Water Replenishment District
of Southern California

REGIONAL GROUNDWATER MONITORING REPORT
WATER YEAR 2005-2006

Central and West Coast Basins
Los Angeles County, California

April 2007

WRD

REGIONAL GROUNDWATER MONITORING REPORT
CENTRAL AND WEST COAST BASINS
LOS ANGELES COUNTY, CALIFORNIA
WATER YEAR 2005-2006

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Executive Summary

"To provide, protect and preserve high quality groundwater through innovative, cost-effective and environmentally sensitive basin management practices for the benefit of residents and businesses of the Central and West Coast Basins."

WRD Mission Statement

In 1959, the Water Replenishment District of Southern California (WRD) was formed by the electorate and the State of California to protect and preserve the quantity and quality of the groundwater supplies in the Central and West Coast groundwater basins (CWCB) in southern Los Angeles County. Today, these basins supply 40 percent of the water used by 4 million people in the region. This constitutes WRD's service area—covering 43 cities in a 420-square mile area.

WRD is responsible for managing and safeguarding these basins. Its focus is on maximizing the groundwater basins' capacity, preserving them for future use, and ensuring high water quality. To that end, WRD provides this Regional Groundwater Monitoring Report for Water Year 2005-2006.

WRD's staff of highly skilled hydrogeologists, engineers, planners, and Geographic Information System (GIS) specialists engage year-round in extensive collection, analysis, and reporting of critical groundwater data. They work continually to sample, track, model, forecast, and plan for replenishment and water quality activities to ensure proper groundwater management.

These efforts result in the annual publication of the District's two main reports: the Engineering Survey and Report, issued since 1960, and this Regional Groundwater Monitoring Report, issued since 1995. The Regional Groundwater Monitoring Report presents the latest information on groundwater replenishment activities, groundwater production, groundwater levels, and an extensive section on groundwater quality.

Groundwater Production

This year's groundwater production decreased by 0.9 % from the previous year, from 229,908 acre-feet (AF) to 227,744 AF. This level of groundwater production was the lowest since Water Year 1994-95 resulting from lower demand during near record rainfall, mechanical operation and maintenance problems with wells, and localized water quality issues.

Groundwater Replenishment

Water conservation at the Montebello Forebay Spreading Grounds totaled almost 136,648 AF including 61,398 AF of local water, 33,229 AF of imported water, and 42,021 AF of recycled water.

At the seawater barriers, 21,502 AF of water were injected. Most of this total was imported water, while 6,620 AF was recycled water. Recycled water has been injected at the West Coast Seawater Barriers since 1994. Water Year 2005-06 marks the first year of recycled water injection at the Dominguez Gap and Alamitos Gap Seawater Barriers

Groundwater Levels

Groundwater levels increased slightly over most of the CWCB during the past Water Year due primarily to balanced natural and artificial replenishment at the Spreading Grounds and Seawater Barriers. Twelve thousand AF of groundwater were added to storage during the water year.

Groundwater Quality

In general, groundwater in the main producing aquifers of the basins is of good quality and is suitable for use now and in the future. Localized areas of marginal to poor water quality exist, primarily on the basin margins and in the shallower and deeper aquifers impacted by seawater intrusion.

Volatile organic compounds (VOCs), primarily perchloroethylene (PCE) and trichloroethylene (TCE), are present in the Central Basin and have impacted many production wells. However, in most cases the VOCs are at low concentrations and are below enforceable regulatory levels. Those few wells with higher concentrations above regulatory levels require treatment prior to use as drinking water.

WRD has taken a proactive approach to protecting the basins in the face of emerging water quality issues. Through its monitoring and sampling program and evaluation of current water quality regulations, WRD has determined that the special interest constituents including arsenic, hexavalent chromium, methyl tertiary butyl ether (MTBE), total organic carbon, color and perchlorate do not pose a substantive threat to the basins at this time.

Challenges Ahead

WRD remains committed to its statutory charge to manage the public resource of the basins' storage capacity for the common good. To that end, WRD has in place innovative projects and programs and will continue to implement new water quality initiatives to ensure a continued reliable source of high-quality groundwater, reduce the reliance on costly imported water, and optimize the region's water resources for WRD's groundwater users.

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.

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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. This results in 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 the published 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 the resultant WRD nested monitoring well network. Construction details for the WRD wells are presented in **Table 1.1.** WRD and the USGS are currently expanding the nested monitoring well network which will include 4 new wells in 2006-2007 (Figure 1.3), and will consider need for additional wells to fill data gap areas over the next several years.

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 aquifers 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 the 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 producing zone, which typically includes the Lynwood aquifer and may also include the Sunnyside aquifer.

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 2005-2006, 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 2005-2006. 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 obtained from the Districts web site at www.wrd.org.

SECTION 2
GROUNDWATER REPLENISHMENT

Natural groundwater replenishment occurs through the percolation of precipitation and applied waters (such as irrigation), conservation of stormwater in spreading grounds, and underflow from adjacent basins. Although it occurs to an extent within the CWCB, there is insufficient natural replenishment to sustain the groundwater pumping that takes place. Therefore, WRD provides for artificial groundwater replenishment through the purchase of imported and recycled water 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 Barriers, 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 2005-2006.

2.1 SOURCES OF REPLENISHMENT WATER

Replenishment water comes from imported, recycled, and local sources. The types used by WRD are described below:

- Imported water: This source comes from the Colorado River and/or the State Water Project via pipelines and aqueducts. WRD purchases this water from the Metropolitan Water District (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 without further treatment from the sources, as the source quality is high and the water is treated naturally as it percolates through the vadose zone soils. For the seawater barrier wells, the water is treated to meet all drinking water standards before injection, since it will not be percolating through vadose zone soils. Spreading water is available seasonally from MWD if they have excess reserves at a discounted rate, whereas a premium price is paid for 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. Tertiary-treated recycled water is used for replenishment at the spreading grounds. Tertiary-treated recycled water followed by advanced treatment microfiltration and reverse osmosis 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 2005-2006, 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) conserved in the Montebello Forebay Spreading Grounds by the LACDPW. Precipitation falling on the basin floor and water applied to the ground (such as irrigation water) are also considered to be local water as they also percolate into the subsurface and contribute to 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 2005-2006:

- 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 135,628 acre-feet (AF). This is greater than the historical running average of 128,199 AF (WY 1963-64 through 2005-06).

- The quantity of local water conserved during WY 2005-2006 was 60,377 AF, also higher than the historical running average of 51,668 AF, and higher than the previous 5-year average of 59,649 AF (WY 2000-01 through 2004-05).

- The quantity of imported water conserved during WY 2005-2006 was 33,229 AF. This is lower than the long-term running average of 43,938 AF, but higher than the previous 5- year average of 27,980 AF .

- The quantity of recycled water conserved during WY 2005-2006 was 42,022 AF. This is higher than the long-term running average of 32,592 AF and less than the previous 5-year average of 44,288 AF.

- In addition to the water sources shown on **Table 2.1**, the Montebello Forebay received an estimated 5,386 AF of recharge due to infiltration of precipitation falling on the forebay floor, and an estimated 23,267 AF of groundwater underflow from San Gabriel Valley. The total replenishment was therefore 164,281 AF, of which 25.6 % was recycled water. The three-year average recycled water used was 38,816 AF, and the three-year averaged percent recycled water component was 22.1 %.

At the seawater intrusion barriers (**Table 2.2**), the following trends are noted for the quantities of artificial replenishment water for WY 2005-2006:

- At the West Coast Basin Barrier, 10,246 AF were injected, which included 5,997 AF of imported water and 4,249 AF of recycled water (41.4%). Up to 75% recycled water injection is currently permitted at the West Coast Basin barrier. The long-term injection average from WY 1963-64 through 2005-06 was 20,059 AF. The previous 5-year average (2000-01 through 2004-05) was 15,776 AF.

- At the Dominguez Gap Barrier, 8,709 AF were injected of which 7,259 AF was imported and 1,450 AF was recycled (16.6%). Up to 50% recycled water is currently permitted. The long-term average from WY 1970-71 through 2005-06 was 6,089 AF, and the previous 5-year average (2000-01 through 2004-05) was 6,417 AF. This was the first year recycled water has been injected at the Dominguez Gap Barrier.

- At the Alamitos Barrier, both WRD and Orange County Water District (OCWD) provide injection water; WRD for wells on the Los Angeles County side, and OWCD for wells on the Orange County side. During WY 2005-2006 a total of 2,547 AF were injected into the barrier system, 1,963 AF by WRD (1,042 AF imported and 921 AF recycled) and 1,685 AF by OCWD (330 AF imported and 254 AF recycled). The total recycled water contribution was 46.1%, and up to 50% is allowed by permit. The long-term average for total injection from WY 1964-65 through 2005-06 was 5,044 AF, and the 5-year average (2001-02 through 2005-06) was 4,749 AF. This was the first year recycled water has been injected 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 and at elevated levels or of current regulatory interest in wells in the CWCB. 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) is a non-enforceable health-based advisory level established by the California Department of Health Services (DHS) 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 DHS 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.

- <u>Total Dissolved Solids (TDS):</u> 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.
- <u>Hardness:</u> 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. DHS 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 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 (greater than 100 mg/L), while native groundwater and State Water Project water have relatively low sulfate concentrations (around 50 mg/L).
- 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: DHS Primary MCLs limit two forms of nitrogen, nitrite and nitrate, in drinking water. 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. These constituents are of concern because they 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, incrusts well screens, and 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.
- Perchloroethlene (PCE): Perchloroethylene (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 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.
- 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 2006 the DHS issued a draft MCL of 6 µg /L.

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 average TDS concentration of Colorado River water was 633 mg/L in 2005. The average TDS concentration of State Project Water was 261 mg/L.

The average hardness of untreated Colorado River water was 307 mg/L. The average hardness of untreated State Project Water was 111 mg/L.

The average nitrate plus nitrite concentration of Colorado River water remained below detection limits. The average nitrate plus nitrite concentration of State Project Water has increased over the previous reported water year to 0.63 mg/L. Recently and historically, both Colorado River and State Project Water nitrate plus nitrite 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. Both Colorado River and State Project Water chloride and sulfate concentrations have historically been below their respective MCLs.

Total organic carbon was reported at 3 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 reporting period. Untreated Colorado River Water had an average concentration to 4.4 µg/L of perchlorate. Perchlorate was not detected in State Project Water in 2005.

Quality of Recycled Water

Recycled water is introduced into the CWCB through percolation and 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 either decreased slightly or remained stable over recent Water Years. Furthermore, neither TCE nor PCE have been detected in recycled water from these four WRPs over the last five Water Years.

Recycled water from the West Basin Municipal Water District WRP undergoes advanced treatment using microfiltration and reverse osmosis, is blended with imported water, and is then injected at the West Coast Barrier. This water is treated to meet or exceed drinking water standards and is suitable for direct injection. The blend of recycled water and imported water is injected to prevent the intrusion of salt water and to replenish the groundwater basins. The West Basin Municipal Water District received approval from the RWQCB to increase the percentage from 50 to 100 percent recycled water in the future after demonstrating that 75 percent injection remains safe after several years. **Table 2.3** presents average water quality data for this injected recycled water.

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 are presented on **Table 2.3**. The average TDS, hardness, sulfate, chloride, nitrate, TCE, and PCE concentrations of stormwater in the Montebello Forebay are relatively low. TOC in stormwater averaged 15.23 mg/L which is generally high in relation to other source waters.

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 nearly doubled this amount. Between 1934/35 and 1956/57 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 salt water 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 with WRD being 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 2005-2006, groundwater production in the CWCB was 227,744 AF, of which 191,030 AF occurred in the Central Basin and 36,714 AF occurred in the West Coast Basin. This represents a 0.9% decrease from the previous year (1.2% increase in the Central Basin and an 11% decrease in the West Coast Basin). As a comparison, over the past five years production has averaged 239,557 AFY (194,003 AFY in the Central Basin and 45,554 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 Water Year.

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. And, groundwater levels can indicate possible source areas for saltwater 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 every six hours. WRD also obtains water level data from cooperating entities such as the pumpers, DWR, and LACDPW, who also collect water levels from their wells. These data are entered into WRD's GIS for storage and analyses. 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 2006. 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, and because of reduced pumping due to a reduced water demand and the pumpers' use of MWD seasonal water. The figure shows that in the Central Basin, the highest water levels are in the Montebello Forebay, getting lower to the south and west towards Long Beach area and the Los Angeles Forebay, respectively. In the West Coast Basin, water levels are highest along the West Coast Basin Barrier Project, and become lower to the east reaching the 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 2006. 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, especially in the Long Beach and Gardena areas. As shown in **Figure 3.4**, water levels between spring and fall 2006 varied very little in the West Coast Basin, but in the Central Basin they varied up to 75 to 100 feet in the Long Beach area. This wide swing in water levels resulted from the changes in pumping patterns that occurred in the Central Basin and the confined aquifers in the Long Beach area that contribute to large water level (pressure) variations.

Figure 3.5 illustrates the monthly pumping patterns for WY 2005-2006. In the Central Basin, monthly pumping ranged from about 12,300 AF in April to 20,300 AF in July. The seven month average between October and April is 15,919 AF/month compared to the 5 month average between May and September of 19,260 AF/month. This difference of about 3,300 AF/month explains the large water level fluctuations between spring and fall. In the West Coast Basin, pumping fluctuations were more consistent, averaging 3,060 AF/month throughout the year.

WRD also uses 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 that have 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 all 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 as 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. An exception is in the West Coast Basin, where water levels continue to rise on the order of about 4 feet per year presumably due to the reduction in pumping that has occurred there recently.

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 nested monitoring wells that were constructed by the USGS. **Table 3.2** presents some of the groundwater level measurements collected from the District's nested monitoring wells during the Water Year. **Figures 3.10** through **3.13** are annual hydrographs of selected wells for the Water Year 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 finished the Water Year seven feet higher than the start of the year.

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 figure 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 3 zones were generally similar and trended upward throughout the year, finishing 3 feet higher than at the start of 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); Artesia, Gage, Lynwood, Silverado and Sunnyside (2 zones) with depths ranging from 175 feet bgs to 1,450 feet bgs. Because the Central Basin Pressure Area has multiple confined aquifers and experiences heavy pumping seasonal cycles, water level fluctuations can be great. For example, in WY 2005-2006, water levels in Zone 3, representing the Silverado Aquifer, varied about 70 feet throughout the year, from a high of around sea level in May to a low of about 70 feet below sea level in September. 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. An abrupt decrease in water levels began in early May as seasonal pumping commenced (recall **Figure 3.4**). Water levels in Zone 3 finished the year 13 feet lower than at 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 Zones 1 and 2 track very similarly throughout the year, as do Zones 3 and 4. An approximate 35-foot difference in groundwater elevations 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 four feet higher than at the start of the year.

The results of groundwater level changes observed throughout the Water Year are illustrated on **Figure 3.14**, which is a water level change map. In the Central Basin, water levels were generally higher at the end of the year than at the start, with the exception of the southeastern corner of the District and a small portion near the San Gabriel Spreading Grounds. In the West Coast Basin water levels remained relatively flat on the western portion, rose slightly in the eastern portion, and dropped in the Gardena area between the Newport Inglewood Uplift and Charnock Fault, which act as barriers to groundwater flow. The maximum water level rise was observed at the District's Pico #1 monitoring well located in the northern part of the Montebello Forebay with an increase of nearly 11 feet. The greatest decrease was observed in the District's Long Beach #6 well located near the Long Beach Airport which had a drop of nearly 21 feet. Overall, the average water level increase across the District was 1.3 feet.

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 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 12,000 AF of water was added to storage in the CWCB during the WY 2005-2006.

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 Water Year 2005-2006 and purveyor's production wells for Water Years 2003-2006. Semi-annual groundwater samples from nested wells were submitted to a DHS-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 DHS based on results submitted over the past three years by purveyors for their Title 22 compliance. **Figures 4.1 through 4.31** 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 2005-2006. **Table 4.3** lists the water quality analytical results alphabetically by well location for the wells in the West Coast Basin during WY 2005-2006.

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 sampled during WY 2005-2006. 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. Several wells, grouped as "Other" on **Table 4.1**, exhibit a chemical character range different from Group A, B, and C ranges and represent 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 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 1,500 mg/L, which is the upper limit allowed for short-term use.

WRD nested monitoring well data for WY 2005-2006 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 174 mg/L in Lakewood #1 zone 1, to 2,480 mg/L in Whittier #1 zone 1. In the Central Basin, Silverado Aquifer zones in 15 out of 22 WRD nested monitoring wells had very low TDS concentrations, below 500 mg/L. The Silverado aquifer zones in 21 out of 22 Central Basin wells tested contained less than the DHS upper limit for TDS of 1,000 mg/L. Generally, TDS concentrations above 1000 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.

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 214 mg/L in Carson #1 zone 1, to 13,400 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. 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.

Figure 4.2 presents DHS water quality data for TDS in production wells across the CWCB during WYs 2003-2006. In the Central Basin, TDS generally ranged between 250 and 750 mg/L over most of the basin. 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 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.

4.3 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, incrusts well screens, and 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 8.2 mg/L (Whittier Narrows #1, zone 1). Iron was detected below the MCL in Silverado zones of 8 out of 22 nested wells. In zones above and below the Silverado, iron was detected below the MCL in 20 out of the 22 Central Basin wells. Iron was detected above the MCL in only one Silverado zone (Pico #1, zone 3), and in only two wells above or below the Silverado (Inglewood #2, zones 1 and 2; 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 1.2 mg/L (Inglewood #1, zone 1). 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). Five wells had iron concentrations above the MCL in zones above or below the Silverado.

Figure 4.4 presents DHS water quality data for iron in production wells across the CWCB during WYs 2003-2006. The data show elevated iron concentrations in many production wells throughout the CWCB and many purveyors opt to treat groundwater to remove the iron. 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 DHS for the West Coast Basin indicate roughly one-third of production wells, all located in the northern portion of the Basin, have iron concentrations exceeding the secondary MCL. Production wells in the southern and western portions of the West Coast Basin have iron concentrations below the 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 dissolve any subsurface iron casing, piping, etc. (the main materials of older production wells and pumps, and distribution systems), thus production wells and distribution piping may contribute iron to water supplies.

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 micrograms per liter (µg/L). Like iron, it is considered an essential nutrient for human health.

Manganese concentrations in the WRD nested monitoring wells exhibit widespread vertical and horizontal variations across the CWCB. In the Central Basin (**Figure 4.5**), manganese ranges from below the detection limit (numerous wells) to 700 µg/L (Pico #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 Aquifer, and the deeper zones. Four nested monitoring wells in the Central Basin had Manganese concentrations exceeding the MCL in the Silverado including Huntington Park #1, Commerce #1, Montebello #1, and Whittier #1.

In the West Coast Basin, manganese concentrations in nested monitoring wells ranged from below the detection limit (numerous wells) up to 1,100 µg/L (PM-4 Mariner zone 2). 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.

Figure 4.6 presents DHS water quality data for manganese in production wells across the CWCB during WYs 2003-2006. In the Central Basin data show a large number of wells having elevated manganese concentrations with 60 out of 270 production wells 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 production wells 17 out of 31 production wells tested had concentrations of manganese exceeding the MCL. The wells tend to be somewhat clustered in the northern portion of the basin.

4.5 NITRATE

DHS Primary MCLs limit two forms of nitrogen, nitrite and nitrate, in drinking water. 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. These constituents are of concern because they 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, below regulatory and permitted levels are present in recycled water and may contribute nitrate in 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.

