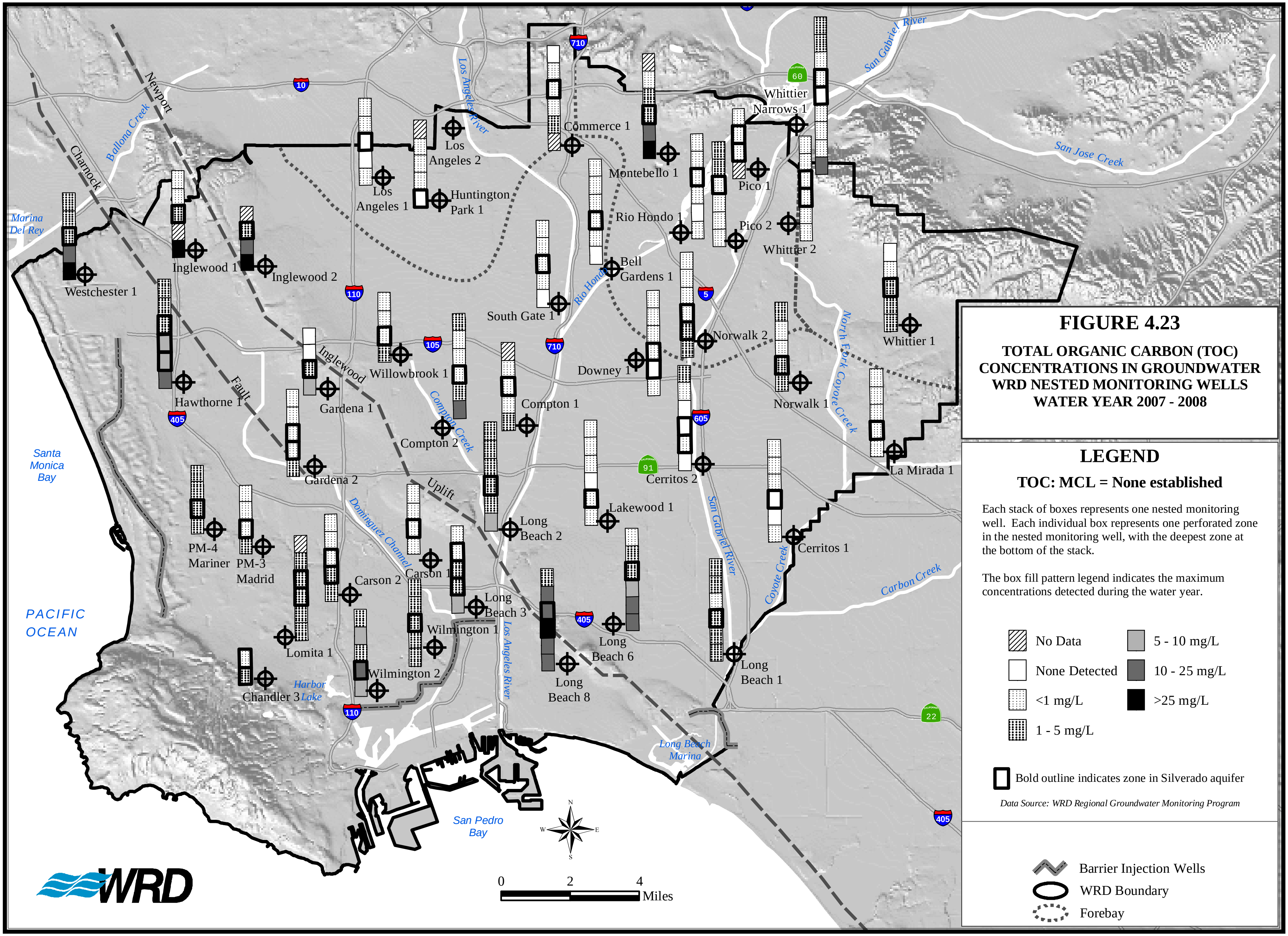


FIGURE 4.23

TOTAL ORGANIC CARBON (TOC) CONCENTRATIONS IN GROUNDWATER WRD NESTED MONITORING WELLS WATER YEAR 2007 - 2008

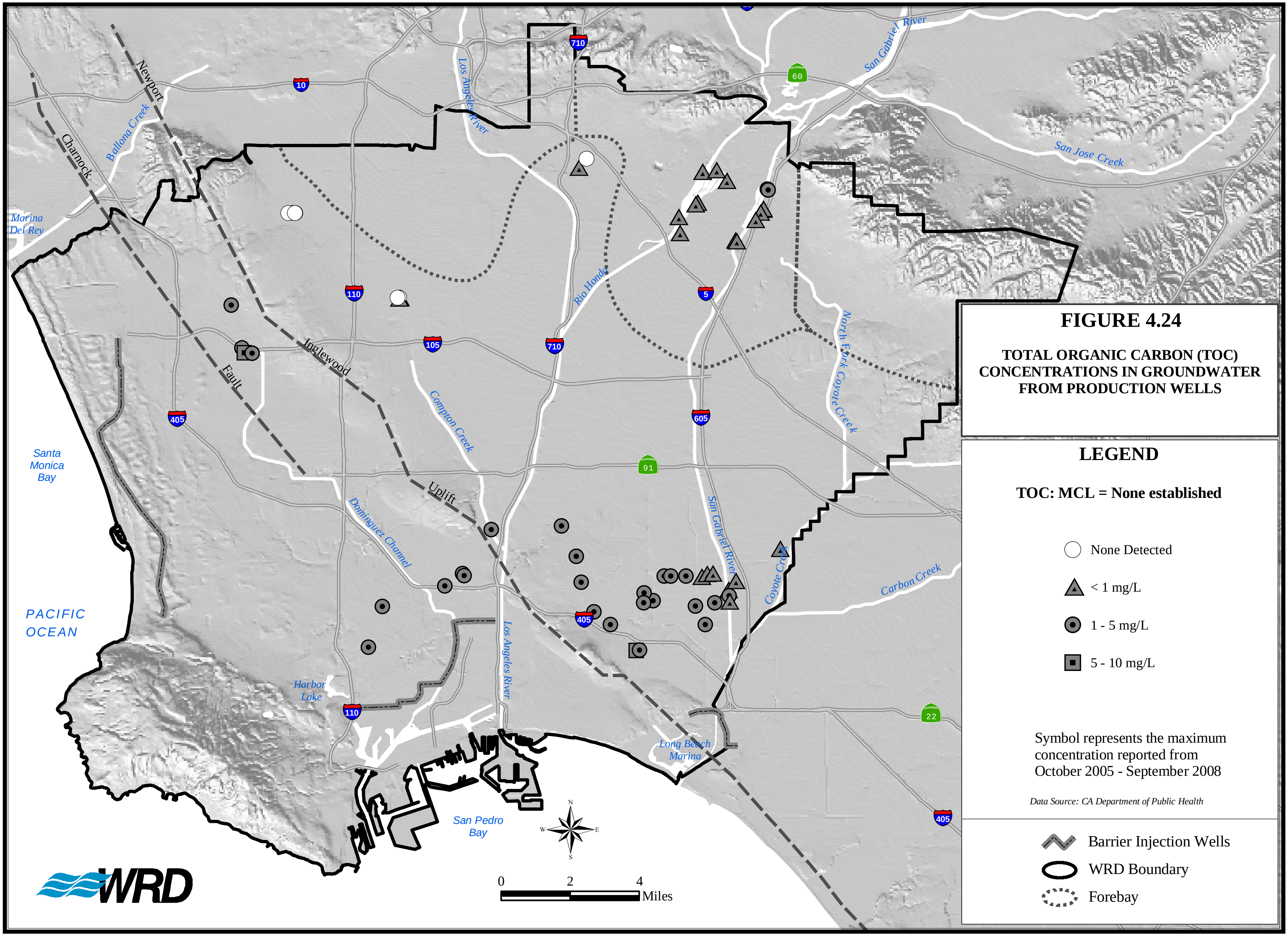


FIGURE 4.24

TOTAL ORGANIC CARBON (TOC) CONCENTRATIONS IN GROUNDWATER FROM PRODUCTION WELLS