Figure 4.7 presents nitrate (as nitrogen) water quality data for nested monitoring wells in the CWCB during WY 2005-2006. In the Central Basin, nitrate (as nitrogen) concentrations ranged from below the detection limit (numerous wells) to 13 mg/L (Los Angeles #1 zone 5). Nested monitoring wells in the 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, and Cerritos #2 show detectable concentrations in one or more of the middle zones, which are directly down the flow path from the spreading grounds, however 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, Whittier #1, and La Mirada #1. These shallow occurrences of nitrate, away from the spreading grounds, 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 30 mg/L (Chandler #3, zone 2). Concentrations exceeding the nitrate MCL included the shallowest zones of Chandler #3, Inglewood #1 and Gardena #1. A detection below the MCL in the shallowest zone at Hawthorne #1 was 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 DHS water quality data for nitrate in production wells across the CWCB during WYs 2003-2006. Detectable concentrations below the MCL were generally located in the vicinity and downgradient of the San Gabriel River and Rio Hondo Spreading Grounds of the Montebello Forebay, and in several scattered locations in the northwestern portion of the Central Basin. Production wells in 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 exceeded in one production well in the CWCB during the 2003-2006 period. This well is located in the northeastern portion of the Los Angeles Forebay near a cluster of wells with detectable nitrate. Like the nitrate observed in the nested monitoring wells, nitrate in production wells may be attributable to local surface recharge from former agricultural activities prior to the extensive land 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 2005-2006. In the Central Basin total hardness ranged from 6.24 (Long Beach 1 zone 2) to 1,010 mg/L (Whittier #1 zone 1), while in the West Coast Basin, hardness ranged from 9 mg/L (Carson #2 zone 1) to 5,230 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 DHS water quality data for total hardness in production wells in the CWCB during WYs 2003-2006. Groundwater in the West Coast Basin has 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. DHS has established a Secondary MCL upper limit for sulfate at 500 mg/L. Sulfate is, however 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 2005-2006. In the Central Basin sulfate ranged from below the detection limit (numerous wells) to 1,373 mg/L (Whittier #1 zone 1), while in the West Coast Basin sulfate ranged from below the detection limit (numerous wells) to 790 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. Results show that Silverado zones at only two nested monitoring wells are impacted by sulfate greater than the MCL. These wells include Whittier #1, in an area of generally poor water quality, and PM-4 Mariner, which is impacted by sea water intrusion in the West Coast Basin.

Figure 4.12 presents DHS water quality data for sulfate in production wells in the CWCB during WYs 2003-2006. 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. 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 upper limit for chloride of 500 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.

Figure 4.13 presents water quality data for chloride in WRD nested monitoring wells in the CWCB during WY 2005-2006. In the Central Basin, chloride concentrations ranged from 5 mg/L (Cerritos #2 zone 3) to 689 mg/L (Whittier Narrows #1 zone 1). The Silverado aquifer zones of the Central Basin nested monitoring wells contain low to very low chloride concentrations, only one exceeds 250 mg/L at Whittier #1. In the West Coast Basin, chloride ranged from 14 (Gardena #2 zone 1) to 6,290 mg/L (PM-4 Mariner zone 2). Chloride concentrations exceeded the secondary upper MCL limit in the Silverado aquifer zones in four of the fifteen West Coast Basin nested wells, primarily due to seawater intrusion (Long Beach #3, Wilmington #1, Wilmington #2, and PM-4 Mariner) or from sources yet to be identified.

Figure 4.14 presents DHS water quality data for chloride in production wells in the CWCB during WYs 2003-2006. Chloride was not detected above the secondary upper MCL limit 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, concentrations ranged from 50 to 100 mg/L. In the West Coast Basin, available DHS 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 either by packed tower aeration or granular activated carbon treatment.

TCE was detected in six WRD nested monitoring well locations in the Central Basin and in four nested well locations in the West Coast Basin (**Figure 4.15**). In the Central Basin, TCE concentrations, ranged from below the detection limit (numerous wells) to 46 µg/L (Los Angeles #1 zone 5). Only one nested well location, South Gate #1, contained a detectable TCE concentration in the Silverado Aquifer, but that concentration was below the MCL. Four other locations (Los Angeles #1 zone 4, Huntington Park #1 zones 3 and 4, Commerce #1 zone 5, and Downey #1 zones 5 and 6) had detections of TCE in zones above the Silverado Aquifer. The detections in Los Angeles #1 zones 4 and 5 were above the MCL.

In the West Coast Basin, TCE concentrations ranged from below the detection limit (numerous wells) to 17 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 above the MCL was detected. Trace levels of TCE less than the MCL were detected in the Silverado zone at Westchester #1.

Figure 4.16 presents DHS water quality data for TCE in production wells across the CWCB during WYs 2003-2006. Nearly 300 wells were tested for TCE. The data show that over the past three years TCE has been detected in 58 production wells in the Central Basin. Twelve 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)

Perchloroethylene (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 carcinogen. The Primary MCL for PCE in drinking water is 5 µg/L. Through improper disposal practices, PCE has contaminated many groundwater basins. Like TCE, PCE is easily removed using packed tower aeration or granular activated carbon treatment.

During WY 2005-2006, PCE (**Figure 4.17**) was detected at eight nested well locations in the Central Basin and one well in the West Coast Basin. In the Central Basin, PCE ranged from below the detection limit (numerous wells) to 8.4 µg/L (Pico #2 zone 3), all from nested wells within or near the vicinity of the Montebello and Los Angeles forebays. At well South Gate #1, PCE was detected above the MCL in the Silverado Aquifer. At Downey #1 and South Gate #1, PCE was detected below the MCL in the Silverado Aquifer. South Gate #1 and Whittier Narrows #1 show PCE detected below the MCL in a zone below the Silverado Aquifer. At Huntington Park #1, PCE was detected below the MCL in zones 3 and 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 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 DHS water quality data for PCE in production wells across the CWCB during WYs 2003-2006. In the Central Basin, PCE was detected in 67 production wells. Fourteen of the 67 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 production wells in the southern 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, MTBE, total organic carbon (TOC), apparent color, and perchlorate. Studies have included focused sampling of WRD nested monitoring wells and evaluation of DHS 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, requires 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 became 10 µg/L, effective January, 2006. The DHS is required to establish a standard equal to or more stringent than the EPA standard. In establishing the new statewide standard, the DHS will consider not only possible adverse health effects from exposure to this constituent but also, as required by statute, technical, and economic feasibility. Studies have shown that treatment to remove arsenic to acceptable levels is technically feasible. However, the arsenic then becomes a potential hazardous waste. It is uncertain if arsenic residuals can be properly disposed of at acceptable costs.

Health and Safety code Section 116361 required the DHS to adopt a new arsenic MCL by June 30, 2004 and required the Office of Environmental Health Hazard Assessment (OEHHA) to establish a new Public Health Goal (PHG) by December 31, 2002. Also, new language concerning the health effects of ingesting water with arsenic is required in Consumer Confidence Reports as of July 1, 2003. OEHHA announced the final PHG of 0.004 µg /L in April 2004. DHS is proceeding with the regulatory process to establish an MCL at a level as close as is technically and economically feasible to the PHG, and at the same or lower level than the federal MCL.

Arsenic is an element that occurs naturally in the earth's crust. 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 ninety percent of commercial arsenic is used as 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 carcinogenic 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 2005-2006. In the Central Basin arsenic concentrations ranged from non-detectable (numerous wells) to 41 µg/L in the shallowest zone at Cerritos #1 zone 6. Arsenic concentrations greater than the revised Federal MCL in the Central Basin were found at 7 out of 22 nested wells. Arsenic concentrations exceeding the revised MCL in the Silverado aquifer zones were found only at Cerritos #1, located in the eastern portion of the District. Overall the distribution of arsenic appears to be similar to the distribution of iron and manganese in the Central Basin with somewhat lower concentrations near the Forebays and higher concentrations away from the Montebello and Los Angeles Forebays.

In the West Coast Basin arsenic was not detected above the new MCL in the Silverado Aquifer. The deepest zone in Gardena #1, below the Silverado Aquifer, had an arsenic concentration of 205 µg/L, exceeding the MCL.

Figure 4.20 presents DHS water quality data for arsenic in production wells across the CWCB during WYs 2003-2006. Ten production wells in the Central Basin contained arsenic concentrations above the revised MCL. Many other production wells in the Central Basin contained arsenic at concentrations between 5 and 10 µg/L. Arsenic did not exceed the revised 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. This is based on 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 the level of carcinogenicity of ingested chromium 6.

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 percent 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 DHS and OEHHA, the National Toxological 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. DHS has added chromium 6 to its list of Unregulated Chemicals Requiring Monitoring (UCRM) in production wells.

Health and Safety Code Section 116365.5 required DHS to adopt a chromium 6 MCL by January 1, 2004. However, OEHHA has not yet issued a new draft chromium 6 PHG, and therefore, DHS has 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 one Central Basin nested wells. Total chromium was not detected above the MCL in the West Coast Basin but trace levels of total chromium were detected in one or more zones of all nested wells in the West Coast Basin.

Figure 4.22 presents DHS water quality data for total chromium in production wells across the CWCB during WYs 2003-2006. 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 38 production wells in the Central Basin contained detectable total chromium below the MCL. Total chromium was not detected in any of the production wells tested in the West Coast Basin.

Figure 4.23 presents hexavalent chromium water quality data for WRD nested monitoring wells. Most WRD nested monitoring wells have been sampled twice for hexavalent chromium since early 1998. Most zones contained hexavalent chromium below the Preliminary Health Goal of 0.2 µg/L. However, in the northern portion of the Central Basin, hexavalent chromium was detected at concentrations ranging from 0.2 to 30 µg/L. All of the detected concentrations were below the current MCL for total chromium and as discussed above, an MCL has not been established for hexavalent chromium. In the Los Angeles #1, Huntington Park #1, Commerce #1, Downey #1, Rio Hondo #1, Pico #1, and Whittier #1 wells, hexavalent chromium was detected in zones above the Silverado Aquifer. In Los Angeles #1, South Gate #1, Downey #1, Rio Hondo #1, Pico #2, Cerritos #2, Norwalk #1, Long Beach #1, Long Beach #2, and Long Beach #6, hexavalent chromium was detected in zones within and/or below the Silverado Aquifer. In the West Coast Basin, hexavalent chromium was detected below the MCL for total chromium in the shallowest zones of Inglewood #1, Gardena #1, and Chandler #3. Hexavalent chromium below the MCL was detected in the lowest zones at Westchester #1, Long Beach #3, and Long Beach #8.

As new wells are added to the WRD nested monitoring well network, samples will be collected for hexavalent chromium analysis to update the special study results. WRD will report these updates in subsequent Regional Groundwater Monitoring Reports.

Figure 4.24 presents WYs 2003-2006 DHS water quality data for hexavalent chromium in a limited number production wells across the CWCB. n reported in over 127 production wells in the Central Basin and West Coast Basins. Detections of hexavalent chromium were observed in 9 Central Basin wells, all below the MCL for total chromium. Hexavalent chromium was not detected in any of the West Coast Basin production wells.

4.11.3 Methyl Tert-Butyl Ether (MTBE)

Methyl tert(iary) butyl ether (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. Animal tests have shown MTBE to be carcinogenic. Effective May 17, 2000, a primary MCL of 13 μg/L was established by DHS. 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 4.25 presents MTBE water quality data for WRD nested monitoring wells during WY 2005-2006. MTBE was detected in one of the WRD nested monitoring wells. In the shallowest zone at Wilmington #1, MTBE was detected below the primary MCL in both the spring and fall 2006 samples. MTBE will be watched closely in the future in WRD nested monitoring wells.

Figure 4.26 presents DHS water quality data for MTBE in production wells across the

CWCB during WYs 2003-2006. In the Central Basin, MTBE was detected in one production well located in the Los Angeles Forebay. The well has been out of production since the MTBE was detected. MTBE was not detected in any West Coast Basin production wells during the reporting period.

4.11.4 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 15 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 is naturally occurring 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 4.27 presents TOC water quality data for WRD nested monitoring wells during WY 2005-2006. In the Central Basin, TOC was detected in multiple zones of all 22 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. Only five wells in the Central Basin have zones with TOC greater than 5 mg/L; including the two deepest zones at Long Beach #6, the deepest zone at Long Beach #2, the deepest two zones at Inglewood #2, 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 five of the 15 West Coast Basin production wells tested.

Figure 4.28 presents limited DHS water quality data for TOC in production wells across the CWCB during WYs 2003-2006. During the three-year period only 66 wells were tested for TOC. Only 14 of the 66 wells tested below the detection limit for TOC. Most of the wells contained TOC at concentrations ranging from less than 1 mg/L to 5 mg/L and were not limited to any specific area..

4.11.5 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 effectively treated and served, however treatment is relatively expensive.

Figure 4.29 presents apparent color water quality data for WRD nested monitoring wells in the CWCB during WY 2005-2006. Apparent color is present above the MCL in the deepest zones of eighteen 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 4.30 presents DHS water quality data for apparent color in production wells across the CWCB during WYs 2003-2006. These data indicate that colored groundwater is not a widespread, but only a localized problem in the basins. Most production wells tested below the MCL. Locally in the Long Beach, Inglewood, La Mirada/Norwalk, Pico Rivera and Los Angeles areas, several wells did test above the MCL for apparent color; some water purveyors in those areas have treatment systems operating to remove color from the groundwater.

4.11.6 Perchlorate

Perchlorate is the primary ingredient in rockets, missiles, road flares, and fireworks. It also has widespread use in air bag inflators, electronics, electroplating, lubricating oils, and the production of paints and enamels. Studies show that perchlorate can impact the proper functioning of the thyroid gland by inhibiting the uptake of iodide, and can cause a decrease in the production of hormones necessary for normal growth, development, and metabolism.

DHS established an action level of 18 µg/L in 1997, but revised it to 4 µg/L on January 18, 2002 based on the results of more current studies. OEHHA proposed a draft PHG of 2 to 6 µg/L in December 2002. On March 12, 2004, OEHHA issued a final PHG of 6 µg/L. DHS also revised the notification level to 6 µg/L. Health and Safety Code Section 116275 required DHS to adopt a MCL for perchlorate by January 1, 2004. DHS issued a draft MCL of 6 µg/Lin November 2006.

Figure 4.31 presents perchlorate water quality data for WRD nested monitoring wells in the CWCB during 1998-2005. The longer time period was used because perchlorate is only tested the first two sampling events at a new nested monitoring well and not tested twice per year as are most other constituents in this report. Perchlorate has been detected above the NL in two Central Basin nested monitoring wells. At Huntington Park #1, perchlorate was detected above the NL above the Silverado Aquifer. At Downey #1, perchlorate was detected above the NL within the Silverado Aquifer. Perchlorate is present below the NL in three other Central Basin nested monitoring wells including Commerce #1, South Gate #1, and Los Angeles #1. In the West Coast Basin, perchlorate was detected below the NL at three wells; the shallowest zones of Lomita #1, Chandler #3, and Gardena #1.

SECTION 5
SUMMARY OF FINDINGS

This Regional Groundwater Monitoring Report was prepared by WRD to report on the groundwater conditions in the CWCB during the WY 2005-2006. 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 own Leo J. Vander Lans water treatment facility.
- At the Montebello Forebay, 33,229 AF of imported water was conserved for replenishment during WY 2005-2006. A total of 42,022 AF of recycled water was conserved for spreading in the Montebello Forebay. A total of 14,298 AF of imported water was injected to the seawater barriers. A total of 6,620 AF of recycled water was purchased for injection into the seawater barriers. Total artificial replenishment was 96,169 AF for WY 2005-2006.
- Groundwater production in the CWCB was 227,744 AF for Water Year 2005-2006. 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 screened. The head differences in the WRD nested monitoring wells reflect both hydrogeologic and pumping conditions in the CWCB. Vertical head differences between 1 and 60 feet occur between zones above and within the producing zones. The greatest head differences tend to occur in the Long Beach area of the Central Basin and 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 increases in water levels, up to 40 feet in portions the Central Basin and generally stable to slightly increasing levels in the West Coast Basin during WY 2005-2006. On average, water levels increased in the unconfined Montebello Forebay area about and in the Los Angeles Forebay from 1 to 10 feet during WY 2005-2006. Elsewhere in the confined portions of the deeper aquifers of the basin water levels generally increased 1 to 10 feet except in the Long Beach area where levels dropped up to 21 feet during WY 2005-2006. Overall, the change in groundwater storage for the CWCB was calculated at a gain of approximately 12,000 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 both Colorado River and State Project Water remain below their respective MCLs. Meanwhile, TCE and PCE have not been detected in either water source.
- The water quality associated with key constituents in recycled water used at the Montebello Forebay Spreading Grounds also remains excellent and is carefully monitored and controlled to show little variation over time.
- Stormwater samples are occasionally collected and analyzed for water quality parameters. Samples collected recently show that average stormwater TDS concentrations and hardness are lower than most other sources of replenishment water.
- Based on the data obtained from the WRD nested monitoring wells during WY 2005-2006, 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 174 mg/L to 2,480 mg/L, and in the West Coast Basin from 214 mg/L to 13,400 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 8.2 mg/L, and in the West Coast Basin from non-detectable to 1.2 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 700 µg/L, and in the West Coast Basin from non-detectable to 1,100 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 13 mg/L, and in the West Coast Basin from non-detectable to 30 mg/L. Concentrations approaching or exceeding the 10 mg/L MCL 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. DHS data indicates that none of the CWCB production wells tested for nitrate above the MCL during WYs 2003-2006.
- TCE was not detected in the Silverado Aquifer in the WRD wells sampled, with the exception of South Gate #1. During the current reporting period, concentrations in nested monitoring wells in the Central Basin ranged from non-detectable to 46 µg/L, and in the West Coast Basin from non-detectable to 17 µg/L. DHS data indicate that TCE was detected in 58 production wells in the Central Basin during WYs 2003-2006, 12 out of the 58 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 eight WRD nested monitoring wells in the Central Basin and none in the West Coast Basin. PCE was detected in the Silverado Aquifer in three of the WRD wells sampled. During the current reporting period, concentrations in the

Central Basin ranged from non-detectable to 8.4 µg/L. DHS data indicate that PCE was detected in 67 production wells in the Central Basin during WYs 2003-2006. A total of 14 out of the 67 detections exceeded the MCL for PCE. PCE was not detected in any of the West Coast Basin production wells.

- EPA has adopted a new arsenic standard for drinking water, decreasing the former MCL of 50 µg/L to 10 µg/L. Enforcement of the MCL began in 2006. WRD nested monitoring wells indicate that arsenic concentrations in the southeast portion of the Central Basin can exceed the pending MCL. Nine production wells, all in this portion of the Central Basin, have arsenic concentrations exceeding the pending MCL of 10 µg/L. Arsenic was not detected above the MCL in any of the West Coast Basin production wells.
- Chromium, including hexavalent chromium, was detected above the MCL in groundwater samples from one WRD nested monitoring well, and three production wells in the vicinity of the Montebello and Los Angeles Forebay areas. Additional monitoring wells and production wells contained detectable chromium concentrations below the MCL. Some of the detections are in the deep aquifers including the Silverado and Sunnyside. DHS data for hexavalent chromium in groundwater from production wells are reasonably consistent with data for nested monitoring wells.
- MTBE was detected below the MCL in one nested monitoring well in the West Coast Basin and one production well in the Central Basin.
- Total organic carbon and apparent color are being monitored and studied in relation to use of recycled water for artificial recharge and future development of potential groundwater production from deeper portions of the CWCB than have typically been utilized in the past.
- Perchlorate was detected in five WRD nested monitoring wells. Perchlorate was not detected in West Coast Basin nested monitoring wells.
- 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 WY 2006-2007 are listed below.

- WRD will continue to maximize recycled water use at the Montebello Forebay Spreading Grounds without exceeding regulatory limits, because recycled water is a high quality reliable, and relatively low-cost replenishment water source.
- 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 permits and to track subsurface movement of the recycled water front.
- 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 has increased in the past several years as additional barrier wells injection was utilized to further combat seawater intrusion. Injection quantities at the West Coast Barrier have been down for several years due to operational issues but it is anticipated that planned injection quantities will resume in 2006-07. The Alamitos Gap Barrier is expected to remain at historical levels. WRD will work with the pumpers over the next year to find solutions to reduce the injection water demands and/or high costs. Basin management alternatives including Aquifer Storage and Recovery (ASR) projects, pipeline construction, and other conjunctive use projects and programs will be explored to find solutions to 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 it's network of nested monitoring wells to get a better understanding of groundwater levels and groundwater quality. Four new locations, three in the Montebello Forebay and one in the Central Basin pressure area, will be completed in 2006-07. Each year, WRD Staff evaluate the need to fill data gaps in the water level data, water quality data, and hydrogeologic conceptual model with additional geologic data provided from 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 and the pumpers such as TCE, PCE, arsenic, hexavalent chromium, MTBE, perchlorate, and apparent color. New chemicals of concern which have not been comprehensively monitored include pesticides, n-nitrosodimethylamine (NDMA), 1,4-Dioxane, tert-butyl alcohol (TBA), pharmaceuticals and others.
- 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. Central and West Coast Basin Groundwater Contamination Forum with key stakeholders including EPA, DTSC, RWQCB, DHS, USGS, and various cities. Stakeholders meet regularly (meetings are held 3 – 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 develop optimal methods for addressing contamination. WRD developed a list of high-priority contaminated groundwater sites within the District. Currently, the list includes approximately 36 sites across the CWCB.
- In 2003, WRD developed a scope of work with the Los Angeles County Department of Health Services (LACDHS) 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 staff 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
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TABLES

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
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
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

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
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
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

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 #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
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
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
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

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
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
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 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 and Spreading Grounds)				Total Recharge			
	Imported	Recycled	Local	Total	Imported	Recycled	Local	Total	Imported	Recycled	Local	Total
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	64,344	2,501	8,616	75,461	69,995	4,867	4,481	79,343	134,339	7,368	13,097	154,804
1965/66	62,067	9,984	31,317	103,368	32,125	3,129	14,433	49,687	94,192	13,113	45,750	153,055
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	65,925	16,299	27,885	110,109	12,402	1,975	11,875	26,252	78,327	18,274	39,760	136,361
1968/69	13,018	6,105	69,055	88,178	4,895	7,772	50,106	62,773	17,913	13,877	119,161	150,951
1969/70	25,474	13,475	24,669	63,618	35,164	3,683	28,247	67,094	60,638	17,158	52,916	130,712
1970/71	41,913	11,112	24,384	77,409	21,211	8,367	21,735	51,313	63,124	19,479	46,119	128,722
1971/72	15,413	12,584	10,962	38,959	14,077	4,959	6,218	25,254	29,490	17,543	17,180	64,213
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	40,593	9,574	18,421	68,588	34,271	10,516	8,544	53,331	74,864	20,090	26,965	121,919
1974/75	29,173	11,359	16,542	57,075	32,974	8,084	10,360	51,418	62,147	19,443	26,902	108,493
1975/76	14,783	8,371	10,503	33,657	19,611	10,297	7,763	37,671	34,394	18,668	18,266	71,328
1976/77	11,349	3,195	7,753	22,297	2,548	15,707	5,165	23,420	13,897	18,902	12,918	45,717
1977/78	19,112	7,424	53,086	79,622	11,249	9,938	74,967	96,154	30,361	17,362	128,053	175,776
1978/79	27,486	6,233	36,659	70,377	15,143	14,367	17,250	46,760	42,629	20,600	53,909	117,137
1979/80	11,229	8,082	54,416	73,726	6,602	14,549	39,753	60,904	17,831	22,631	94,169	134,630
1980/81	43,040	9,177	38,363	90,581	13,823	16,283	8,860	38,966	56,863	25,460	47,223	129,547
1981/82	19,299	9,667	37,730	66,696	11,239	19,143	8,283	38,665	30,538	28,810	46,013	105,361
1982/83	3,203	7,512	89,153	99,868	5,975	9,419	36,893	52,287	9,178	16,931	126,046	152,155
1983/84	18,815	9,647	38,395	66,857	912	17,371	18,667	36,950	19,727	27,018	57,062	103,807
1984/85	33,364	7,848	23,614	64,826	3,879	12,930	10,620	27,429	37,243	20,778	34,234	92,255
1985/86	8,128	9,234	51,913	69,275	10,927	16,806	13,045	40,778	19,055	26,040	64,958	110,053
1986/87	-	12,234			64,575	87,921			64,575	100,155	16,700	181,431
1987/88	16,105	12,560	22,508	51,173	6,529	24,678	22,125	53,332	22,634	37,238	44,633	104,505
1988/89	-	26,568			63,216	25,981			63,216	52,548	24,200	139,964
1989/90	7,079	25,629			72,196	24,560			79,275	50,188	26,400	155,864
1990/91	33,320	20,927			34,215	33,045			67,536	53,972	18,300	139,808
1991/92	28,695	19,156			58,381	28,679			87,077	47,835	71,000	205,911
1992/93	4,306	18,526			26,596	32,041			30,902	50,567	107,700	189,169
1993/94	7,599	26,654			25,893	27,361			33,492	54,015	36,800	124,307
1994/95	3,827	16,397			25,227	22,861			29,054	39,258	92,100	160,411
1995/96	12,304	24,154	41,514	77,972	3,899	26,502	13,709	44,110	16,203	50,656	55,223	122,082
1996/97	12,652	17,899	33,658	64,209	4,732	28,085	17,715	50,532	17,384	45,984	51,373	114,741
1997/98	889	14,984	52,958	68,831	-	19,594	32,580	52,174	889	34,578	85,538	121,005
1998/99	-	23,102	14,840	37,942	-	18,099	11,990	30,089	-	41,201	26,830	68,031
1999/00	43,441	16,093	5,700	65,234	1,596	27,049	15,036	43,681	45,037	43,142	20,736	108,915
2000/01									23,451	43,778	42,290	109,519
2001/02				72,874				47,597	41,268	60,596	18,607	120,471
2002/03				83,757				39,606	22,366	42,640	58,357	123,363
2003/04				64,399				38,512	27,520	44,924	30,467	102,911
2004/05				125,487				77,835	25,296	29,503	148,523	203,322
2005/06				86,222				49,400	33,229	42,022	60,377	135,628

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.

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	820		820	4,130	2,200		2,200	29,870		29,870	36,200
1971/72	4,060		4,060	930		930	4,990	9,550		9,550	26,490		26,490	41,030
1972/73	4,300		4,300	880		880	5,180	8,470		8,470	28,150		28,150	41,800
1973/74	6,140		6,140	1,150		1,150	7,290	7,830		7,830	27,540		27,540	42,660
1974/75	4,440		4,440	720		720	5,160	5,160		5,160	26,430		26,430	36,750
1975/76	4,090		4,090	570		570	4,660	4,940		4,940	35,220		35,220	44,820
1976/77	4,890		4,890	880		880	5,770	9,280		9,280	34,260		34,260	49,310
1977/78	4,020		4,020	830		830	4,850	5,740		5,740	29,640		29,640	40,230
1978/79	4,220		4,220	900		900	5,120	5,660		5,660	23,720		23,720	34,500
1979/80	3,560		3,560	580		580	4,140	4,470		4,470	28,630		28,630	37,240
1980/81	3,940		3,940	530		530	4,470	3,550		3,550	26,350		26,350	34,370
1981/82	4,540		4,540	390		390	4,930	4,720		4,720	24,640		24,640	34,290
1982/83	3,270		3,270	1,940		1,940	5,210	6,020		6,020	33,950		33,950	45,180
1983/84	2,440		2,440	1,400		1,400	3,840	7,640		7,640	28,000		28,000	39,480
1984/85	3,400		3,400	1,450		1,450	4,850	7,470		7,470	25,210		25,210	37,530
1985/86	3,410		3,410	1,860		1,860	5,270	6,160		6,160	20,260		20,260	31,690
1986/87	4,170		4,170	2,750		2,750	6,920	6,230		6,230	26,030		26,030	39,180
1987/88	3,990		3,990	2,170		2,170	6,160	7,050		7,050	24,270		24,270	37,480
1988/89	3,900		3,900	1,680		1,680	5,580	5,220		5,220	22,740		22,740	33,540
1989/90	4,110		4,110	2,000		2,000	6,110	5,736		5,736	20,279		20,279	32,125
1990/91	4,096		4,096	1,818		1,818	5,914	7,756		7,756	16,039		16,039	29,709
1991/92	4,172		4,172	1,553		1,553	5,725	6,894		6,894	22,180		22,180	34,799
1992/93	3,350		3,350	1,567		1,567	4,917	4,910		4,910	21,516		21,516	31,343
1993/94	2,794		2,794	1,309		1,309	4,103	5,524		5,524	15,482		15,482	25,109
1994/95	2,883		2,883	889		889	3,772	4,989		4,989	14,237	1,480	15,717	24,478
1995/96	3,760		3,760	2,010		2,010	5,770	5,107		5,107	12,426	4,170	16,596	27,473
1996/97	4,015		4,015	1,751		1,751	5,766	5,886		5,886	11,388	6,241	17,629	29,280
1997/98	3,677		3,677	1,503		1,503	5,180	3,771		3,771	8,173	8,308	16,481	25,432
1998/99	4,012		4,012	1,689		1,689	5,701	4,483		4,483	10,125	6,973	17,098	27,282
1999/00	4,028		4,028	1,709		1,709	5,737	6,010		6,010	11,172	7,460	18,632	30,379
2000/01	3,710		3,710	1,923		1,923	5,633	3,923		3,923	13,988	6,838	20,826	30,382
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	4,484	8,056		8,056	10,419	6,192	16,611	29,151
2003/04	3,876		3,876	2,092		2,092	5,968	6,089		6,089	9,304	3,669	12,973	25,030
2004/05	2,870		2,870	1,685		1,685	4,555	8,557		8,557	4,548	3,920	8,468	21,580
2005/06	1,042	921	1,963	330	254	584	5,094	7,259	1,450	8,709	5,997	4,249	10,246	24,049

(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, WATER YEAR 2004-2005

Constituent	Units	Treated Colorado River/State Project Water[a] 2005	Untreated Colorado River Water[b] 2005	Untreated State Project Water[b] 2005	West Basin MWD WRP[c] 2005	Whittier Narrows WRP[b] 2005	San Jose Creek East WRP[b] 2005	San Jose Creek West WRP[b] 2005	Pomona WRP[b] 2005	Stormwater[d] 2004-2005
Total Dissolved Solids (TDS)	mg/L	445/275	633	261	56	523	632	527	538	255
Hardness	mg/L	181/110	307	111	31	178	198	190	204	148
Sulfate	mg/L	145/46	251	41	3.6	91	124	78	61	50
Chloride	mg/L	86/71	87	65	6.2	98	159	105	135	43
Nitrogen (Nitrate as N)	mg/L	0.47/0.61	ND	0.63	0.1	5.37	3.45	3.92	2.15	1.5
Iron	mg/L	ND/ND	ND	ND	ND	<0.05	0.08	<0.06	<0.05	0.263
Manganese	ug/L	ND/ND	ND	ND	ND	<7	30	10	<7	19
Trichloroethylene (TCE)	ug/L	ND/ND	ND	ND	ND	<0.5	<0.5	<0.5	<0.5	NA
Tetrachloroethylene (PCE)	ug/L	ND/ND	ND	ND	0.3	<0.5	<0.5	<0.6	<0.5	NA
Total Organic Carbon (TOC)	mg/L	2.2/2.2	3	3	0.11	6.63	7.95	8	9.6	15.23
Perchlorate	ug/L	ND/ND	4.4	ND	NA	NA	NA	NA	NA	NA

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

c = Used at the West Coast Basin Barrier

d = Average concentration data from LACDPW, for samples collected from San Gabriel River Station 12 WY 2004-2005

Sources of data:
2004 Water Quality Report to MWD Member Agencies
Montebello Forebay Groundwater Recharge annual report (CSDLAC, December 2005)
West Basin Water Recycling Facility Annual Report (West Basin MWD, 2005)
Los Angeles County Department of Public Works

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

TABLE 3.2
GROUNDWATER ELEVATIONS, WATER YEAR 2005-2006

	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6
Carson #1						Reference Point Elevation: 24.16
Depth of Well	990-1010	740-760	460-480	250-270		
Aquifer Name	Sunnyside	Silverado	Lynwood	Gage		
12/27/2005	-49.75	-48.98	-17.11	-15.59		
3/17/2006	-48.33	-47.37	-16.37	-15.06		
3/28/2006	-48.49	-47.48	-16.52	-14.96		
6/29/2006	-51.8	-50.48	-16.55	-15.56		
9/26/2006	-48.22	-47.39	-15.84	-14.24		
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	
12/27/2005	-39.87	-34.25	-33.98	-31.12	-29.07	
1/12/2006	-38.75	-33.02	-32.77	-30.12	-28.12	
3/24/2006	-38.21	-33.29	-32.95	-30.08	-28.04	
6/27/2006	-39.12	-33.83	-33.55	-30.65	-28.47	
8/10/2006	-38.67	-33.27	-33	-30.18	-28.07	
9/28/2006	-37.91	-32.6	-32.34	-29.57	-27.49	
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
10/25/2005	-29.08	-34.03	-30.38	13.83	18.13	18.18
12/28/2005	-9.7	-14.41	-14	18.22	21.34	21.38
3/27/2006	-6.79	-15.27	-12.4	21.78	23.64	23.61
3/31/2006	-6.22	-14.31	-11.5	22.13	23.74	23.89
6/29/2006	-28.56	-36.89	-28.55	18.06	20.8	20.74
9/26/2006	-37.18	-43.2	-34.67	15.31	19.09	19.1
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
12/29/2005	1.54	-3.99	-16.55	2.62	24.97	32.38
1/23/2006	4.49	-3.24	-13.33	5.15	26.03	33.08
2/1/2006	5.2	-4.95	-14.45	4.56	25.98	33.09
2/17/2006	5.52	-5.56	-16.83	3.09	25.95	33.21
3/30/2006	7.19	-3.39	-12.71	5.84	26.92	33.75
6/29/2006	0.37	-20.03	-22.26	-19.8	25.59	33.27
7/17/2006	-3.04	-23.38	-23.79	-1.17	25.13	33.02
9/26/2006	-9.42	-24.65	-26.48	-3.47	24.02	32.41
9/29/2006	-9.38	-24.65	-25.83	-3.05	24.08	32.42
Chandler #3						Reference Point Elevation: 153.2
Depth of Well	341-363	165-192				
Aquifer Name	Gage/Lynw/Silv	Gage/Lynw/Silv				
12/29/2005	-20.09	-20.05				
04/13/2006	-19.23	-19.08				
06/29/2006	-19.46	-19.34				
09/21/2006	-19.49	-19.19				
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	Sunnyside	Sunnyside	Silverado	Hollydale	Exposition/Gage
12/30/2005	58.32	61.04	57.8	30.13	29.64	57.4
3/31/2006	58.61	63.7	60.87	31.78	27.2	57.53
6/28/2006	59.54	65.52	62.15	32.17	29.11	58.29
9/30/2006	59.53	63.86	60.37	29.04	28.12	58.22
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	
12/27/2005	-23.05	-23	-8.41	2.33	3.79	
3/16/2006	-17.34	-17.31	-6.87	4.95	6.31	
6/27/2006	-36.64	-36.38	-8.33	2.38	4.48	
7/11/2006	-39.92	-39.65	-10.13	1.06	3.33	
9/20/2006	-48	-47.79	-13.25	-1.81	-0.27	
Downey #1						Reference Point Elevation: 97.21
Depth of Well	1170-1190	940-960	580-600	370-390	250-270	90-110
Aquifer Name	Sunnyside	Silverado	Silverado	Hollydale/Jefferson	*Gage*	Gaspur
12/28/2005	14.7	16.56	21.12	20.56	40.03	43.17
3/30/2006	21.22	20.93	23.61	21.88	41.08	43.93
6/27/2006	17.98	20.09	17.96	17.94	41	44.45
9/29/2006	12.8	14.43	14.37	15.06	40.83	44.62
Gardena #1						Reference Point Elevation: 80.79
Depth of Well	970-990	445-465	345-365	120-140		
Aquifer Name	Sunnyside	Silverado	Lynwood	Gage		
12/27/2005	-57.47	-118.13	-84.83	-14.55		
3/28/2006	-56.91	-119.18	-85.74	-13.87		
4/10/2006			-84.98	-13.76		
6/28/2006	-56.82	-89.28	-82.59	-13.59		
9/27/2006	-54.63	-126.27	-95.87	-13.29		

TABLE 3.2
GROUNDWATER ELEVATIONS, WATER YEAR 2005-2006

	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	
12/28/2005	-44.67	-53.62	-53.65	-23.5	-11.9	
1/2/2006	-44.34	-52.4	-52.42	-22.84	-11.57	
3/20/2006	-43.68	-54.96	-54.63	-19.78	-15.36	
4/3/2006	-43.53	-54.96	-55.01	-23.27	-11.3	
4/10/2006	-43.5	-54.79	-54.84	-23.19	-11.21	
6/28/2006	-43.43	-53.97	-54.02	-23.06	-11	
7/10/2006	-43.36	-53.55	-53.62	-22.78	-10.92	
9/25/2006	-42.47	-53.16	-53.11	-22.59	-10.84	
Hawthorne #1						Reference Point Elevation: 86.35
Depth of Well	910-950	710-730	520-540	400-420	240-260	110-130
Aquifer Name	Pico	*Sunnyside*	*Silverado*	Silverado	Lynwood	Gage
12/29/2005	-83.88	-12.26	-11.47	-11.34	-8	-0.99
3/29/2006	-82.71	-10.72	-9.88	-9.74	-6.81	-0.73
6/29/2006	-79.69	-10.71	-9.81	-9.7	-6.66	-0.43
9/25/2006	-90.82	-10.96	-10.14	-10.02	-6.99	-0.34
Huntington Park #1						Reference Point Elevation: 177.08
Depth of Well	890-910	690-710	420-440	275-295		
Aquifer Name	Silverado	Jefferson	Gage	Exposition		
12/27/2005	-27.7	-29.23	-27.48	15.04		
3/28/2006	-27.74	-28.39	-27.16	15.18		
6/28/2006	-26.32	-27.55	-26.26	14.47		
9/20/2006	-27.27	-28.1	-28.07	13.82		
9/30/2006	-26.78	-26.77	-27.41	14.16		
Inglewood #1						Reference Point Elevation: 110.56
Depth of Well	1380-1400		430-450	280-300	150-170	
Aquifer Name	Pico		Silverado	Lynwood	Gage	
12/29/2005	-35.42		-52.09	-3.42	2.14	
3/29/2006	-35.11		-51.05	-2.9	2.37	
6/28/2006	-34.72		-49.32	-2.43	2.71	
7/18/2006	-34.81		-48.25	-1.99	2.89	
9/28/2006	-34.22		-52.33	-2.73	2.87	
Inglewood #2						Reference Point Elevation: 217.33
Depth of Well	800-840	450-470	330-350	225-245		
Aquifer Name	Pico	Pico	Silverado	Lynwood		
12/29/2005	-24.65	-18.39	-7.4	-3.1		
3/29/2006	-24.24	-17.82	-7.38	-3.04		
6/28/2006	-24.03	-17.8	-7.44	-3.16		
9/27/2006	-24.15	-17.79	-7.44			
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
12/28/2005	-44.72	-38.6	-36.12	-18.79	-8.42	12.96
2/2/2006	-70.33	-46.86	-43.93	-16		
3/30/2006	-53.95	-39.04	-37	-14.89	-4.77	14.63
6/28/2006	-58.59	-45.9	-44.16	-16.66	-6.71	14.45
9/29/2006	-106.29	-67.17	-53.44	-22.57	-11.68	15.08
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	
10/25/2005	-7.28	-10.22	-18.4	-25.29	-15.51	
12/29/2005	10.08	6.36	0.19	-12.24	-1.54	
3/16/2006	19.37	18.14	7.43	-0.58	3.5	
6/26/2006	7.93	9.2	-13.41	-34.89	-10	
7/10/2006	3.99	5.52	-18.54	-38.53	-12.27	
9/26/2006	-9.93	-9.46	-21.93	-38.33	-14.63	
Lomita #1						Reference Point Elevation: 76.91
Depth of Well	1240-1260	700-720	550-570	400-420	220-240	100-120
Aquifer Name	Lower San Pedro	Silverado	Silverado	Silverado	Gage	Gage
12/29/2005	-31.31	-21.76	-20.93	-21.3	-19.13	-20.85
3/27/2006	-33.43	-20.9	-23.66	-21.99	-19.35	-22.91
6/29/2006	-31.04	-20.87	-20.06	-20.78	-18.17	-20.2
9/25/2006	-31.42	-21.7	-20.6	-20.95	-17.98	-20.61
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*
10/25/2005	-11.97	-13.67	-37.65	-30.87	-27.56	-7.15
12/27/2005	-0.94	-1.21	-16.64	-14.98	-12.95	1.13
2/2/2006	5.74	4.55	-4.63	-8.7	-8.2	1.45
3/27/2006	11.24	10.01	-8.19	-13.19	-13.26	-0.05
6/29/2006	-1.32	-4.03	-52.89	-34.07	-33.86	-7.63
9/20/2006	-19.46	-22.39	-68.35	-42.54	-39.97	-11.1