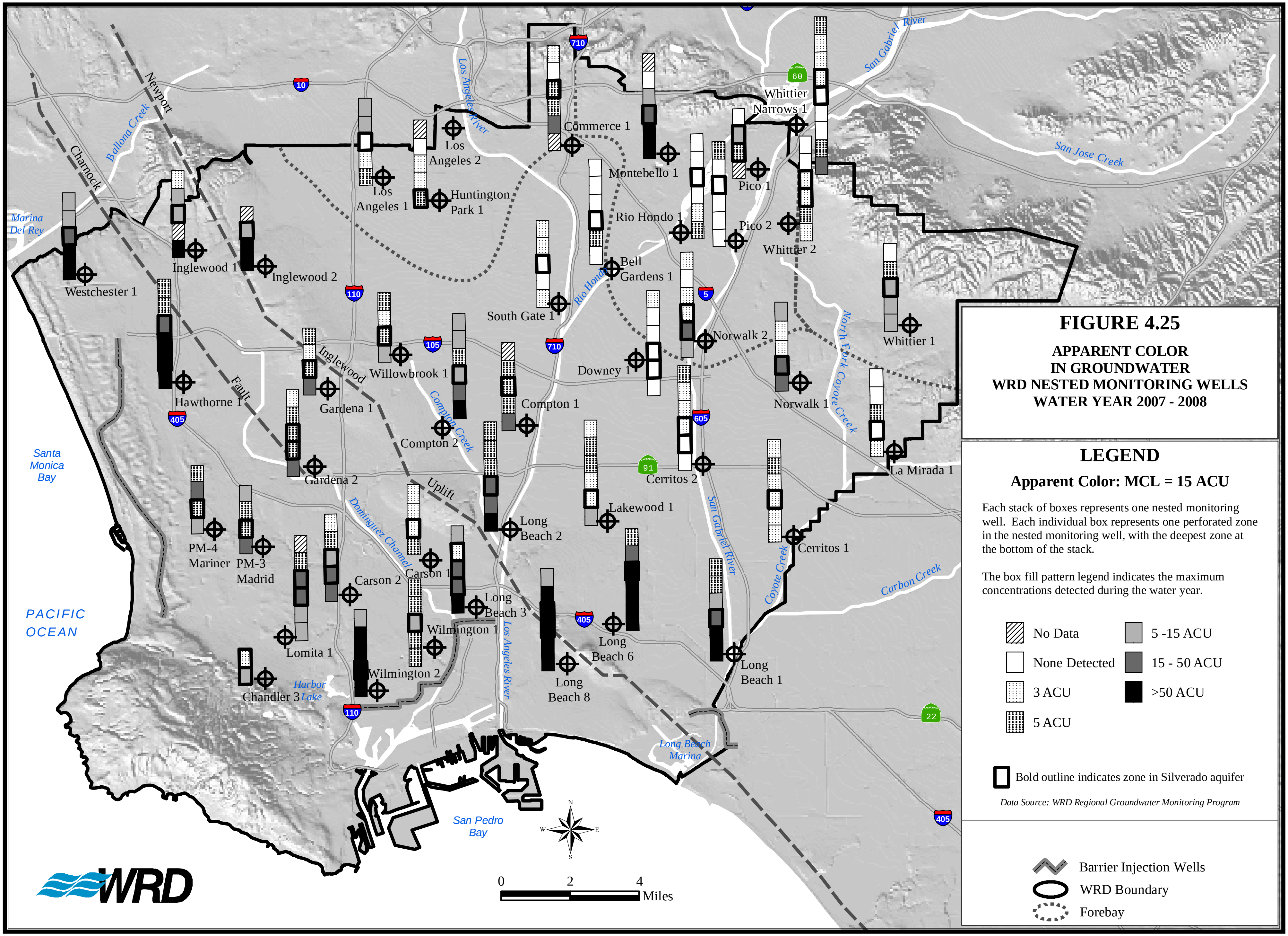


FIGURE 4.25

APPARENT COLOR IN GROUNDWATER WRD NESTED MONITORING WELLS WATER YEAR 2007 - 2008

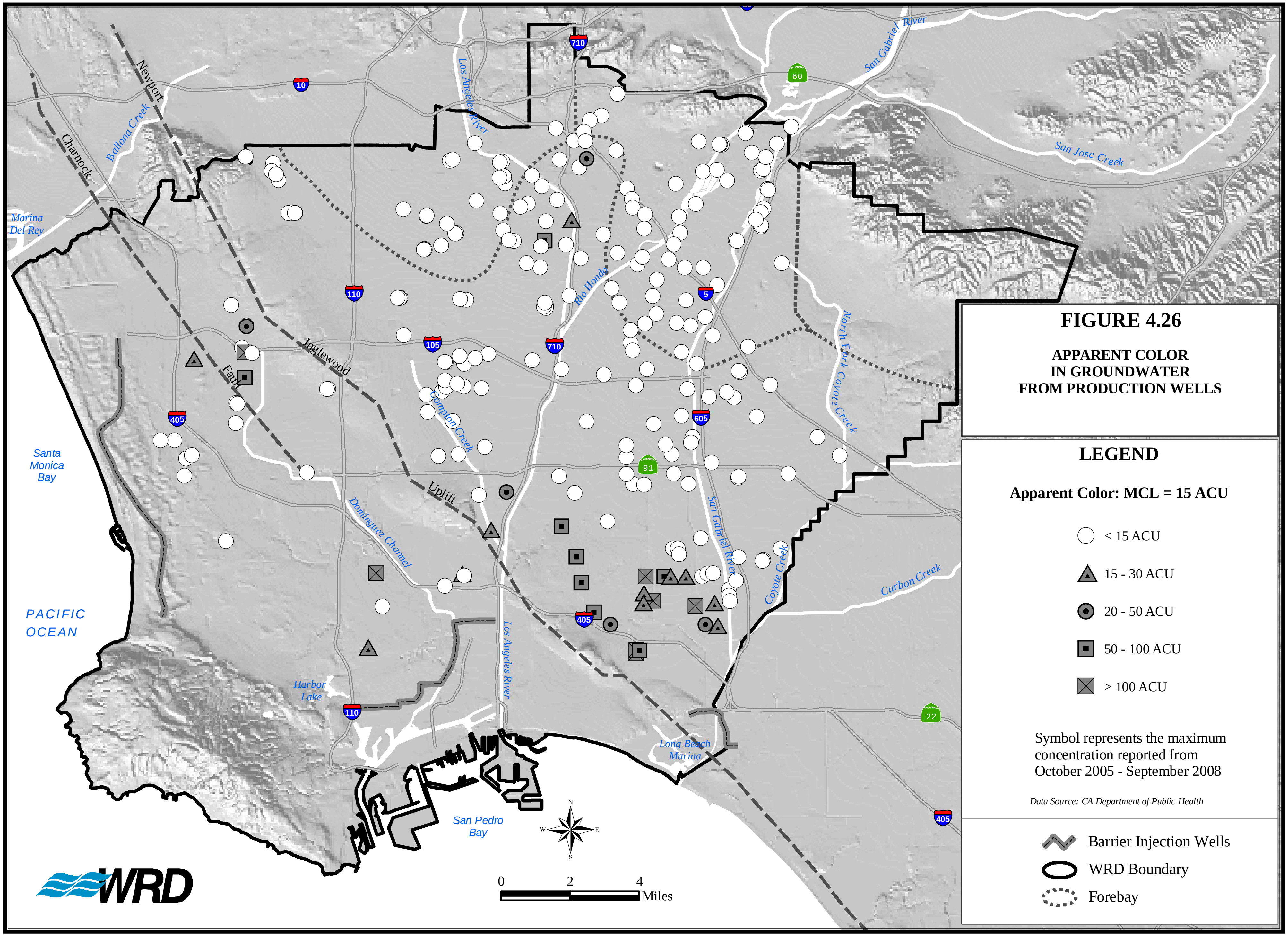


FIGURE 4.26
APPARENT COLOR
IN GROUNDWATER
FROM PRODUCTION WELLS
LEGEND
Apparent Color: MCL = 15 ACU
< 15 ACU
15 - 30 ACU
20 - 50 ACU
50 - 100 ACU
> 100 ACU
Symbol represents the maximum concentration reported from October 2005 - September 2008
Data Source: CA Department of Public Health
Barrier Injection Wells
WRD Boundary
Forebay
WRD
0
2
4
Miles
Santa Monica Bay
PACIFIC OCEAN
Marina Del Rey
San Pedro Bay
Harbor Lake
Long Beach Marina
Newport
Inglewood
Fault
Uplift
Charnock
Ballona Creek
Los Angeles River
Rio Hondo
San Gabriel River
San Jose Creek
North Fork Coyote Creek
Coyote Creek
Carbon Creek
Compton Creek
Dominguez Channel
10
110
105
710
5
605
405
60
91
22