TABLE 3.2
GROUNDWATER ELEVATIONS, WATER YEAR 2005-2006

	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6
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	Gage	Gaspur
12/28/2005	-29.18	-24.15	-30.8	-7.02	1.19	2.48
3/28/2006	-13.91	-19.92	-32.88	-5.44	2.38	3.47
6/29/2006	-62.02	-28.66	-34.18	-6	2.6	3.94
8/22/2006	-61.61	-32.21	-34.72	-7.2	2.22	3.79
9/26/2006	-79.52	-35.31	-34.93	-7.67	1.79	3.41
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	
10/13/2005	-39.6	-50.73	-50.73	-50.98	2.35	
12/28/2005	-38.73	-48.48	-48.47	-48.7	2.9	
3/22/2006	-36.81	-47.12	-46.9	-47.21	1.09	
6/29/2006	-36.92	-50.48	-50.46	-50.59	0.92	
9/18/2006	-36.91	-46.91	-46.92	-47.18	1.62	
Long Beach #4						Reference Point Elevation: 9.52
Depth of Well	1200-1220	800-820				
Aquifer Name	Pico	Lower San Pedro				
12/29/2004	-41.7	-21.51				
04/12/2005	-40.01	-21.15				
06/28/2005	-38.59	-16.47				
09/26/2005	-38.5	-16.96				
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	Lower San Pedro	Sunnyside	Sunnyside	Silverado	Lynwood	Gage
12/28/2005	-9.96	-12.28	-12.33	-23.51	-23.47	-22.7
3/27/2006	3.14	0.52	0.41	-10.88	-10.86	-19.08
4/7/2006	4.5	2.29	2.36	-7.3	-7.39	-17.49
4/11/2006	5.09	3.25	3	-6.45	-6.45	-16.8
6/29/2006	-7.23	-28.6	-30.23	-86.71	-86.85	-28.22
7/11/2006	-10.85	-32.21	-33.77	-88.47	-88.62	-29.34
9/29/2006	-28.26	-51.96	-53.69	-112.18	-112.05	-33.52
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*	*Sunnyside*	Silverado	Silverado	Lynwood	Gage
11/3/2005	-19.73	-37.17	-47.64	-45.73	-45.34	2.17
12/28/2005	-19.5	-36.48	-46.39	-44.49	-44.15	2.33
1/23/2006	-19.35	-36	-43.84	-42.18	-41.83	2.51
3/16/2006	-18.89	-34.85	-43.69	-41.98	-41.59	2.49
6/29/2006	-18.41	-34.5	-46.45	-44.47	-44.01	1.57
9/25/2006	-18.41	-34.9	-44.58	-42.64	-42.21	2.77
Los Angeles #1						Reference Point Elevation: 173.63
Depth of Well	1350-1370	1080-1100	920-940	640-660	350-370	
Aquifer Name	Pico	Sunnyside	Silverado	Lynwood	Gage	
12/30/2005	-17.32	-20.61	-22.98	-28.22	-23.47	
3/31/2006	-16.22	-20.59	-23.11	-28.06	-23.91	
6/28/2006	-12.66	-19.58	-21.98	-27.18	-23.87	
9/20/2006	-17.56	-20.98	-22.85	-27.19	-24.17	
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	Sunnyside	Silverado	Lynwood	Gage	Exposition
12/29/2005	99.2	93.97	93.2	89.59	92.62	DRY
4/17/2006	108.61	107.47	107.05	103.32	95.62	100.07
6/28/2006	109.83	108.56	107.75	103.4	101.59	DRY
9/18/2006	108.9	105.27	105.45	101.05	102.49	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	
10/25/2005	39.92	4.8	17.24	3.71	1.26	
12/27/2005	45.21	12.8	22.8	8.42	4.79	
3/16/2006	51.42	22.58	31.8	12.19	7.69	
4/5/2006	53.38	24.32	33.71	13.02	9.52	
6/29/2006	49.85	19.92	32.06	8.91	6.71	
9/27/2006	40.76	5.53	21.12	5.92	4.39	
Pico #1						Reference Point Elevation: 181.06
Depth of Well	860-900	460-480	380-400	170-190		
Aquifer Name	Pico	Silverado	Silverado	*Gardena*		
12/27/2005	139.74	132.17	130.72	130.72		
3/28/2006	144.47	142.75	142.64	142.64		
6/29/2006	151.12	146.57	146.34	146.34		
9/29/2006	148.73	141.08	140.77	140.77		

TABLE 3.2
GROUNDWATER ELEVATIONS, WATER YEAR 2005-2006

	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6
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
12/19/2005	80.43	81.17	86.62	103.01	104.01	110.34
3/9/2006	91.13	93.13	96.43	107.78	108.63	113.76
3/22/2006	93.06	96.06	100.54	110.03	110.77	115.31
6/20/2006	93.32	92.96	100.71	110.82	110.61	118.12
7/27/2006	91.05	89.56	97.6	106.89	106.48	113.59
9/25/2006	87.36	86.44	94.09	105.96	106.05	111.15
PM-1 Columbia						Reference Point Elevation: 78.42
Depth of Well	555-595	460-500	240-280	160-200		
Aquifer Name	*Sunnyside*	Silverado	Lynwood	Gage		
12/27/2005	-9.9	-8.81				
3/28/2006	-9.31	-8.42				
6/26/2006	-8.91	-8.42				
9/29/2006	-8.81	-8.46				
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		
12/27/2005	-13.85	-11.24	-11.15	-11.15		
3/16/2006	-13.3	-10.71	-10.64	-10.62		
6/26/2006	-12.91	-10.13	-10.06	-10.04		
9/28/2006	-12.62	-9.98	-9.95	-9.93		
PM-4 Mariner						Reference Point Elevation: 97.7
Depth of Well	670-710	500-540	340-380	200-240		
Aquifer Name	*Sunnyside*	Silverado	Lynwood	Gage		
12/27/2005	-8.22	-6.89	-4.06	-4.01		
3/28/2006	-7.65	-6.38	-3.57	-3.52		
6/26/2006	-7.38	-6.2	-3.27	-3.24		
9/24/2006	-7.47	-6.35	-3.45	-3.39		
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
12/19/2005	73.19	71.28	70.57	62.43	72.22	76.14
3/9/2006	79.88	82.41	81.8	72.92	78.7	81.35
3/22/2006	83.64	86.89	86.21	77.81	83.28	85.48
6/20/2006	84.38	85.09	84.43	75.79	88.25	91.37
7/31/2006	83.86	84.44	83.7	75.17	85.82	89.12
8/7/2006	83.96	84.63	83.94	74.48	84.97	88.27
9/25/2006	81.37	79.68	78.91	70.3	81.84	85.26
South Gate #1						Reference Point Elevation: 90.96
Depth of Well	1440-1460	1320-1340	910-930	565-585	220-240	
Aquifer Name	*Pico*	*Sunnyside*	*Silverado*	*Lynwood*	Exposition	
1/4/2006	0.51	2.24	5.55	4.5	34.99	
3/28/2006	2.97	4.4	6.9	4.69	35.67	
6/27/2006	3.7	4.84	6.54	-1.86	35.86	
9/26/2006	3.61	1.3	2.78	-4.37	35.43	
Westchester #1						Reference Point Elevation: 124.27
Depth of Well	740-760	560-580	455-475	310-330	215-235	
Aquifer Name	Pico	*Sunnyside*	Silverado	Lynwood	Gage	
12/29/2005	-0.33	7.24	7.6	7.83	7.96	
3/10/2006	0.4	7.25	7.55	7.73	7.87	
3/29/2006	0.19	7.51	7.74	7.89	8.02	
6/27/2006	0.47	6.5	7.79	7.94	8.07	
9/25/2006	0.15	7.64	7.9	8.01	8.13	
Whittier #1						Reference Point Elevation: 217.17
Depth of Well	1180-1200	920-940	600-620	450-470	200-220	
Aquifer Name	Pico	Sunnyside	Silverado	Jefferson	Gage	
10/28/2005	121.25	121.33	115.03	113.53	201.24	
12/27/2005	121.72	121.72	115.36	113.87	200.91	
3/30/2006	122.95	122.89	117.04	115.71	201.1	
6/28/2006	123.99	124.02	117.97	116.49	201.1	
9/13/2006	124.85	124.63	117.85	116.26	200.69	
Willowbrook #1						Reference Point Elevation: 96.21
Depth of Well	885-905	500-520	360-380	200-220		
Aquifer Name	*Sunnyside*	Silverado	Lynwood	Gage		
12/28/2005	-34.1	-29.5	-22.82	-22.4		
3/28/2006	-34.5	-28.75	-21.93	-21.54		
6/27/2006	-29.68	-28.41	-21.84	-21.25		
7/20/2006	-36.71	-29.88	-22.58	-21.88		
8/28/2006	-40.34	-30.29	-22.99	-22.4		
9/21/2006	-32.68	-29.41	-22.07	-21.39		

TABLE 3.2
GROUNDWATER ELEVATIONS, WATER YEAR 2005-2006

	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6
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	
12/28/2005	-47.75	-48.07	-48.17	-18.49	-15	
3/15/2006	-45.22	-45.53	-45.66	-18.19	-14.99	
6/29/2006	-49.67	-49.95	-49.75	-18.92	-15.41	
8/24/2006	-47.39	-47.78	-47.75	-17.62	-14.2	
9/25/2006	-46.97	-47.33	-47.4	-17.06	-13.62	
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	
12/27/2005	-35.65	-31.63	-27.53	-26.84	-7.87	
3/28/2006	-37.85	-30.19	-26.59	-26.12	-7.35	
6/28/2006	-36.01	-31.64	-27.51	-26.84	-7.18	
9/26/2006	-34.29	-30.05	-25.27	-24.63	-6.67	
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
3/20/2006	185.86	184.69	187.43	192.85	193.72	194.72
9/20/2006	172.91	175.24	179.14	187.89	188.75	190.03
				ZONE 7	**ZONE 8**	**ZONE 9**
				233.5-243	163-173	95-104.5
				Jefferson	Gardena	Gaspur
3/20/2006				194.69	194.67	193.62
9/20/2006				189.87	189.82	190.2

TABLE 4.1
MAJOR MINERAL WATER QUALITY GROUPS

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

TABLE 4.2
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2005/2006

Water Quality Constituents	Units	MCL	MCL Type	Cerritos #1 Zone 1 03/31/06	Cerritos #1 Zone 1 08/22/06	Cerritos #1 Zone 2 03/31/06	Cerritos #1 Zone 2 08/22/06	Cerritos #1 Zone 3 03/31/06	Cerritos #1 Zone 3 08/22/06	Cerritos #1 Zone 4 03/31/06	Cerritos #1 Zone 4 08/22/06	Cerritos #1 Zone 5 03/31/06	Cerritos #1 Zone 5 08/22/06	Cerritos #1 Zone 6 03/31/06	Cerritos #1 Zone 6 08/22/06
General Mineral															
Total Dissolved Solid (TDS)	mg/l	1000	S	284	286	250	274	336	342	278	298	272	268	276	284
Cation Sum	meq/l			4.9	5	4.5	4.7	5.5	5.6	4.9	5	4.6	4.8	4.7	4.9
Anion Sum	meq/l			4.8	4.1	4.4	3.8	5.4	4.7	4.8	4.1	4.2	3.8	4.5	4.1
Iron, Total, ICAP	mg/l	0.3	S	ND	ND	ND	ND	ND	0.024	0.077	0.079	0.052	0.042	0.062	0.066
Manganese, Total, ICAP/MS	ug/l	50	S	24	26	29	32	42	47	**72**	**81**	**110**	**110**	**130**	**140**
Turbidity	NTU	5	S	0.1	0.1	0.1	0.25	0.15	0.2	0.25	2.4	0.2	0.2	0.25	0.25
Alkalinity	mg/l			160	131	152	127	169	137	176	141	175	141	184	161
Boron	mg/l			0.088	0.091	0.068	0.079	0.092	0.098	0.091	0.1	0.092	0.099	0.08	0.088
Bicarbonate as HCO3,calculated	mg/l			190	160	180	150	210	170	210	170	210	170	220	200
Calcium, Total, ICAP	mg/l			36	35	35	35	44	44	46	46	39	39	47	47
Carbonate as CO3, Calculated	mg/l			3.1	2.1	2.3	ND	2.7	ND	3.4	ND	3.4	ND	3.6	ND
Hardness (Total, as CaCO3)	mg/l			110	110	110	110	140	140	160	160	140	140	160	160
Chloride	mg/l	500	S	16	14.7	13	13	21	20.7	13	12.7	ND	10.5	10	9.92
Fluoride	mg/l	2	P	0.24	0.29	0.32	0.38	0.32	0.38	0.49	0.6	0.42	0.51	0.31	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			0.8	0.6	0.7	0.5	0.8	0.5	0.9	0.4	0.9	0.4	1	0.5
Magnesium, Total, ICAP	mg/l			4.8	4.9	5.5	5.9	6.2	6.4	11	11	9.6	9.8	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	2.3	2	2.3	1.9	2.1	1.8	2.1	1.8	2.1	2	2.2
Sodium, Total, ICAP	mg/l			60	63	51	55	62	65	38	41	42	45	36	38
Sulfate	mg/l	500	S	55	51	46	44	68	66	42	41	33	31	27	26
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			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			0.31	ND	0.32	0.32	ND	ND	0.43	ND	0.35	0.39	0.32	0.36
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	2.2	ND	2.8	ND	2.8	ND	3.3
General Physical															
Apparent Color	ACU	15	S	ND	3	ND	3	3	3	3	5	ND	5	3	3
Lab pH	Units			8.4	8.3	8.3	8.2	8.3	8.1	8.4	8	8.4	8	8.4	8
Odor	TON	3	S	2	2	**3**	**4**	2	**3**	2	2	**3**	**3**	**3**	2
pH of CaCO3 saturation(25C)	Units			7.6	7.7	7.6	7.7	7.5	7.6	7.5	7.6	7.5	7.6	7.4	7.5
pH of CaCO3 saturation(60C)	Units			7.2	7.3	7.2	7.3	7	7.1	7	7.1	7.1	7.2	7	7
Specific Conductance	umho/cm	1600	S	491	465	448	430	551	532	481	461	455	438	459	440
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	50	P	16	16	12	12	22	22	6.3	6.5	11	11	40	41
Barium, Total, ICAP/MS	ug/l	1000	P	51	51	100	110	130	130	61	63	79	83	100	100
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	5.5	ND	5.4	ND	6	1.1	6.5	ND	5.5	1.1	6.4
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			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	100	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			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l			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	1000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	700	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	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 2005/2006

Water Quality Constituents	Units	MCL	MCL Type	Cerritos #2 Zone 1 04/13/06	Cerritos #2 Zone 1 09/05/06	Cerritos #2 Zone 2 04/13/06	Cerritos #2 Zone 2 09/05/06	Cerritos #2 Zone 3 04/13/06	Cerritos #2 Zone 3 09/05/06	Cerritos #2 Zone 4 04/13/06	Cerritos #2 Zone 4 09/05/06	Cerritos #2 Zone 5 04/13/06	Cerritos #2 Zone 5 09/05/06	Cerritos #2 Zone 6 04/13/06	Cerritos #2 Zone 6 09/05/06
General Mineral															
Total Dissolved Solid (TDS)	mg/l	1000	S	230	218	518	500	220	230	260	258	250	246	**1010**	906
Cation Sum	meq/l			3.8	3.7	8.1	8.5	3.9	3.8	4.2	4.3	4.2	4.4	16	16
Anion Sum	meq/l			3.5	3.5	8.2	7.8	3.4	3.5	3.8	3.9	4.1	4	16	15
Iron, Total, ICAP	mg/l	0.3	S	ND	ND	ND	ND	ND	ND	0.037	0.033	0.092	0.14	0.25	0.25
Manganese, Total, ICAP/MS	ug/l	50	S	17	14	ND	ND	45	41	**80**	**80**	**100**	**100**	**480**	**490**
Turbidity	NTU	5	S	0.1	0.15	0.15	0.3	2.6	3.2	0.2	0.15	0.25	0.25	1.4	1.5
Alkalinity	mg/l			147	145	170	157	145	151	164	170	177	172	328	325
Boron	mg/l			ND	ND	0.1	0.11	0.074	0.051	0.062	0.065	0.06	0.068	0.1	0.1
Bicarbonate as HCO3,calculated	mg/l			179	180	207	190	176	180	199	210	215	210	400	400
Calcium, Total, ICAP	mg/l			43	43	95	100	45	45	51	53	51	54	190	190
Carbonate as CO3, Calculated	mg/l			ND	2.3	ND	2	ND	2.9	2	2.2	2.2	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			130	130	311	330	138	140	162	170	157	170	639	640
Chloride	mg/l	500	S	5.7	5.74	72	68.9	5.4	5.09	5.9	5.87	5.7	5.73	140	134
Fluoride	mg/l	2	P	0.29	0.14	0.38	0.5	0.31	0.27	0.44	0.38	0.36	0.39	0.35	0.39
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	0.7	0.7	1	0.7	0.9	0.8	0.8	0.8	0.4	1.2	1
Magnesium, Total, ICAP	mg/l			5.5	5.5	18	19	6.2	6.1	8.4	8.7	7.3	7.6	40	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	3.4	3.3	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			2.6	2.7	4	4.3	2.6	2.5	2.5	2.7	2.7	2.9	4.6	4.6
Sodium, Total, ICAP	mg/l			25	24	40	42	24	23	21	21	22	22	64	60
Sulfate	mg/l	500	S	20	20	120	120	17	17	17	17	16	16	240	220
Surfactants	mg/l	0.5	S	ND	0.069	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.067
Total Nitrate, Nitrite-N, CALC	mg/l			ND	ND	3.4	3.3	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			0.42	ND	ND	0.4	ND	ND	ND	ND	ND	ND	1.6	1.5
Carbon Dioxide	mg/l			ND	ND	4.3	2	ND	ND	2.1	2.2	2.2	5.5	10	16
General Physical															
Apparent Color	ACU	15	S	ND	ND	ND	ND	3	3	3	3	3	3	5	5
Lab pH	Units			8.2	8.3	7.9	8.2	8.2	8.4	8.2	8.2	8.2	7.8	7.8	7.6
Odor	TON	3	S	2	2	1	1	**8**	**3**	**3**	**3**	**4**	**3**	**3**	2
pH of CaCO3 saturation(25C)	Units			7.6	7.6	7.2	7.2	7.5	7.5	7.4	7.4	7.4	7.4	6.6	6.6
pH of CaCO3 saturation(60C)	Units			7.1	7.1	6.7	6.7	7.1	7.1	7	7	7	6.9	6.1	6.1
Specific Conductance	umho/cm	1600	S	333	353	813	810	337	356	378	400	371	397	1430	1400
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	50	P	2.5	2.6	2.1	2	3.5	3.4	8.8	9	19	18	3.8	3.6
Barium, Total, ICAP/MS	ug/l	1000	P	95	96	160	170	110	110	150	160	160	160	96	92
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	1.2	ND	2.3	1.9	1.1	ND	1.1	ND	1.5	ND	2.7	7.9
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			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	6.7	5.7
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	0.6	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	100	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			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l			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	2.5
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	4.1
Dichlorodifluoromethane	ug/l	1000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	700	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.6
MTBE	ug/l	13	P	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 2005/2006