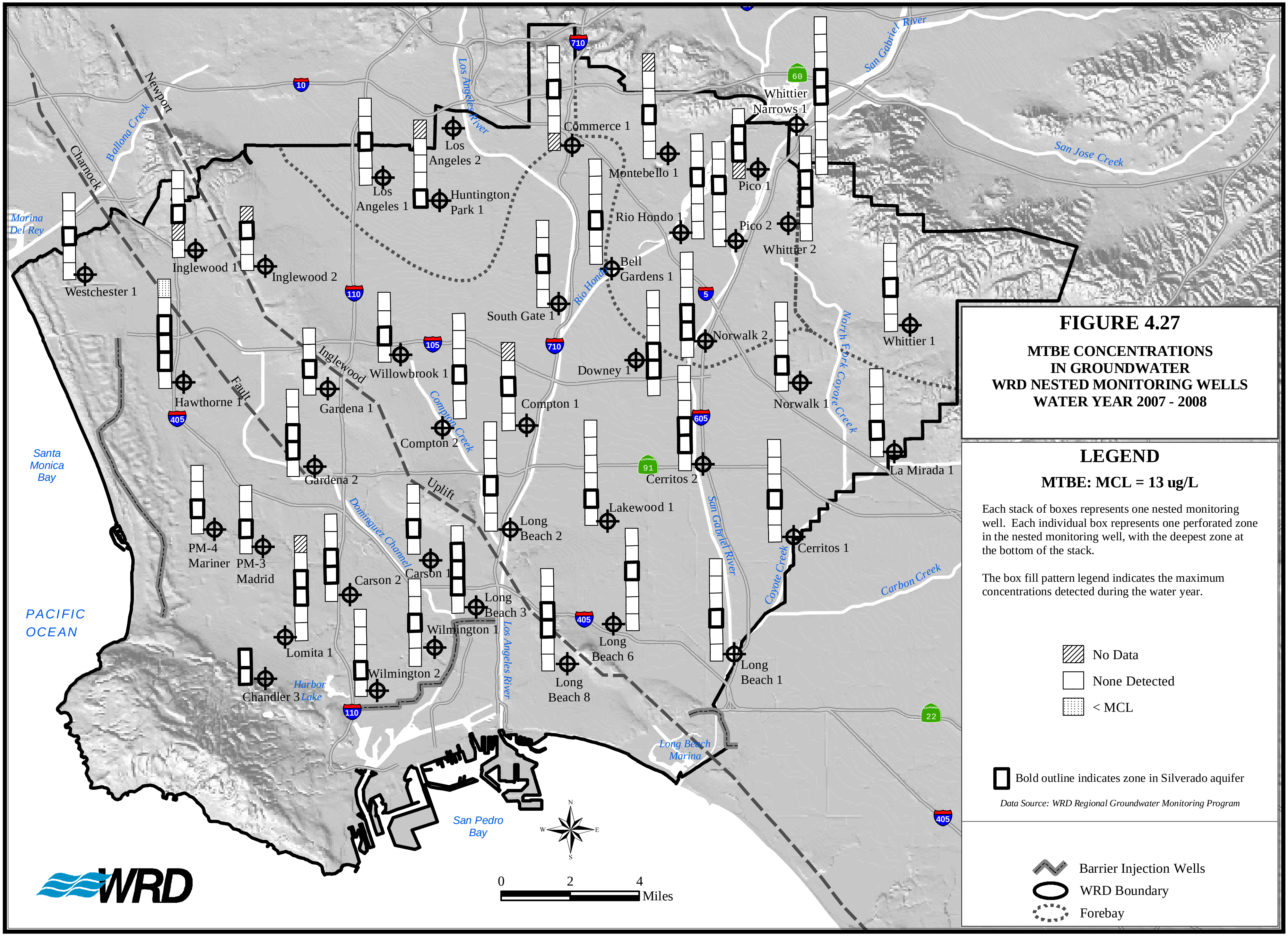


FIGURE 4.27
MTBE CONCENTRATIONS
IN GROUNDWATER
WRD NESTED MONITORING WELLS
WATER YEAR 2007 - 2008
LEGEND
MTBE: MCL = 13 ug/L
Each stack of boxes represents one nested monitoring well. Each individual box represents one perforated zone in the nested monitoring well, with the deepest zone at the bottom of the stack.
The box fill pattern legend indicates the maximum concentrations detected during the water year.
No Data
None Detected
< MCL
Bold outline indicates zone in Silverado aquifer
Data Source: WRD Regional Groundwater Monitoring Program
Barrier Injection Wells
WRD Boundary
Forebay
0
2
4
Miles
Westchester 1
Inglewood 1
Inglewood 2
Los Angeles 1
Los Angeles 2
Huntington Park 1
Commerce 1
Montebello 1
Whittier Narrows 1
Pico 1
Pico 2
Whittier 2
Rio Hondo 1
Bell Gardens 1
South Gate 1
Norwalk 2
Whittier 1
Hawthorne 1
Gardena 1
Willowbrook 1
Downey 1
Compton 1
Compton 2
Norwalk 1
Gardena 2
Cerritos 2
La Mirada 1
PM-4 Mariner
PM-3 Madrid
Carson 2
Carson 1
Long Beach 2
Lakewood 1
Cerritos 1
Long Beach 3
Wilmington 1
Lomita 1
Chandler 3
Wilmington 2
Long Beach 6
Long Beach 8
Long Beach 1
Newport
Inglewood
Fault
Charnock
Uplift
Ballona Creek
Marina Del Rey
Santa Monica Bay
PACIFIC OCEAN
Los Angeles River
San Gabriel River
San Jose Creek
Rio Hondo
Compton Creek
Dominguez Channel
North Fork Coyote Creek
Coyote Creek
Carbon Creek
Harbor Lake
Long Beach Marina
San Pedro Bay
10
710
60
110
105
5
405
605
91
22
WRD