Water Quality Constituents	Units	MCL	MCL Type	Commerce #1 Zone 2 05/03/06	Commerce #1 Zone 2 09/11/06	Commerce #1 Zone 3 05/03/06	Commerce #1 Zone 3 09/11/06	Commerce #1 Zone 4 05/03/06	Commerce #1 Zone 4 09/11/06	Commerce #1 Zone 5 05/03/06	Commerce #1 Zone 5 09/11/06	Commerce #1 Zone 6 05/03/06	Commerce #1 Zone 6 09/11/06
General Mineral													
Total Dissolved Solid (TDS)	mg/l	1000	S	710	682	474	504	542	540	470	406	398	522
Cation Sum	meq/l			12	12	8.2	8.5	8.5	9	8.2	8.7	6.6	6.8
Anion Sum	meq/l			11	11	8.1	7.9	8.1	8.4	8	7.7	5.8	6.6
Iron, Total, ICAP	mg/l	0.3	S	ND	ND	0.099	0.095	0.062	0.054	ND	ND	ND	ND
Manganese, Total, ICAP/MS	ug/l	50	S	12	13	**50**	**51**	**65**	**67**	ND	ND	ND	ND
Turbidity	NTU	5	S	1.4	1.2	0.3	0.4	0.2	0.5	1.5	1.1	2	1
Alkalinity	mg/l			269	298	216	212	184	195	183	162	141	181
Boron	mg/l			0.5	0.51	0.22	0.23	0.24	0.24	0.16	0.16	0.13	0.13
Bicarbonate as HCO3,calculated	mg/l			328	360	263	260	224	240	223	200	172	220
Calcium, Total, ICAP	mg/l			57	58	63	65	49	49	77	84	59	61
Carbonate as CO3, Calculated	mg/l			ND	3.7	ND	2.7	ND	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			249	260	244	250	205	200	287	310	226	230
Chloride	mg/l	500	S	200	194	92	92.3	110	114	75	77.4	57	56.8
Fluoride	mg/l	2	P	0.37	0.35	0.36	0.42	0.44	0.42	0.4	0.45	0.49	0.36
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.6	1.1	0.8	1	0.4	0.4	0.5	0.8	0.3	0.7
Magnesium, Total, ICAP	mg/l			26	27	21	21	20	20	23	24	19	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	4.3	4.2	6.6	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			5.7	6	3.3	3.5	3.3	3.4	2.3	2.5	1.8	1.9
Sodium, Total, ICAP	mg/l			150	160	75	79	100	110	55	57	47	49
Sulfate	mg/l	500	S	ND	ND	56	52	61	61	93	96	43	42
Surfactants	mg/l	0.5	S	ND	0.062	ND	ND	ND	ND	ND	ND	ND	ND
Total Nitrate, Nitrite-N, CALC	mg/l			ND	ND	ND	ND	ND	ND	4.3	4.2	6.6	6.2
Total Organic Carbon	mg/l			3.4	3.6	0.84	0.85	0.86	0.79	0.3	0.37	ND	ND
Carbon Dioxide	mg/l			8.5	3.7	4.3	2.7	5.8	6.2	7.3	3.3	5.6	3.6
General Physical													
Apparent Color	ACU	15	S	**20**	**20**	5	5	5	5	ND	ND	3	ND
Lab pH	Units			7.8	8.2	8	8.2	7.8	7.8	7.7	8	7.7	8
Odor	TON	3	S	**4**	**8**	**3**	2	**3**	1	2	2	1	**3**
pH of CaCO3 saturation(25C)	Units			7.2	7.1	7.2	7.2	7.4	7.4	7.2	7.2	7.4	7.3
pH of CaCO3 saturation(60C)	Units			6.7	6.7	6.8	6.8	7	6.9	6.8	6.8	7	6.9
Specific Conductance	umho/cm	1600	S	1230	1200	853	827	907	889	840	668	691	846
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	50	P	ND	1.9	ND	ND	ND	ND	ND	1.3	ND	1.1
Barium, Total, ICAP/MS	ug/l	1000	P	81	97	89	110	240	270	88	110	53	65
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	6.4	3.9	4.9	2.7	4.1	2.4	9.8	8	13	13
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			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND	5.5	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	1.3	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	0.9	0.99	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	100	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			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l			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	1000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	700	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	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 2005/2006

Water Quality Constituents	Units	MCL	MCL Type	Compton #1	Compton #1	Compton #1	Compton #1	Compton #1	Compton #1	Compton #1	Compton #1	Compton #1	Compton #1
				Zone 1	Zone 1	Zone 2	Zone 2	Zone 3	Zone 3	Zone 4	Zone 4	Zone 5	Zone 5
				04/06/06	09/01/06	03/07/06	09/20/06	04/06/06	09/01/06	04/06/06	09/01/06	04/06/06	09/01/06
General Mineral													
Total Dissolved Solid (TDS)	mg/l	1000	S	224	324	268	300	308	348	346	344	330	366
Cation Sum	meq/l			3.8	3.9	4.6	4.8	5.1	5.1	5.7	5.5	5.6	5.5
Anion Sum	meq/l			3.8	3.6	4.9	4.5	5	4.9	5.5	5.6	5.6	5.4
Iron, Total, ICAP	mg/l	0.3	S	ND	ND	ND	ND	0.041	0.029	0.1	0.077	0.079	0.079
Manganese, Total, ICAP/MS	ug/l	50	S	12	12	28	24	**63**	**61**	**90**	**89**	**82**	**85**
Turbidity	NTU	5	S	0.2	0.15	0.15	0.4	2	1.4	0.95	0.9	1.4	1.5
Alkalinity	mg/l			167	160	143	135	150	150	162	171	179	171
Boron	mg/l			0.12	0.15	0.098	0.072	0.085	0.12	0.077	0.098	0.1	0.13
Bicarbonate as HCO3,calculated	mg/l			200	190	170	160	180	180	200	210	220	210
Calcium, Total, ICAP	mg/l			19	19	39	40	48	47	63	59	56	55
Carbonate as CO3, Calculated	mg/l			4.1	3.1	2.2	ND	ND	ND	2.1	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			54	54	110	110	160	150	180	170	180	180
Chloride	mg/l	500	S	14	13	23	21.5	25	24	22	22	21	20
Fluoride	mg/l	2	P	0.29	0.32	0.28	0.39	0.23	0.28	0.23	0.28	0.31	0.28
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.6	0.5	0.7	0.6	0.6	0.6	0.9	0.7	0.5	0.6
Magnesium, Total, ICAP	mg/l			1.6	1.6	3.4	3.4	8.6	8.7	6.3	6.1	10	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			1.5	1.6	1.7	1.7	2.8	2.7	2.6	2.6	2.6	2.6
Sodium, Total, ICAP	mg/l			62	64	53	56	44	45	46	46	43	43
Sulfate	mg/l	500	S	ND	ND	65	58	63	60	79	76	70	66
Surfactants	mg/l	0.5	S	ND	0.058	ND	ND	ND	ND	ND	ND	ND	ND
Total Nitrate, Nitrite-N, CALC	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			3	2.9	0.73	0.71	0.62	0.63	ND	ND	ND	ND
Carbon Dioxide	mg/l			ND	ND	ND	ND	2.3	2.3	2.1	2.7	4.5	3.4
General Physical													
Apparent Color	ACU	15	S	**25**	**25**	10	5	5	5	3	3	3	3
Lab pH	Units			8.5	8.4	8.3	8.2	8.1	8.1	8.2	8.1	7.9	8
Odor	TON	3	S	2	**8**	**4**	**4**	2	**4**	**3**	**4**	2	**4**
pH of CaCO3 saturation(25C)	Units			7.9	7.9	7.6	7.6	7.5	7.5	7.3	7.4	7.4	7.4
pH of CaCO3 saturation(60C)	Units			7.4	7.4	7.2	7.2	7.1	7.1	6.9	6.9	6.9	6.9
Specific Conductance	umho/cm	1600	S	358	376	468	480	522	509	558	546	558	548
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	50	P	1.1	ND	ND	ND	ND	ND	31	30	27	24
Barium, Total, ICAP/MS	ug/l	1000	P	5.5	6.5	15	16	58	60	160	160	93	94
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	2.2	2.4	ND	ND	2	ND	2.1	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			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	100	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			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l			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	1000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	700	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	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 2005/2006

Water Quality Constituents	Units	MCL	MCL Type	Downey #1 Zone 1 05/03/06	Downey #1 Zone 1 09/11/06	Downey #1 Zone 2 05/03/06	Downey #1 Zone 2 09/11/06	Downey #1 Zone 3 05/03/06	Downey #1 Zone 3 09/11/06	Downey #1 Zone 4 05/03/06	Downey #1 Zone 4 09/11/06	Downey #1 Zone 5 05/03/06	Downey #1 Zone 5 09/11/06	Downey #1 Zone 6 05/03/06	Downey #1 Zone 6 09/11/06
General Mineral															
Total Dissolved Solid (TDS)	mg/l	1000	S	196	244	384	304	488	482	566	546	414	394	810	832
Cation Sum	meq/l			3.7	3.8	6.3	6.5	7.9	8.5	9.1	9.5	7.2	7	15	16
Anion Sum	meq/l			3.4	3.6	5.9	6.2	7.3	7.9	8.6	9.1	6.7	6.5	15	15
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	ND	ND	ND	ND	ND	**120**	**120**	**65**	**74**
Turbidity	NTU	5	S	0.2	0.25	0.5	0.45	0.35	0.2	0.4	0.45	4	**5.4**	2.2	1
Alkalinity	mg/l			143	152	143	156	133	163	169	189	193	201	323	353
Boron	mg/l			0.067	0.06	0.069	0.071	0.088	0.087	0.2	0.21	0.098	0.09	0.22	0.23
Bicarbonate as HCO3,calculated	mg/l			174	180	174	190	162	200	206	230	235	240	394	430
Calcium, Total, ICAP	mg/l			41	42	80	82	100	110	96	100	91	87	170	180
Carbonate as CO3, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			126	130	253	260	324	350	322	330	297	290	569	600
Chloride	mg/l	500	S	5.1	5.2	35	35.9	66	68.1	75	78.2	38	32.8	110	106
Fluoride	mg/l	2	P	0.31	0.3	0.29	0.27	0.34	0.32	0.39	0.4	0.37	0.37	ND	0.3
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	0.4	0.8	0.5	0.9	0.5	0.8	0.6	0.9	0.7	1.1
Magnesium, Total, ICAP	mg/l			5.8	6	13	13	18	19	20	20	17	17	35	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	3.1	3.1	1.8	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			2.8	2.9	3.4	3.7	3.2	3.3	4.2	4.5	3.6	3.6	5.5	5.9
Sodium, Total, ICAP	mg/l			26	27	27	28	30	32	58	62	27	27	81	86
Sulfate	mg/l	500	S	18	17	93	92	120	120	140	140	86	72	250	240
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			ND	ND	1.9	2	3.1	3.1	1.8	2	ND	ND	ND	ND
Total Organic Carbon	mg/l			ND	ND	ND	ND		ND	0.61	0.52	0.33	ND	0.77	0.74
Carbon Dioxide	mg/l			3.6	ND	5.7	2.5	5.3	3.3	8.5	4.7	7.7	3.9	32	14
General Physical															
Apparent Color	ACU	15	S	ND	ND	ND	3	ND	ND	3	ND	3	ND	ND	ND
Lab pH	Units			7.9	8.2	7.7	8.1	7.7	8	7.6	7.9	7.7	8	7.3	7.7
Odor	TON	3	S	1	1	1	1	1	1	1	1	1	2	2	1
pH of CaCO3 saturation(25C)	Units			7.6	7.6	7.3	7.3	7.2	7.1	7.1	7.1	7.1	7.1	6.6	6.6
pH of CaCO3 saturation(60C)	Units			7.1	7.1	6.9	6.8	6.8	6.7	6.7	6.6	6.7	6.7	6.2	6.1
Specific Conductance	umho/cm	1600	S	346	354	644	620	813	797	921	904	711	649	1430	1410
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	50	P	3.2	3.4	2.4	2.8	3.3	3.4	2.1	2.5	4.7	3.9	2.7	2.4
Barium, Total, ICAP/MS	ug/l	1000	P	92	91	150	160	130	140	90	90	240	210	69	73
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	6	5.2	4.4	3.3	3.9	2.8	4.2	2.8	3	1.3	8.3	5.1
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	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	5.2	ND	7.2	ND	7.6	ND	6.5	ND	13	7
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	0.96	0.8	0.8	0.7
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	0.7	0.7	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	1.7	1.2
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l	100	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			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l			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	1000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	700	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	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 2005/2006

Water Quality Constituents	Units	MCL	MCL Type	Huntington Park #1 Zone 1 05/17/06	Huntington Park #1 Zone 1 09/20/06	Huntington Park #1 Zone 2 05/17/06	Huntington Park #1 Zone 2 09/20/06	Huntington Park #1 Zone 3 05/17/06	Huntington Park #1 Zone 3 09/20/06	Huntington Park #1 Zone 4 05/17/06	Huntington Park #1 Zone 4 09/20/06
General Mineral											
Total Dissolved Solid (TDS)	mg/l	1000	S	336	370	336	364	478	426	666	686
Cation Sum	meq/l			6.2	6.1	6.2	6.2	8.2	7.5	11	11
Anion Sum	meq/l			5.8	5.9	5.7	5.8	7.8	7.3	10	10
Iron, Total, ICAP	mg/l	0.3	S	0.24	0.22	ND	ND	ND	ND	ND	ND
Manganese, Total, ICAP/MS	ug/l	50	S	49	**53**	ND	ND	ND	ND	ND	ND
Turbidity	NTU	5	S	1.3	1.3	0.2	0.5	0.45	0.1	0.1	0.15
Alkalinity	mg/l			167	166	169	172	197	174	271	232
Boron	mg/l			0.15	0.11	0.15	0.11	0.16	0.12	0.18	0.14
Bicarbonate as HCO3,calculated	mg/l			206	200	206	210	230	210	294	280
Calcium, Total, ICAP	mg/l			62	62	61	62	85	77	120	120
Carbonate as CO3, Calculated	mg/l			ND	2.1	ND	2.2	ND	2.7	ND	ND
Hardness (Total, as CaCO3)	mg/l			217	220	214	220	299	270	427	430
Chloride	mg/l	500	S	20	22.3	20	21.7	40	40.3	61	62
Fluoride	mg/l	2	P	0.53	0.5	0.47	0.46	0.39	0.4	0.4	0.4
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.5	0.8	0.7	0.9	0.7	1.1	0.8	1.1
Magnesium, Total, ICAP	mg/l			15	15	15	15	21	19	31	31
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	2.7	1.8	5	4.9
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total, ICAP	mg/l			3.4	3.2	3.2	3.1	3.7	3.4	4.5	4.4
Sodium, Total, ICAP	mg/l			42	39	42	41	50	47	59	56
Sulfate	mg/l	500	S	87	90	82	85	130	120	170	170
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND
Total Nitrate, Nitrite-N, CALC	mg/l			ND	ND	ND	ND	2.7	1.8	5	4.9
Total Organic Carbon	mg/l			ND	ND	ND	ND	ND	ND	0.33	0.4
Carbon Dioxide	mg/l			5.4	2.1	3.4	2.2	4.7	ND	9.6	4.6
General Physical											
Apparent Color	ACU	15	S	5	3	ND	ND	ND	ND	ND	ND
Lab pH	Units			7.8	8.2	8	8.2	7.9	8.3	7.7	8
Odor	TON	3	S	2	**3**	1	**3**	1	**4**	1	**4**
pH of CaCO3 saturation(25C)	Units			7.3	7.4	7.3	7.3	7.2	7.2	6.9	6.9
pH of CaCO3 saturation(60C)	Units			6.9	6.9	6.9	6.9	6.7	6.8	6.5	6.5
Specific Conductance	umho/cm	1600	S	592	590	595	570	793	710	999	1000
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	50	P	1.1	ND	1.1	1.2	ND	ND	1.2	1.7
Barium, Total, ICAP/MS	ug/l	1000	P	62	61	78	83	92	93	93	100
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	1.4	ND	2.1	1.5	6.1	4.5	4.5	3.8
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			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	7.2	6.2
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	4	1.2	0.8	0.7
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	0.5	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	100	P	ND	ND	ND	ND	0.6	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	**3**	**0.8**	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			ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l			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	1000	S	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	700	P	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	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 2005/2006

Water Quality 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
				05/02/06	09/27/06	05/02/06	09/27/06	05/02/06	09/27/06
General Mineral									
Total Dissolved Solid (TDS)	mg/l	1000	S	**1550**	**1630**	**1520**	**1490**	312	302
Cation Sum	meq/l			28	28	26	27	5.4	5.4
Anion Sum	meq/l			29	27	26	27	4.5	5.1
Iron, Total, ICAP	mg/l	0.3	S	**0.58**	**0.59**	**0.49**	**0.48**	0.11	0.098
Manganese, Total, ICAP/MS	ug/l	50	S	26	27	30	29	37	37
Turbidity	NTU	5	S	2.1	3	**88**	**32**	1.4	4.1
Alkalinity	mg/l			1410	1300	1290	1300	201	226
Boron	mg/l			3.9	3.8	3.4	3.4	0.21	0.2
Bicarbonate as HCO3,calculated	mg/l			1720	1600	1570	1600	245	270
Calcium, Total, ICAP	mg/l			17	17	11	11	33	32
Carbonate as CO3, Calculated	mg/l			11	52	13	52	ND	5.5
Hardness (Total, as CaCO3)	mg/l			112	110	66.2	66	132	130
Chloride	mg/l	500	S	29	30.5	18	18.7	18	21
Fluoride	mg/l	2	P	0.52	0.7	0.27	0.38	0.17	0.29
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			1	1.7	0.9	1.5	0.5	1
Magnesium, Total, ICAP	mg/l			17	17	9.4	9.3	12	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			24	27	19	21	6.6	6.6
Sodium, Total, ICAP	mg/l			580	580	560	570	59	61
Sulfate	mg/l	500	S	ND	ND	ND	ND	ND	ND
Surfactants	mg/l	0.5	S	0.074	0.08	ND	ND	ND	ND
Total Nitrate, Nitrite-N, CALC	mg/l			ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			38	35	26	21	1.2	1.6
Carbon Dioxide	mg/l			28	5.2	20	5.2	4	ND
General Physical									
Apparent Color	ACU	15	S	**400**	**250**	**200**	**150**	10	**15**
Lab pH	Units			8	8.7	8.1	8.7	8	8.5
Odor	TON	3	S	**17**	**40**	**17**	**40**	**8**	**4**
pH of CaCO3 saturation(25C)	Units			7	7	7.2	7.2	7.5	7.5
pH of CaCO3 saturation(60C)	Units			6.5	6.6	6.8	6.8	7.1	7.1
Specific Conductance	umho/cm	1600	S	**2510**	**2500**	**2360**	**2300**	541	510
Metal									
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	ND	ND	55	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	50	P	ND	1.8	ND	ND	ND	ND
Barium, Total, ICAP/MS	ug/l	1000	P	40	41	23	22	15	16
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	ND	3	ND	5.7	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			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	13	ND	21	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	100	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			ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l			ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l			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	1000	S	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	700	P	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	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 2005/2006

Water Quality 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
				04/03/06	08/29/06	04/03/06	08/29/06	04/03/06	08/29/06	04/03/06	08/29/06	04/03/06	08/29/06
General Mineral													
Total Dissolved Solid (TDS)	mg/l	1000	S	348	360	248	256	312	318	376	398	412	626
Cation Sum	meq/l			5.9	6.4	4.3	4.5	5.3	5.7	6.7	7	6.9	11
Anion Sum	meq/l			6	5.1	4.3	3.6	4.6	4.5	6.6	5	6.5	9.3
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	12	6	6	20	21	19	32	2.3	16
Turbidity	NTU	5	S	0.15	0.2	0.15	0.15	0.35	0.55	0.35	0.65	0.15	0.2
Alkalinity	mg/l			152	111	137	104	143	139	180	192	136	137
Boron	mg/l			0.13	0.15	0.095	0.11	0.13	0.16	0.11	0.13	0.11	0.15
Bicarbonate as HCO3,calculated	mg/l			180	130	170	130	170	170	220	230	170	170
Calcium, Total, ICAP	mg/l			15	16	9.7	10	21	23	47	46	50	77
Carbonate as CO3, Calculated	mg/l			2.9	6.7	3.5	4.2	ND	2.8	ND	6	ND	2.8
Hardness (Total, as CaCO3)	mg/l			51	55	31	32	78	88	190	180	190	310
Chloride	mg/l	500	S	28	27.7	16	15.6	16	16	40	12.8	61	145
Fluoride	mg/l	2	P	0.72	0.79	0.51	0.55	0.7	0.75	0.51	0.55	0.4	0.34
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.4	0.8	0.3	0.4	0.2	0.5	0.7	1.2	0.6	1.1
Magnesium, Total, ICAP	mg/l			3.4	3.6	1.7	1.6	6.3	7.4	17	17	17	28
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	2.1	6.4
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total, ICAP	mg/l			2	2.3	1.6	1.7	2.3	2.7	2.6	2.9	2.5	3.5
Sodium, Total, ICAP	mg/l			110	120	84	88	84	90	66	75	68	100
Sulfate	mg/l	500	S	100	100	54	52	59	60	90	36	93	98
Surfactants	mg/l	0.5	S	ND	0.082	ND	ND	ND	ND	ND	0.051	ND	ND
Total Nitrate, Nitrite-N, CALC	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	2.1	6.4
Total Organic Carbon	mg/l			0.5	ND	ND	ND	0.6	0.48	ND	ND	0.47	ND
Carbon Dioxide	mg/l			ND	ND	ND	ND	2.2	ND	2.9	ND	2.2	ND
General Physical													
Apparent Color	ACU	15	S	3	5	3	3	10	5	ND	ND	3	ND
Lab pH	Units			8.4	8.9	8.5	8.7	8.1	8.4	8.1	8.6	8.1	8.4
Odor	TON	3	S	1	1	1	1	1	2	1	1	2	1
pH of CaCO3 saturation(25C)	Units			8	8.1	8.2	8.3	7.9	7.9	7.4	7.4	7.5	7.3
pH of CaCO3 saturation(60C)	Units			7.6	7.7	7.8	7.9	7.4	7.4	7	7	7.1	6.9
Specific Conductance	umho/cm	1600	S	614	602	449	430	529	527	653	663	703	999
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	50	P	6.2	5.5	7.3	7.1	6.3	5.6	2.9	2.8	1.5	1.2
Barium, Total, ICAP/MS	ug/l	1000	P	58	64	23	25	45	49	45	46	42	75
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	1.2	ND	1.2	ND	1.5	ND	1.5	ND	3.1
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			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	16
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	5.5	ND	9	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	100	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			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l			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	1000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	700	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	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 2005/2006