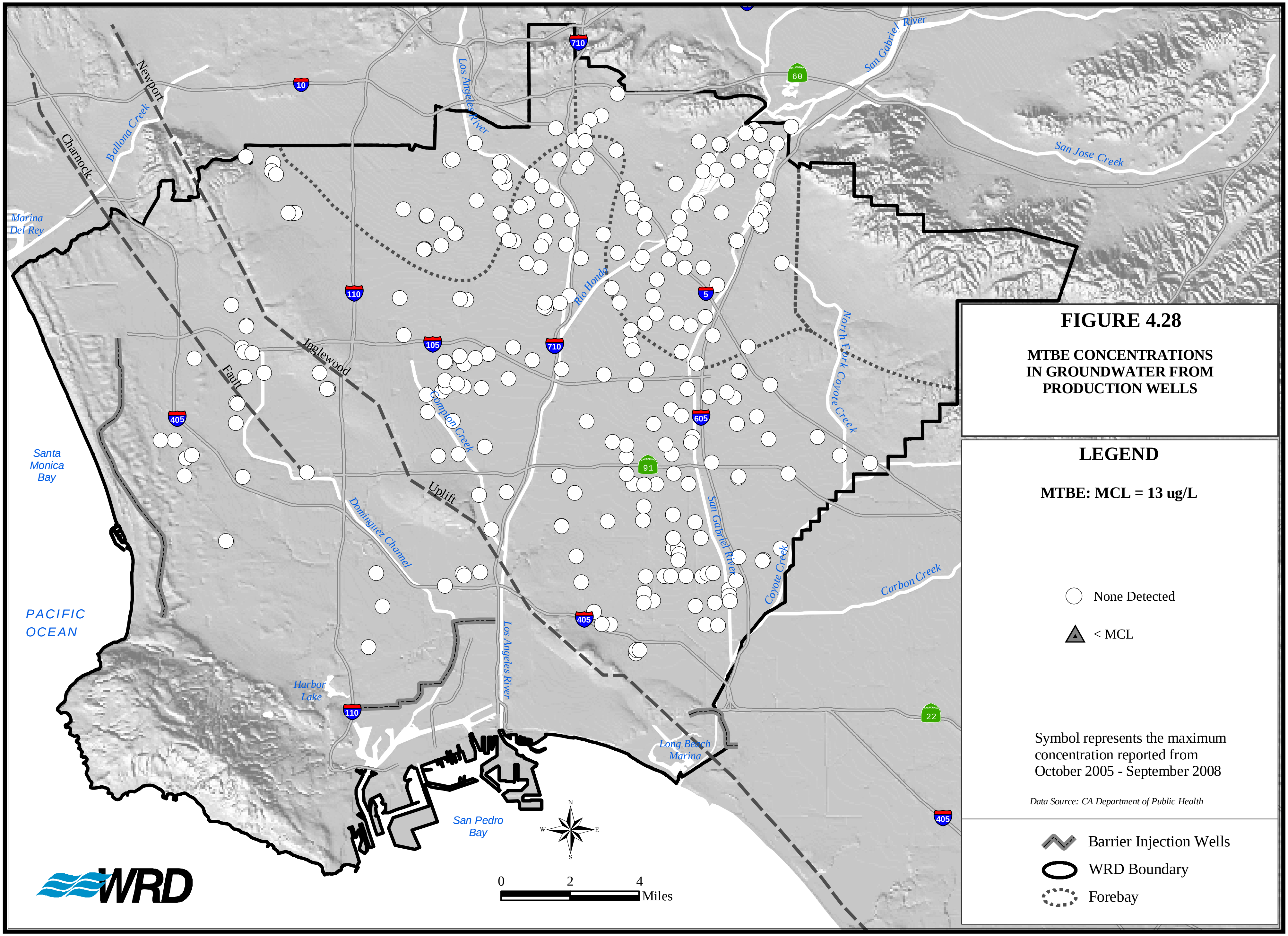


FIGURE 4.28

MTBE CONCENTRATIONS IN GROUNDWATER FROM PRODUCTION WELLS