Water Quality Constituents	Units	MCL	MCL Type	Lakewood #1 Zone 1 04/11/06	Lakewood #1 Zone 1 09/27/06	Lakewood #1 Zone 2 04/11/06	Lakewood #1 Zone 2 09/27/06	Lakewood #1 Zone 3 04/11/06	Lakewood #1 Zone 3 09/27/06	Lakewood #1 Zone 4 04/11/06	Lakewood #1 Zone 4 09/27/06	Lakewood #1 Zone 5 04/11/06	Lakewood #1 Zone 5 09/27/06	Lakewood #1 Zone 6 04/11/06	Lakewood #1 Zone 6 09/27/06
General Mineral															
Total Dissolved Solid (TDS)	mg/l	1000	S	174	194	190	200	214	218	274	326	248	258	414	440
Cation Sum	meq/l			2.9	2.9	3.4	3.4	3.8	3.8	4.8	5.1	4.2	4.1	7.2	7.6
Anion Sum	meq/l			2.7	2.8	3.2	3.2	3.7	3.6	4.7	5.1	4	4	6.9	7.4
Iron, Total, ICAP	mg/l	0.3	S	ND	ND	ND	ND	ND	ND	0.067	0.057	0.093	0.086	0.099	0.093
Manganese, Total, ICAP/MS	ug/l	50	S	2.8	2.7	16	17	24	25	**92**	**98**	**51**	**52**	**280**	**270**
Turbidity	NTU	5	S	0.3	0.6	0.25	0.6	1.3	1.3	1	1	0.65	0.2	0.9	0.65
Alkalinity	mg/l			88	91	134	132	154	150	159	158	172	168	190	199
Boron	mg/l			0.072	0.061	0.056	0.051	0.074	0.069	0.079	0.074	0.093	0.088	0.091	0.089
Bicarbonate as HCO3,calculated	mg/l			105	110	163	160	187	180	193	190	209	200	231	240
Calcium, Total, ICAP	mg/l			10	10	33	32	40	39	49	54	47	46	93	96
Carbonate as CO3, Calculated	mg/l			4.3	2.3	2.1	ND	2.4	ND	2	ND	2.2	4.1	ND	3.9
Hardness (Total, as CaCO3)	mg/l			26.4	26	98.5	96	120	120	147	160	152	150	270	280
Chloride	mg/l	500	S	20	21	6.3	6.44	8.8	9.39	43	56.7	10	9.94	74	85.5
Fluoride	mg/l	2	P	0.31	0.36	0.095	0.3	0.14	0.36	0.16	0.38	0.34	0.53	0.072	0.25
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	0.1	0.6	0.4	0.7	0.5	0.7	0.6	0.7	1	0.9	1.3
Magnesium, Total, ICAP	mg/l			0.34	0.34	3.9	3.8	4.9	4.9	6.1	7	8.4	8.4	9.1	9.6
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	2.2	2.3	2.4	2.8	3	2.5	2.6	3.7	4
Sodium, Total, ICAP	mg/l			54	54	32	33	31	32	41	40	25	25	40	43
Sulfate	mg/l	500	S	17	17	16	16	16	17	15	15	14	14	49	48
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	0.1	ND	ND	ND	0.12
Total Nitrate, Nitrite-N, CALC	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			0.9	0.77	0.35	ND	0.33	ND	0.56	0.63	0.3	ND	0.85	0.77
Carbon Dioxide	mg/l			ND	ND	ND	2.1	ND	2.3	2	3.1	2.2	ND	3.8	ND
General Physical															
Apparent Color	ACU	15	S	**15**	**15**	3	3	3	3	3	5	3	5	3	3
Lab pH	Units			8.8	8.5	8.3	8.1	8.3	8.1	8.2	8	8.2	8.5	8	8.4
Odor	TON	3	S	**3**	**3**	**3**	2	2	2	**3**	**4**	2	**3**	2	2
pH of CaCO3 saturation(25C)	Units			8.4	8.4	7.7	7.7	7.6	7.6	7.5	7.4	7.5	7.5	7.1	7.1
pH of CaCO3 saturation(60C)	Units			8	8	7.3	7.3	7.1	7.1	7	7	7	7	6.7	6.6
Specific Conductance	umho/cm	1600	S	287	290	310	320	350	360	495	520	380	390	731	740
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	50	P	11	13	1.8	1.6	1.2	1.1	14	13	4	3.7	23	21
Barium, Total, ICAP/MS	ug/l	1000	P	15	16	19	22	27	30	120	150	97	110	240	280
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	1	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			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	100	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			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l			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	1000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	700	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	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 2005/2006

Water Quality 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
				04/10/06	08/28/06	04/10/06	08/28/06	04/10/06	08/28/06	04/10/06	08/28/06	04/10/06	08/28/06	04/10/06	08/28/06
General Mineral															
Total Dissolved Solid (TDS)	mg/l	1000	S	216	238	218	216	182	190	234	230	**1060**	**1080**	906	904
Cation Sum	meq/l			3.6	3.4	3.4	3.8	3	3.2	3.7	3.9	18	17	15	16
Anion Sum	meq/l			3.6	2.8	3.4	2.5	3	2.5	3.6	2.9	17	17	15	15
Iron, Total, ICAP	mg/l	0.3	S	ND	ND	ND	ND	ND	ND	ND	ND	0.038	0.042	0.13	0.13
Manganese, Total, ICAP/MS	ug/l	50	S	2.3	2.5	ND	ND	3.9	3.7	19	20	**130**	**120**	**350**	**380**
Turbidity	NTU	5	S	0.45	0.7	0.25	1.2	1.8	0.85	3.6	0.9	**8.7**	2.4	0.7	**9.7**
Alkalinity	mg/l			157	116	149	106	117	96	132	97	143	119	220	222
Boron	mg/l			0.18	0.19	0.17	0.22	0.096	0.1	0.093	0.09	0.11	0.11	0.099	0.11
Bicarbonate as HCO3,calculated	mg/l			186	140	177	120	140	110	160	120	174	140	268	270
Calcium, Total, ICAP	mg/l			2.2	2.2	2.3	2.6	5.2	5.3	17	19	110	100	170	180
Carbonate as CO3, Calculated	mg/l			12	11	12	9.8	5.7	4.5	3.3	2.5	ND	2.3	ND	2.2
Hardness (Total, as CaCO3)	mg/l			6.32	6.3	6.24	7.1	14.2	14	49.4	55	341	320	544	580
Chloride	mg/l	500	S	15	14.1	15	13.7	12	11.1	13	11.2	310	318	170	177
Fluoride	mg/l	2	P	0.57	0.66	0.55	0.64	0.59	0.64	0.25	0.43	ND	0.2	0.11	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			0.2	0.1	0.2	0.1	0.2	0.1	0.5	0.4	0.9	1.1	1.2	1.3
Magnesium, Total, ICAP	mg/l			0.2	0.2	0.12	0.14	0.29	0.29	1.7	1.9	16	16	29	31
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	1.3	1.4	4	4	3.6	4
Sodium, Total, ICAP	mg/l			76	75	70	83	63	68	62	64	250	250	82	90
Sulfate	mg/l	500	S	ND	ND	ND	ND	13	13	28	29	270	270	280	270
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.1
Total Nitrate, Nitrite-N, CALC	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			2.7	2.8	2.6	3.4	1.5	1.6	0.72	0.67	1.2	1.4	1.3	1.3
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	2.3	ND	4.4	3.5
General Physical															
Apparent Color	ACU	15	S	**80**	**80**	**80**	**80**	**40**	**35**	**15**	10	3	3	5	5
Lab pH	Units			9	9.1	9	9.1	8.8	8.8	8.5	8.5	8.1	8.4	8	8.1
Odor	TON	3	S	**4**	**3**	**4**	**4**	**4**	**4**	1	2	**4**	**4**	2	**3**
pH of CaCO3 saturation(25C)	Units			8.8	9	8.8	9	8.6	8.7	8	8.1	7.2	7.3	6.8	6.8
pH of CaCO3 saturation(60C)	Units			8.4	8.5	8.4	8.5	8.1	8.2	7.6	7.7	6.7	6.8	6.3	6.3
Specific Conductance	umho/cm	1600	S	346	356	347	350	296	307	356	374	**1800**	**1780**	1420	1470
Metal															
Aluminum, Total, ICAP/MS	ug/l	1000	P	30	42	28	32	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	50	P	ND	ND	ND	ND	ND	ND	1.4	ND	2	2.1	8.4	11
Barium, Total, ICAP/MS	ug/l	1000	P	ND	2.4	2.2	2.4	ND	ND	6.6	7.5	77	90	260	290
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	1.4	ND	1.6	ND	1.9	ND	2.1	ND	2.3	ND	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			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	5.8	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	100	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			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l			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	1000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	700	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	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 2005/2006

Water Quality Constituents	Units	MCL	MCL Type	Long Beach #2 Zone 1 04/12/06	Long Beach #2 Zone 1 09/12/06	Long Beach #2 Zone 2 03/14/06	Long Beach #2 Zone 2 09/26/06	Long Beach #2 Zone 3 04/12/06	Long Beach #2 Zone 3 09/12/06	Long Beach #2 Zone 4 04/12/06	Long Beach #2 Zone 4 09/12/06	Long Beach #2 Zone 5 04/12/06	Long Beach #2 Zone 5 09/12/06	Long Beach #2 Zone 6 04/12/06	Long Beach #2 Zone 6 09/12/06
General Mineral															
Total Dissolved Solid (TDS)	mg/l	1000	S	432	398	260	282	262	240	292	342	950	864	**1090**	**1080**
Cation Sum	meq/l			7.1	8	4.5	4.7	4	4.2	4.9	5.1	15	16	19	20
Anion Sum	meq/l			6.8	6.7	4.5	4.4	3.8	3.9	4.5	4.8	15	16	19	19
Iron, Total, ICAP	mg/l	0.3	S	0.12	0.15	0.021	0.022	ND	ND	ND	ND	0.16	0.16	0.19	0.19
Manganese, Total, ICAP/MS	ug/l	50	S	15	18	17	17	9.9	8.4	33	33	**170**	**160**	**330**	**350**
Turbidity	NTU	5	S	1.6	0.75	0.55	0.4	0.25	0.2	1.1	0.7	1.1	1	1.9	2.1
Alkalinity	mg/l			308	302	194	189	135	134	129	139	303	302	293	289
Boron	mg/l			0.57	0.57	0.2	0.2	0.15	0.15	0.1	0.099	0.29	0.28	0.37	0.38
Bicarbonate as HCO3,calculated	mg/l			373	370	240	230	163	160	157	170	369	370	357	350
Calcium, Total, ICAP	mg/l			7.1	7.5	15	15	14	14	40	40	170	170	210	210
Carbonate as CO3, Calculated	mg/l			7.7	7.6	3.9	3	3.3	3.3	2	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			24.3	25	44	44	40.3	40	118	120	523	530	664	660
Chloride	mg/l	500	S	22	22.8	21	21	23	24.6	32	34.5	100	107	170	178
Fluoride	mg/l	2	P	0.54	0.62	0.85	0.43	0.41	0.51	0.15	0.32	ND	0.16	0.12	0.48
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	0.5	0.4	0.4	0.4	0.7	0.6	1.3	1.1	1.3	1.1
Magnesium, Total, ICAP	mg/l			1.6	1.6	1.7	1.7	1.3	1.3	4.5	4.6	24	25	34	34
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			2.5	2.7	1.8	1.9	1.3	1.3	2.7	2.8	5	5.1	6.3	6.4
Sodium, Total, ICAP	mg/l			150	170	82	87	72	77	56	60	110	120	130	140
Sulfate	mg/l	500	S	ND	ND	ND	ND	23	24	47	50	300	310	400	410
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	0.061	ND	0.094	0.055	0.064	ND	0.13	0.085
Total Nitrate, Nitrite-N, CALC	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			11	17	3.6	3.5	1.4	1.4	1.2	1.2	1.3	1.3	1.4	1.4
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	7.6	12	7.4	11
General Physical															
Apparent Color	ACU	15	S	**250**	**400**	**40**	**35**	**20**	**25**	5	5	3	3	3	5
Lab pH	Units			8.5	8.5	8.4	8.3	8.5	8.5	8.3	8.2	7.9	7.7	7.9	7.7
Odor	TON	3	S	2	**8**	**3**	**4**	1	**3**	1	**4**	2	**3**	2	**4**
pH of CaCO3 saturation(25C)	Units			8	8	7.9	7.9	8.1	8.1	7.6	7.6	6.6	6.6	6.6	6.6
pH of CaCO3 saturation(60C)	Units			7.6	7.6	7.5	7.5	7.6	7.6	7.2	7.2	6.2	6.2	6.1	6.1
Specific Conductance	umho/cm	1600	S	662	650	445	430	371	388	483	486	1370	1390	**1690**	**1700**
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	50	P	ND	ND	ND	ND	ND	ND	1.6	1.8	5.5	4.8	7.9	6.9
Barium, Total, ICAP/MS	ug/l	1000	P	6.6	8.7	9.6	9.3	5.9	6.5	23	28	80	96	85	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	1.1	1.5	4.5	ND	ND	1.3	ND	1.3	1.8	2.4	1.4	3.4
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	2.1	2.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l			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	9.6	6.9	6.2	9.3
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	**2.2**	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	5.8	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	100	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			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l			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	1000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	700	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	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 2005/2006

Water Quality Constituents	Units	MCL	MCL Type	Long Beach #6 Zone 1 04/07/06	Long Beach #6 Zone 1 08/28/06	Long Beach #6 Zone 2 04/07/06	Long Beach #6 Zone 2 08/28/06	Long Beach #6 Zone 3 04/07/06	Long Beach #6 Zone 3 08/28/06	Long Beach #6 Zone 4 04/07/06	Long Beach #6 Zone 4 08/28/06	Long Beach #6 Zone 5 04/07/06	Long Beach #6 Zone 5 08/28/06	Long Beach #6 Zone 6 04/07/06	Long Beach #6 Zone 6 08/28/06
General Mineral															
Total Dissolved Solid (TDS)	mg/l	1000	S	670	538	344	660	210	224	252	230	186	204	218	266
Cation Sum	meq/l			11	11	5.5	10	3.6	3.6	4	3.5	3.2	3.3	4.2	4.2
Anion Sum	meq/l			11	9.1	6	8.5	3.4	2.6	3.9	3	3	2.5	4.1	4
Iron, Total, ICAP	mg/l	0.3	S	0.087	0.083	0.058	0.085	0.032	0.029	0.04	0.021	ND	ND	0.099	0.11
Manganese, Total, ICAP/MS	ug/l	50	S	17	17	14	22	5.6	4.7	26	22	9.4	8.9	**98**	**100**
Turbidity	NTU	5	S	3.5	2.6	3.2	0.75	0.45	0.65	0.65	0.8	0.2	0.55	0.3	0.35
Alkalinity	mg/l			525	430	269	401	147	109	167	123	110	87	130	130
Boron	mg/l			1.1	1	0.48	0.93	0.23	0.24	0.23	0.18	0.083	0.1	0.054	0.061
Bicarbonate as HCO3,calculated	mg/l			636	380	324	480	176	130	200	150	132	100	158	160
Calcium, Total, ICAP	mg/l			8.9	8.5	4.1	7.7	4.5	4.7	5.7	5.6	13	13	40	39
Carbonate as CO3, Calculated	mg/l			13	16	11	16	9.1	8.4	8.2	7.7	4.3	2.6	ND	ND
Hardness (Total, as CaCO3)	mg/l			29.2	28	13	25	12.4	13	16.2	16	36.4	36	120	120
Chloride	mg/l	500	S	19	16.9	20	17.1	17	15.3	18	16.4	16	19	41	37.9
Fluoride	mg/l	2	P	0.62	0.7	0.65	0.74	0.54	0.63	0.55	0.63	0.45	0.57	0.19	0.21
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.8	0.9	0.4	0.8	0.4	0.3	0.4	0.4	0.5	0.3	0.4	0.5
Magnesium, Total, ICAP	mg/l			1.7	1.7	0.67	1.3	0.28	0.27	0.48	0.4	0.95	0.87	5	4.9
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			1.7	1.7	1.1	1.6	ND	1.1	ND	ND	1.2	1.2	2.3	2.4
Sodium, Total, ICAP	mg/l			250	240	120	220	76	76	84	73	57	59	40	41
Sulfate	mg/l	500	S	ND	ND	ND	ND	ND	ND	ND	4.3	15	10	16	14
Surfactants	mg/l	0.5	S	ND	ND	ND	0.06	ND	ND	ND	ND	ND	ND	ND	ND
Total Nitrate, Nitrite-N, CALC	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			23	22	14	18	6.5	4.9	6.9	5.6	1.7	1.6	0.65	0.56
Carbon Dioxide	mg/l			3.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.6	2.1
General Physical															
Apparent Color	ACU	15	S	**200**	**400**	**150**	**300**	**125**	**150**	**150**	**125**	**30**	**50**	3	3
Lab pH	Units			8.5	8.8	8.7	8.7	8.9	9	8.8	8.9	8.7	8.6	8	8.1
Odor	TON	3	S	**40**	**8**	**16**	**8**	**16**	2	**8**	**4**	**16**	**8**	**8**	**8**
pH of CaCO3 saturation(25C)	Units			7.7	7.9	8.3	7.9	8.5	8.7	8.4	8.5	8.2	8.3	7.6	7.6
pH of CaCO3 saturation(60C)	Units			7.2	7.5	7.9	7.4	8.1	8.2	7.9	8.1	7.8	7.9	7.2	7.2
Specific Conductance	umho/cm	1600	S	1080	895	600	999	352	361	375	358	311	318	401	416
Metal															
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	30	25	ND	ND	27	28	30	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	50	P	3.2	2.4	ND	ND	ND	ND	1	ND	ND	ND	3.3	3.1
Barium, Total, ICAP/MS	ug/l	1000	P	9.8	9.6	7.5	14	4.4	4.7	8.9	9	5	4.8	12	14
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	1.1	1.9	1.3	1.9	1.2	2.3	1.2	1.6	ND	1.4	ND	1.3
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	3	ND	ND	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l			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	0.93	ND	0.53	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	7.8	7.6	6.4	6.9	21	6.8	27	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	100	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			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l			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	1000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	700	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	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 2005/2006

Water Quality 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
				05/16/06	09/20/06	05/16/06	09/20/06	05/16/06	09/20/06	05/16/06	09/20/06	05/16/06	09/20/06
General Mineral													
Total Dissolved Solid (TDS)	mg/l	1000	S	336	334	350	320	364	362	566	518	662	686
Cation Sum	meq/l			5.6	6.1	6.1	6.1	6	6.5	9	9.3	10	11
Anion Sum	meq/l			5.3	5.4	6	5.9	6	6	9.2	8.7	11	10
Iron, Total, ICAP	mg/l	0.3	S	ND	ND	0.19	0.17	ND	ND	ND	ND	ND	ND
Manganese, Total, ICAP/MS	ug/l	50	S	43	46	**57**	**59**	16	16	ND	ND	ND	ND
Turbidity	NTU	5	S	0.25	0.2	1	1	0.15	0.2	0.35	0.3	0.45	0.45
Alkalinity	mg/l			162	164	182	173	181	177	209	197	223	203
Boron	mg/l			0.13	0.18	0.13	0.12	0.13	0.17	0.15	0.2	0.19	0.21
Bicarbonate as HCO3,calculated	mg/l			197	200	222	210	220	220	255	240	272	250
Calcium, Total, ICAP	mg/l			53	55	59	61	60	62	93	94	110	110
Carbonate as CO3, Calculated	mg/l			2	2.1	ND	ND	ND	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			182	190	209	210	212	220	331	330	390	400
Chloride	mg/l	500	S	21	21.6	21	21.9	22	22.2	63	58.1	80	83.5
Fluoride	mg/l	2	P	0.25	0.33	0.39	0.48	0.34	0.43	0.37	0.31	0.39	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	0.8	0.4	0.5	0.6	0.6	0.6	0.6	0.7	0.7
Magnesium, Total, ICAP	mg/l			12	12	15	15	15	16	24	24	28	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	7.7	6.2	**13**	**13**
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	0.4	0.27	ND	ND
Potassium, Total, ICAP	mg/l			3.8	4.1	3.5	3.5	3.2	3.4	4	4.1	4.3	4.6
Sodium, Total, ICAP	mg/l			43	51	41	40	39	47	52	59	57	67
Sulfate	mg/l	500	S	72	72	83	85	85	85	130	130	140	140
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	0.062	ND
Total Nitrate, Nitrite-N, CALC	mg/l			ND	ND	ND	ND	ND	ND	8.1	6.5	13	13
Total Organic Carbon	mg/l			0.39	0.44	ND	ND	ND	ND	0.41	0.47	0.5	0.52
Carbon Dioxide	mg/l			2	2.1	7.3	5.5	4.5	4.5	8.3	7.9	8.9	8.2
General Physical													
Apparent Color	ACU	15	S	3	3	3	ND	3	ND	5	3	**15**	10
Lab pH	Units			8.2	8.2	7.7	7.8	7.9	7.9	7.7	7.7	7.7	7.7
Odor	TON	3	S	2	2	2	2	1	2	1	2	1	2
pH of CaCO3 saturation(25C)	Units			7.4	7.4	7.3	7.3	7.3	7.3	7.1	7.1	7	7
pH of CaCO3 saturation(60C)	Units			7	7	6.9	6.9	6.9	6.9	6.6	6.6	6.5	6.6
Specific Conductance	umho/cm	1600	S	572	560	633	590	606	590	917	840	999	1000
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	50	P	ND	ND	ND	ND	ND	ND	1.3	1.1	ND	ND
Barium, Total, ICAP/MS	ug/l	1000	P	26	28	44	48	61	64	120	120	140	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	**140**	**120**	**420**	**510**
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			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND	5.7	ND	6.8	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	8.1	ND
Volatile Organic Compounds													
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	**23**	**22**	**36**	**46**
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	1.3	1	1.7	1.9
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	100	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	**0.5**
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**	**0.8**
Fluorotrichloromethane-Freon11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l			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	1000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	700	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	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 2005/2006

Water Quality Constituents	Units	MCL	MCL Type	Montebello #1 Zone 1 04/17/06	Montebello #1 Zone 1 09/18/06	Montebello #1 Zone 2 04/17/06	Montebello #1 Zone 2 09/18/06	Montebello #1 Zone 3 04/17/06	Montebello #1 Zone 3 09/18/06	Montebello #1 Zone 4 04/17/06	Montebello #1 Zone 4 09/18/06	Montebello #1 Zone 5 04/17/06	Montebello #1 Zone 5 09/18/06
General Mineral													
Total Dissolved Solid (TDS)	mg/l	1000	S	**2100**	**2160**	874	876	536	554	552	538	508	502
Cation Sum	meq/l			37	36	15	16	9.3	10	8.9	9.3	8.8	8.9
Anion Sum	meq/l			35	36	15	15	8.8	9.2	8.7	8.5	8.6	8.4
Iron, Total, ICAP	mg/l	0.3	S	0.15	0.15	0.19	0.2	0.12	0.11	0.033	0.039	ND	ND
Manganese, Total, ICAP/MS	ug/l	50	S	9	9.1	34	36	**150**	**130**	**78**	**71**	ND	ND
Turbidity	NTU	5	S	1.8	0.75	0.9	0.85	**9.6**	2.8	0.3	0.55	0.2	0.4
Alkalinity	mg/l			842	860	541	550	179	197	180	170	179	169
Boron	mg/l			6.3	6.2	2.2	2.2	0.23	0.36	0.11	0.16	0.24	0.24
Bicarbonate as HCO3,calculated	mg/l			1020	1000	658	670	218	240	219	210	218	210
Calcium, Total, ICAP	mg/l			13	14	17	19	100	98	110	110	87	83
Carbonate as CO3, Calculated	mg/l			11	10	5.4	6.9	ND	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			56.3	60	72.1	80	320	310	349	350	287	280
Chloride	mg/l	500	S	**660**	**663**	130	126	74	81.7	71	69.8	79	79.7
Fluoride	mg/l	2	P	0.53	0.5	0.35	0.35	0.18	0.2	0.19	0.21	0.43	0.42
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.9	0.9	0.7	0.9	0.8	0.9	0.8	0.9	0.4	0.6
Magnesium, Total, ICAP	mg/l			5.8	6.1	7.2	7.8	17	17	18	18	17	17
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	3.6	3.2
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total, ICAP	mg/l			7.9	7.4	5.3	5.7	4	4.1	3.7	3.7	3.5	3.4
Sodium, Total, ICAP	mg/l			810	800	310	320	64	85	42	52	68	74
Sulfate	mg/l	500	S	ND	ND	ND	ND	150	140	150	150	120	120
Surfactants	mg/l	0.5	S	0.057	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Nitrate, Nitrite-N, CALC	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	3.6	3.2
Total Organic Carbon	mg/l			30	31	22	24	1	1.7	0.6	0.93	0.51	0.47
Carbon Dioxide	mg/l			11	10	8.6	6.9	4.5	3.9	4.5	3.4	9	5.5
General Physical													
Apparent Color	ACU	15	S	**500**	**400**	**300**	**150**	10	**15**	3	3	3	ND
Lab pH	Units			8.2	8.2	8.1	8.2	7.9	8	7.9	8	7.6	7.8
Odor	TON	3	S	2	**17**	2	**17**	2	**17**	2	1	2	1
pH of CaCO3 saturation(25C)	Units			7.3	7.3	7.4	7.3	7.1	7.1	7.1	7.1	7.2	7.2
pH of CaCO3 saturation(60C)	Units			6.9	6.8	7	6.9	6.7	6.6	6.6	6.6	6.7	6.8
Specific Conductance	umho/cm	1600	S	**3660**	**3570**	1440	1440	880	927	852	881	857	830
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	50	P	3.5	3.4	1.2	1.5	ND	ND	ND	ND	1.8	1.6
Barium, Total, ICAP/MS	ug/l	1000	P	37	42	24	27	33	37	74	84	55	67
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	2.5	2.2	1.8	1.3	1.3	ND	2.1	ND	ND	1.3
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			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	5.6	ND	6.4	ND	5.5	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	100	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			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l			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	1000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	700	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	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 2005/2006

Water Quality 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
				04/05/06	09/13/06	04/05/06	09/13/06	04/05/06	09/13/06	04/05/06	09/13/06	04/05/06	09/13/06
General Mineral													
Total Dissolved Solid (TDS)	mg/l	1000	S	456	468	308	304	234	238	200	192	410	440
Cation Sum	meq/l			7.7	8.2	5.3	5.4	3.8	3.9	3.4	3.6	7.2	7.2
Anion Sum	meq/l			7.4	7.4	4.9	5	3.8	3.8	2.9	3.2	5.3	7.1
Iron, Total, ICAP	mg/l	0.3	S	ND	ND	ND	ND	ND	ND	0.035	0.031	0.12	0.13
Manganese, Total, ICAP/MS	ug/l	50	S	3.3	2.6	6	6.8	18	18	**68**	**57**	**140**	**140**
Turbidity	NTU	5	S	0.35	0.25	1.8	0.7	0.85	1.1	**5.6**	1.6	**105**	**42**
Alkalinity	mg/l			273	271	155	166	114	110	124	122	184	189
Boron	mg/l			0.37	0.41	0.18	0.2	ND	ND	ND	0.05	0.074	0.083
Bicarbonate as HCO3,calculated	mg/l			330	330	190	200	140	130	150	150	220	230
Calcium, Total, ICAP	mg/l			12	12	8.7	8.8	22	23	25	26	64	65
Carbonate as CO3, Calculated	mg/l			3.4	8.5	4.9	5.2	ND	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			54	56	27	27	63	66	85	88	220	220
Chloride	mg/l	500	S	68	67.2	61	59.2	44	45.5	10	17.2	57	113
Fluoride	mg/l	2	P	0.46	0.63	0.57	0.75	0.29	0.38	0.24	0.36	0.23	0.37
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.4	0.8	0.4	0.4	0.2	-0.1	0.2	0	0.5	0.5
Magnesium, Total, ICAP	mg/l			5.9	6.4	1.2	1.3	2	2	5.5	5.6	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	2.7	1.1	1.6	1.7	2.1	1.7	2	3	3.6
Sodium, Total, ICAP	mg/l			150	160	110	110	57	59	39	40	62	60
Sulfate	mg/l	500	S	ND	4.8	ND	ND	15	13	5.6	11	2.2	4
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	0.17	0.15
Total Nitrate, Nitrite-N, CALC	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			2.4	2.8	2.7	2.9	0.4	0.47	1.1	0.35	2.6	1.6
Carbon Dioxide	mg/l			3.4	ND	ND	ND	ND	2.7	2	3.1	5.7	6
General Physical													
Apparent Color	ACU	15	S	**25**	**35**	**35**	**40**	3	3	5	3	10	5
Lab pH	Units			8.2	8.6	8.6	8.6	8.2	7.9	8.1	7.9	7.8	7.8
Odor	TON	3	S	**40**	**17**	**4**	**3**	**3**	**3**	**4**	**3**	**4**	**8**
pH of CaCO3 saturation(25C)	Units			7.8	7.8	8.2	8.2	8	8	7.9	7.9	7.3	7.3
pH of CaCO3 saturation(60C)	Units			7.4	7.4	7.8	7.8	7.5	7.5	7.4	7.4	6.8	6.8
Specific Conductance	umho/cm	1600	S	801	768	539	511	377	392	335	324	770	724
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	50	P	ND	ND	ND	ND	11	8.2	17	17	18	15
Barium, Total, ICAP/MS	ug/l	1000	P	12	14	5.7	7.6	68	72	72	85	280	280
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	1.4	1.9	ND	1.1	ND	ND	ND	ND	1.1	1.2
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			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	14	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	100	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			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l			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	1000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.7
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	700	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	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 2005/2006

Water Quality Constituents	Units	MCL	MCL Type	Pico #1	Pico #1	Pico #1	Pico #1	Pico #1	Pico #1
				Zone 2	Zone 2	Zone 3	Zone 3	Zone 4	Zone 4
				05/04/06	09/29/06	05/04/06	09/29/06	05/04/06	09/29/06
General Mineral									
Total Dissolved Solid (TDS)	mg/l	1000	S	380	332	580	578	650	628
Cation Sum	meq/l			5.8	5.4	9.3	8.9	10	10
Anion Sum	meq/l			5.8	5.4	9	10	9.6	9.4
Iron, Total, ICAP	mg/l	0.3	S	0.29	0.24	**0.45**	**0.35**	ND	ND
Manganese, Total, ICAP/MS	ug/l	50	S	31	30	25	21	2.3	ND
Turbidity	NTU	5	S	1.8	1.8	**5**	3.4	0.15	0.15
Alkalinity	mg/l			168	162	154	193	166	184
Boron	mg/l			0.081	0.077	0.24	0.13	0.22	0.21
Bicarbonate as HCO3,calculated	mg/l			205	200	188	240	202	220
Calcium, Total, ICAP	mg/l			73	67	85	110	110	110
Carbonate as CO3, Calculated	mg/l			ND	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			236	220	286	360	361	360
Chloride	mg/l	500	S	25	23	92	104	100	76.4
Fluoride	mg/l	2	P	0.29	0.24	0.27	0.25	0.28	0.22
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.6	0.7	0.2	0.8	0.5	0.7
Magnesium, Total, ICAP	mg/l			13	12	18	20	21	20
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	ND	1.9	1.6	ND
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND
Potassium, Total, ICAP	mg/l			3	2.9	4.8	4.2	5	5.1
Sodium, Total, ICAP	mg/l			23	22	79	39	65	66
Sulfate	mg/l	500	S	82	74	160	160	160	170
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND
Total Nitrate, Nitrite-N, CALC	mg/l			ND	ND	ND	1.9	1.6	ND
Total Organic Carbon	mg/l			ND	ND	0.62	0.61	0.55	0.62
Carbon Dioxide	mg/l			4.2	3.3	12	6.2	8.3	5.7
General Physical									
Apparent Color	ACU	15	S	5	5	10	10	3	ND
Lab pH	Units			7.9	8	7.4	7.8	7.6	7.8
Odor	TON	3	S	1	**3**	1	2	1	1
pH of CaCO3 saturation(25C)	Units			7.3	7.3	7.2	7	7.1	7.1
pH of CaCO3 saturation(60C)	Units			6.8	6.9	6.8	6.6	6.7	6.6
Specific Conductance	umho/cm	1600	S	586	540	960	900	1020	1000
Metal									
Aluminum, Total, ICAP/MS	ug/l	1000	P	30	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	50	P	ND	ND	ND	ND	2.8	2.7
Barium, Total, ICAP/MS	ug/l	1000	P	85	84	52	47	62	63
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	2.2	ND	2.8	ND	3	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			ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	5.3	ND	7.6	ND	9.4	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	100	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			ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l			ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l			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	1000	S	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	700	P	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	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 2005/2006

Water Quality Constituents	Units	MCL	MCL Type	Pico #2 Zone 1 03/29/06	Pico #2 Zone 1 09/25/06	Pico #2 Zone 2 03/29/06	Pico #2 Zone 2 09/25/06	Pico #2 Zone 3 03/29/06	Pico #2 Zone 3 09/25/06	Pico #2 Zone 4 03/29/06	Pico #2 Zone 4 09/25/06	Pico #2 Zone 5 03/29/06	Pico #2 Zone 5 09/25/06	Pico #2 Zone 6 03/29/06	Pico #2 Zone 6 09/25/06
General Mineral															
Total Dissolved Solid (TDS)	mg/l	1000	S	500	504	350	566	504	494	510	500	440	396	510	508
Cation Sum	meq/l			8.2	8.7	9.6	9.7	8.5	8.6	8.5	8.3	7.4	7.1	8.3	8.4
Anion Sum	meq/l			8.4	8.5	9.6	9.4	8.6	8.2	8.4	8.1	7.6	6.8	8.3	8.3
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	ND	ND	2.9	3	4	24	24	**700**	**700**
Turbidity	NTU	5	S	0.4	0.65	0.55	0.55	1.1	1	0.4	0.3	0.1	1.1	0.2	0.35
Alkalinity	mg/l			198	196	209	212	189	180	148	141	133	127	118	111
Boron	mg/l			ND	0.071	0.13	0.14	0.11	0.15	0.23	0.26	0.23	0.28	0.17	0.19
Bicarbonate as HCO3,calculated	mg/l			240	240	250	260	230	220	180	170	160	150	140	140
Calcium, Total, ICAP	mg/l			100	110	120	120	100	100	72	70	54	51	56	62
Carbonate as CO3, Calculated	mg/l			2	ND	2	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			340	360	400	400	330	330	240	240	200	180	210	230
Chloride	mg/l	500	S	46	50.1	72	72	65	63.9	95	96.2	84	75.2	100	109
Fluoride	mg/l	2	P	0.32	0.29	0.28	0.31	0.34	0.37	0.4	0.41	0.48	0.46	0.3	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			1	0.9	1.1	0.8	1	0.7	0.7	0.3	0.4	0	0.3	0
Magnesium, Total, ICAP	mg/l			22	21	24	25	20	20	15	15	15	14	17	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	3	3.1	3.3	3.2	3.4	3.3	3.7	4.1	2.9	3	2.1	0.38
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			4.8	4.6	3.9	4.2	4.1	4.3	4.1	4.4	4.2	4.4	7.3	7.3
Sodium, Total, ICAP	mg/l			29	30	35	36	41	42	82	80	77	75	91	82
Sulfate	mg/l	500	S	140	140	150	140	130	120	120	110	110	90	140	140
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			3	3.1	3.3	3.2	3.4	3.3	3.7	4.1	2.9	3	2.1	0.38
Total Organic Carbon	mg/l			0.35	0.35	0.4	0.39	0.41	0.4	0.87	0.76	0.97	1	1.2	1.5
Carbon Dioxide	mg/l			3.1	5	3.3	6.8	3	5.7	3	5.6	3.3	6.2	2.9	7.3
General Physical															
Apparent Color	ACU	15	S	ND	ND	ND	ND	ND	ND	ND	ND	3	ND	5	3
Lab pH	Units			8.1	7.9	8.1	7.8	8.1	7.8	8	7.7	7.9	7.6	7.9	7.5
Odor	TON	3	S	1	1	1	1	1	2	1	2	1	1	1	1
pH of CaCO3 saturation(25C)	Units			7.1	7	7	7	7.1	7.1	7.3	7.4	7.5	7.6	7.6	7.5
pH of CaCO3 saturation(60C)	Units			6.6	6.6	6.5	6.5	6.6	6.7	6.9	6.9	7.1	7.1	7.1	7.1
Specific Conductance	umho/cm	1600	S	807	830	930	930	840	820	875	840	765	710	863	880
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	50	P	2.6	1.9	2.6	2.3	1.8	1.8	2.7	2.7	1.1	1.1	18	13
Barium, Total, ICAP/MS	ug/l	1000	P	130	170	120	130	120	130	60	60	73	71	150	170
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	2.4	1.9	1.6	ND	1.9	1.4	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	2.2	2.6	2.6	4.4
Lead, Total, ICAP/MS	ug/l			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	0.7	3	3.1	**8.4**	**7.9**	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	100	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			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l			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	1000	S	ND	ND	ND	ND	ND	0.7	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	700	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	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 2005/2006

Water Quality 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
				03/29/06	09/25/06	03/29/06	09/25/06	03/29/06	09/25/06	03/29/06	09/25/06	03/29/06	09/25/06	03/29/06	09/25/06
General Mineral															
Total Dissolved Solid (TDS)	mg/l	1000	S	240	272	446	424	428	452	464	452	340	292	194	206
Cation Sum	meq/l			4.6	4.6	7.7	7.8	7.4	8	7.6	7.9	5.7	5.2	3.9	3.6
Anion Sum	meq/l			4.4	4.3	7.7	7.9	7.8	7.8	7.8	7.9	5.7	5.1	3.9	3.5
Iron, Total, ICAP	mg/l	0.3	S	ND	ND	0.066	0.07	ND	ND	ND	ND	ND	ND	ND	ND
Manganese, Total, ICAP/MS	ug/l	50	S	31	39	36	39	ND	ND	ND	ND	ND	ND	ND	ND
Turbidity	NTU	5	S	**6.3**	2.7	0.8	1	0.35	0.35	0.75	1.6	1.2	1.5	1.7	4.3
Alkalinity	mg/l			142	130	163	158	170	168	131	131	109	100	100	83
Boron	mg/l			0.051	0.075	ND	0.063	0.15	0.16		0.2	0.15	0.17	0.1	0.1
Bicarbonate as HCO3,calculated	mg/l			170	160	200	190	210	200	160	160	130	120	120	100
Calcium, Total, ICAP	mg/l			41	41	100	100	81	88	71	73	51	45	28	25
Carbonate as CO3, Calculated	mg/l			2.8	ND	ND	ND	2.2	ND	ND	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			140	140	320	320	260	290	230	240	170	150	99	90
Chloride	mg/l	500	S	18	19.8	55	56.7	61	63.1	87	91.2	56	47.4	26	30.1
Fluoride	mg/l	2	P	0.2	0.28	0.17	0.24	0.25	0.34	0.29	0.4	0.31	0.36	0.29	0.37
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.8	0.6	1	0.8	1	0.6	0.8	0.4	0.4	0	0.3	-0.4
Magnesium, Total, ICAP	mg/l			8.4	8.5	18	18	15	16	14	14	11	9.6	7.1	6.7
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	2.2	2.3	3	3.1	2.4	2	1	1.2
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	3.2	3.5	3.9	3.7	4.2	3.9	4.4	3.3	3.4	2.9	3.1
Sodium, Total, ICAP	mg/l			40	41	27	27	47	51	64	68	50	47	42	39
Sulfate	mg/l	500	S	51	52	140	150	120	120	120	120	85	77	50	41
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			ND	ND	ND	ND	2.2	2.3	3	3.1	2.4	2	1	1.2
Total Organic Carbon	mg/l			0.35	0.52	ND	0.31	0.49	0.43	0.68	0.69	0.39	0.44	0.46	0.48
Carbon Dioxide	mg/l			ND	ND	2.6	3.1	2.2	5.2	ND	4.2	2.1	3.9	ND	4.1
General Physical															
Apparent Color	ACU	15	S	3	3	3	3	3	3	3	ND	ND	3	3	3
Lab pH	Units			8.4	8.2	8.1	8	8.2	7.8	8.2	7.8	8	7.7	8.2	7.6
Odor	TON	3	S	2	2	2	1	2	1	2	2	1	1	1	1
pH of CaCO3 saturation(25C)	Units			7.6	7.6	7.1	7.2	7.2	7.2	7.4	7.4	7.6	7.7	7.9	8
pH of CaCO3 saturation(60C)	Units			7.2	7.2	6.7	6.7	6.8	6.7	6.9	6.9	7.2	7.3	7.5	7.6
Specific Conductance	umho/cm	1600	S	455	440	765	750	769	760	806	783	601	520	376	360
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	50	P	2.6	1.6	ND	ND	2.5	2.1	2.7	2.3	2.1	1.7	1.4	1.3
Barium, Total, ICAP/MS	ug/l	1000	P	23	25	52	56	120	130	61	65	44	42	43	47
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			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	100	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			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l			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	1000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	700	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	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 2005/2006

Water Quality 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
				05/18/06	09/26/06	05/18/06	09/26/06	05/18/06	09/26/06	05/18/06	09/26/06	05/18/06	09/26/06
General Mineral													
Total Dissolved Solid (TDS)	mg/l	1000	S	316	306	416	410	414	392	438	404	448	532
Cation Sum	meq/l			5.2	5.2	7.2	6.5	6.7	6.7	7.1	7.2	10	9.2
Anion Sum	meq/l			5.1	5.1	6.6	6.7	6.6	6.6	6.5	7.2	9.3	9.2
Iron, Total, ICAP	mg/l	0.3	S	0.05	0.043	ND	ND	ND	ND	ND	ND	0.073	0.065
Manganese, Total, ICAP/MS	ug/l	50	S	**63**	**69**	ND	ND	ND	ND	ND	ND	**120**	**140**
Turbidity	NTU	5	S	0.25	0.35	0.2	0.3	0.2	0.5	0.2	0.1	0.35	0.5
Alkalinity	mg/l			166	161	121	137	138	153	132	158	194	188
Boron	mg/l			0.14	0.12	0.17	0.15	0.12	0.13	0.17	0.18	0.19	0.15
Bicarbonate as HCO3,calculated	mg/l			200	200	162	170	190	190	158	190	235	230
Calcium, Total, ICAP	mg/l			50	50	81	70	74	75	75	76	110	96
Carbonate as CO3, Calculated	mg/l			2.1	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			158	160	260	230	247	250	249	250	386	340
Chloride	mg/l	500	S	20	22.7	52	52	44	45	49	54.9	110	110
Fluoride	mg/l	2	P	0.31	0.31	0.33	0.32	0.39	0.38	0.39	0.39	0.43	0.43
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.8	0.7	0.7	0.6	0.6	0.6	0.4	0.6	0.9	0.8
Magnesium, Total, ICAP	mg/l			8	8	14	13	15	15	15	15	27	25
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	2.5	2.5	2.5	2.4	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			2.3	2.4	3.3	3.2	2.8	2.7	2.9	3	3.1	2.9
Sodium, Total, ICAP	mg/l			46	45	44	43	38	37	47	47	55	53
Sulfate	mg/l	500	S	57	58	110	110	100	100	110	110	110	110
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND		ND	ND
Total Nitrate, Nitrite-N, CALC	mg/l			ND	ND	2.5	2.5	2.5	2.4	2.2	2.2	ND	ND
Total Organic Carbon	mg/l			ND	0.31	ND	0.44	ND	ND	ND	0.36	0.59	0.65
Carbon Dioxide	mg/l			2.1	2.6	2.7	2.8	3.9	3.9	4.1	3.9	4.9	4.7
General Physical													
Apparent Color	ACU	15	S	ND	3	ND	3	ND	ND	ND	ND	3	3
Lab pH	Units			8.2	8.1	8	8	7.9	7.9	7.8	7.9	7.9	7.9
Odor	TON	3	S	**3**	**3**	1	2	2	2	2	1	1	2
pH of CaCO3 saturation(25C)	Units			7.4	7.4	7.3	7.4	7.3	7.3	7.4	7.3	7	7.1
pH of CaCO3 saturation(60C)	Units			7	7	6.9	6.9	6.9	6.9	6.9	6.8	6.6	6.7
Specific Conductance	umho/cm	1600	S	505	480	672	640	662	630	717	690	945	910
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	50	P	1.7	1.8	2.5	2.3	2.7	2.6	1.7	1.8	2.4	2.1
Barium, Total, ICAP/MS	ug/l	1000	P	120	130	87	94	140	150	66	74	200	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	4.8	2.9	4.5	3.1	5.9	4	4.1	3.6	5.2	3.5
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			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	5.2	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	0.8	0.8	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	0.9	0.7	**6.2**	**5.3**	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	100	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			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l			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	1000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	700	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	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 2005/2006

Water Quality Constituents	Units	MCL	MCL Type	Whittier #1	Whittier #1	Whittier #1	Whittier #1	Whittier #1	Whittier #1	Whittier #1	Whittier #1	Whittier #1	Whittier #1
				Zone 1	Zone 1	Zone 2	Zone 2	Zone 3	Zone 3	Zone 4	Zone 4	Zone 5	Zone 5
				05/02/06	09/13/06	05/02/06	09/13/06	05/02/06	09/13/06	05/02/06	09/13/06	05/02/06	09/13/06
General Mineral													
Total Dissolved Solid (TDS)	mg/l	1000	S	**2480**	**2102**	**1830**	**1960**	**1750**	**1440**	640	646	696	650
Cation Sum	meq/l			40	41	39	40	27	26	12	11	11	11
Anion Sum	meq/l			40	34	39	33	25	28	11	11	11	11
Iron, Total, ICAP	mg/l	0.3	S	**0.56**	**0.55**	**0.44**	**0.43**	0.29	0.29	ND	ND	ND	ND
Manganese, Total, ICAP/MS	ug/l	50	S	**70**	**77**	**98**	**110**	**98**	**97**	16	18	9.5	9.7
Turbidity	NTU	5	S	4.8	3.7	2.9	3.1	2.4	1.8	0.1	0.2	1.3	0.4
Alkalinity	mg/l			225	253	271	278	257	286	234	246	211	226
Boron	mg/l			0.88	0.89	0.96	0.97	0.63	0.64	0.21	0.2	0.17	0.16
Bicarbonate as HCO3,calculated	mg/l			274	310	330	340	313	350	285	300	257	280
Calcium, Total, ICAP	mg/l			190	200	190	190	160	160	80	81	81	83
Carbonate as CO3, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			1010	1000	1010	1000	766	780	348	350	363	370
Chloride	mg/l	500	S	260	278	230	239	185	188	79	76	84	80.3
Fluoride	mg/l	2	P	0.21	0.32	0.22	0.33	0.42	0.53	0.14	0.23	0.24	0.37
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			1	1.2	1	1.3	1	1	0.5	0.9	0.6	0.8
Magnesium, Total, ICAP	mg/l			130	130	130	130	89	92	36	36	39	40
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	4.2	4.1	4.9	4.9
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total, ICAP	mg/l			11	11	10	10	7	7	4.2	4	3.5	3.5
Sodium, Total, ICAP	mg/l			460	470	430	450	270	240	110	96	89	80
Sulfate	mg/l	500	S	**1373**	**1000**	**1298**	**1000**	**713**	**800**	180	170	178	170
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Nitrate, Nitrite-N, CALC	mg/l			ND	ND	ND	ND	ND	ND	4.2	4.1	4.9	4.9
Total Organic Carbon	mg/l			1.7	1.6	2.1	2	1.2	1.2	ND	ND	ND	ND
Carbon Dioxide	mg/l			9	6.4	14	7	10	11	12	4.9	8.4	5.8
General Physical													
Apparent Color	ACU	15	S	**15**	**20**	**15**	**15**	10	10	ND	ND	ND	ND
Lab pH	Units			7.7	7.9	7.6	7.9	7.7	7.7	7.6	8	7.7	7.9
Odor	TON	3	S	1	2	1	2	1	2	1	1	1	1
pH of CaCO3 saturation(25C)	Units			6.7	6.7	6.6	6.6	6.7	6.7	7.1	7.1	7.1	7.1
pH of CaCO3 saturation(60C)	Units			6.3	6.2	6.2	6.2	6.3	6.3	6.6	6.6	6.7	6.6
Specific Conductance	umho/cm	1600	S	**3510**	**3440**	**3360**	**3240**	**2420**	**2320**	1000	1070	999	1040
Metal													
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	ND	ND	ND	ND	ND	29	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	50	P	ND	ND	ND	ND	ND	ND	1.5	1.5	ND	ND
Barium, Total, ICAP/MS	ug/l	1000	P	16	19	16	22	21	25	31	37	26	31
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	2.4	ND	1.7	ND	2.5	ND	2.4	3.3	5.3
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			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	12	8.9	13	8.7	11	6.7	5.5	ND	5.7	ND
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	17	17	20	21
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	7.2	ND	5.1	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	100	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			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l			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	1000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	700	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	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 2005/2006

Water Quality Constituents	Units	MCL	MCL Type	Whittier Narrows #1 Zone 1 09/20/06	Whittier Narrows #1 Zone 2 09/20/06	Whittier Narrows #1 Zone 3 09/20/06	Whittier Narrows #1 Zone 4 09/20/06	Whittier Narrows #1 Zone 5 09/21/06	Whittier Narrows #1 Zone 6 09/21/06	Whittier Narrows #1 Zone 7 09/21/06	Whittier Narrows #1 Zone 8 09/21/06	Whittier Narrows #1 Zone 9 09/21/06
General Mineral												
Total Dissolved Solid (TDS)	mg/l	1000	S	**1280**	202	386	418	336	536	510	506	522
Cation Sum	meq/l			19	3.9	6.1	7.2					8.8
Anion Sum	meq/l			21	3.4	5.8	7.1					8.5
Iron, Total, ICAP	mg/l	0.3	S	**8.2**	0.024	0.025	0.045	ND	ND	ND	ND	ND
Manganese, Total, ICAP/MS	ug/l	50	S	**580**	18	ND	2.9	ND	16	17	16	14
Turbidity	NTU	5	S	**72**	0.2	**18**	1					0.75
Alkalinity	mg/l			67	110	134	142	123	146	143	155	151
Boron	mg/l			0.92	0.19	0.065	0.067	ND	0.25	0.25	0.28	0.25
Bicarbonate as HCO3,calculated	mg/l			82	130	160	170	150	180	170	190	180
Calcium, Total, ICAP	mg/l			61	12	81	95	66	92	76	77	76
Carbonate as CO3, Calculated	mg/l			ND	ND	ND	ND	ND	2.3	2.2	ND	ND
Hardness (Total, as CaCO3)	mg/l			210	32	240	290	210	300	250	250	250
Chloride	mg/l	500	S	**689**	35.8	42.8	65.1	33.5	101	99.1	94.3	99.9
Fluoride	mg/l	2	P	0.85	0.47	0.29	0.3	0.29	0.26	0.28	0.34	0.3
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND					ND
Langelier Index - 25 degree	None			-0.7	-0.2	0.6	0.8					0.7
Magnesium, Total, ICAP	mg/l			13	0.54	8	12	11	17	14	14	15
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	1.5	1.4	1.1	ND	ND	2.1	2.1
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total, ICAP	mg/l			4.3	1.8	2.6	4	3.7	6.3	5.4	5.3	5.3
Sodium, Total, ICAP	mg/l			350	74	31	32	24	61	85	91	83
Sulfate	mg/l	500	S	ND	8.8	88	110	72	120	120	120	120
Surfactants	mg/l	0.5	S	ND	ND	ND	0.056	0.065	0.067	0.056	0.085	0.084
Total Nitrate, Nitrite-N, CALC	mg/l			ND	ND	1.5	1.4					2.1
Total Organic Carbon	mg/l			8.6	0.58	0.54	0.53	0.39	1	1.1	1.4	1.3
Carbon Dioxide	mg/l			13	ND	3.3	2.8					3
General Physical												
Apparent Color	ACU	15	S	**20**	3	ND	3	ND	3	3	3	3
Lab pH	Units			7	8.1	7.9	8	8.2	8.3	8.3	8	8
Odor	TON	3	S	**17**	**8**	1	1					**4**
pH of CaCO3 saturation(25C)	Units			7.7	8.3	7.3	7.2					7.3
pH of CaCO3 saturation(60C)	Units			7.3	7.8	6.9	6.8					6.9
Specific Conductance	umho/cm	1600	S	**2400**	370	600	690	510	850	870	940	890
Metal												
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	50	P	6.5	2.4	1.2	1.7	1.8	1.3	1.8	1.8	1.7
Barium, Total, ICAP/MS	ug/l	1000	P	460	26	170	180	130	160	130	83	68
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	2.4	ND	3.9	2.6	1.6	ND	ND	ND	ND
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	2.4	2.7
Lead, Total, ICAP/MS	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	5.2	ND	ND	12	8.6	14	22	24	14
Selenium, Total, ICAP/MS	ug/l	50	P	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
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	41	7.8	ND	8.2	7.5	8.2	ND	220	28
Volatile Organic Compounds												
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	0.9	0.6	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	0.9	0.7	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	100	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			ND	ND	ND	ND					ND
Isopropylbenzene	ug/l			ND	ND	ND	ND					ND
n-Propylbenzene	ug/l			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	0.7	ND
Dichlorodifluoromethane	ug/l	1000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	700	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	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 2005/2006

Water Quality 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
				04/18/06	09/21/06	04/18/06	09/21/06	04/18/06	09/21/06	04/18/06	09/21/06
General Mineral											
Total Dissolved Solid (TDS)	mg/l	1000	S	336	336	322	322	332	330	320	346
Cation Sum	meq/l			6.2	6	5.7	5.5	6	5.9	6	5.8
Anion Sum	meq/l			5.8	5.7	5.3	5.2	5.6	5.4	5.6	5.5
Iron, Total, ICAP	mg/l	0.3	S	0.051	0.053	ND	ND	0.067	0.068	ND	ND
Manganese, Total, ICAP/MS	ug/l	50	S	**54**	**57**	**50**	**51**	35	35	ND	**91**
Turbidity	NTU	5	S	0.15	0.55	0.2	0.1	0.25	0.45	**105**	**20**
Alkalinity	mg/l			220	213	157	157	175	168	175	171
Boron	mg/l			0.19	0.18	0.12	0.094	0.12	0.11	0.13	0.1
Bicarbonate as HCO3,calculated	mg/l			267	260	191	190	213	200	213	210
Calcium, Total, ICAP	mg/l			45	43	57	55	59	58	59	58
Carbonate as CO3, Calculated	mg/l			2.7	2.1	ND	2	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			151	140	184	180	201	200	189	190
Chloride	mg/l	500	S	17	17.7	22	20.6	20	20	23	22.6
Fluoride	mg/l	2	P	0.32	0.43	0.34	0.33	0.5	0.44	0.44	0.39
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	0.8	0.6	0.8	0.7
Magnesium, Total, ICAP	mg/l			9.5	9.1	10	10	13	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			4.6	4.5	2.8	2.7	3.5	3.4	3.1	3
Sodium, Total, ICAP	mg/l			71	68	45	43	43	42	49	46
Sulfate	mg/l	500	S	43	45	74	72	72	72	69	69
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND
Total Nitrate, Nitrite-N, CALC	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			1.7	1.7	0.33	0.36	ND	ND	0.44	ND
Carbon Dioxide	mg/l			2.8	3.4	2	2	2.8	3.3	2.8	2.7
General Physical											
Apparent Color	ACU	15	S	**15**	**15**	3	3	3	3	3	3
Lab pH	Units			8.2	8.1	8.2	8.2	8.1	8	8.1	8.1
Odor	TON	3	S	**3**	**8**	2	2	2	2	2	**8**
pH of CaCO3 saturation(25C)	Units			7.4	7.4	7.4	7.4	7.3	7.4	7.3	7.4
pH of CaCO3 saturation(60C)	Units			6.9	7	7	7	6.9	6.9	6.9	6.9
Specific Conductance	umho/cm	1600	S	581	600	541	530	553	540	557	550
Metal											
Aluminum, Total, ICAP/MS	ug/l	1000	P	27	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	50	P	12	10	ND	ND	3.5	3.4	6.8	6.8
Barium, Total, ICAP/MS	ug/l	1000	P	47	50	48	54	63	74	ND	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			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	5.2	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	100	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			ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l			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	1000	S	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	700	P	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	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 2005/2006

Water Quality Constituents	Units	MCL	MCL Type	Carson #1	Carson #1	Carson #1	Carson #1	Carson #1	Carson #1	Carson #1	Carson #1
				Zone 1	Zone 1	Zone 2	Zone 2	Zone 3	Zone 3	Zone 4	Zone 4
				03/17/06	08/30/06	03/17/06	08/30/06	03/17/06	08/30/06	03/17/06	08/30/06
Total Dissolved Solid (TDS)	mg/l	1000	S	224	214	244	248	330	318	390	382
Cation Sum	meq/l			3.6	3.5	4.1	4.1	5.4	5.4	6.4	6.3
Anion Sum	meq/l			3.8	3.6	3.8	3.2	4	4.5	5	5.6
Iron, Total, ICAP	mg/l	0.3	S	ND	ND	ND	0.021	ND	ND	0.041	0.047
Manganese, Total, ICAP/MS	ug/l	50	S	29	28	19	19	31	31	**83**	**80**
Turbidity	NTU	5	S	0.65	0.45	0.2	0.25	0.05	0.1	**5.8**	0.9
Alkalinity	mg/l			146	151	157	130	166	122	186	145
Boron	mg/l			0.1	0.099	0.12	0.11	0.12	0.11	0.14	0.12
Bicarbonate as HCO3,calculated	mg/l			180	180	190	160	200	150	230	180
Calcium, Total, ICAP	mg/l			21	21	32	33	45	45	52	52
Carbonate as CO3, Calculated	mg/l			ND	2.3	3.1	2.1	2.1	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			70	70	110	110	160	170	190	190
Chloride	mg/l	500	S	18	21.4	23	22.1	23	23.6	43	39
Fluoride	mg/l	2	P	0.2	0.23	0.17	0.2	0.25	0.27	0.36	0.37
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.3	0.4	0.7	0.6	0.7	0.6	0.6	0.6
Magnesium, Total, ICAP	mg/l			4.3	4.3	6.7	7	12	13	14	14
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	1.6	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	2.6	2.3	2.3	2.8	2.8	3.7	3.5
Sodium, Total, ICAP	mg/l			50	47	44	42	48	46	59	56
Sulfate	mg/l	500	S	14	ND	ND	ND	ND	67	ND	75
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND
Total Nitrate, Nitrite-N, CALC	mg/l			1.6	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			0.68	0.77	0.41	0.58	0.31	0.33	0.36	0.36
Carbon Dioxide	mg/l			ND	ND	ND	ND	2.1	ND	3.8	2.3
General Physical											
Apparent Color	ACU	15	S	5	10	ND	5	ND	3	3	3
Lab pH	Units			8.2	8.3	8.4	8.3	8.2	8.2	8	8.1
Odor	TON	3	S	2	2	**3**	2	2	2	**3**	2
pH of CaCO3 saturation(25C)	Units			7.9	7.9	7.7	7.7	7.5	7.6	7.4	7.5
pH of CaCO3 saturation(60C)	Units			7.4	7.4	7.2	7.3	7	7.2	6.9	7
Specific Conductance	umho/cm	1600	S	359	349	395	395	522	515	618	610
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	50	P	1.1	1.1	ND	ND	ND	ND	ND	ND
Barium, Total, ICAP/MS	ug/l	1000	P	19	18	39	37	70	70	220	210
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	1.3	2.4	1.5	3.1	1.5	3	2	2.9
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			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	100	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			ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l			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	1000	S	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	700	P	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	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 2005/2006

Water Quality Constituents	Units	MCL	MCL Type	Carson #2 Zone 1 03/24/06	Carson #2 Zone 1 08/18/06	Carson #2 Zone 2 03/24/06	Carson #2 Zone 2 08/18/06	Carson #2 Zone 3 03/24/06	Carson #2 Zone 3 08/18/06	Carson #2 Zone 4 03/24/06	Carson #2 Zone 4 08/18/06	Carson #2 Zone 5 03/24/06	Carson #2 Zone 5 08/18/06
Total Dissolved Solid (TDS)	mg/l	1000	S	242	278	268	322	276	290	270	280	282	274
Cation Sum	meq/l			3.9	4.2	4.4	4.9	4.7	5	4.4	4.8	4.5	4.8
Anion Sum	meq/l			3.4	3	4	4.3	4.7	4.1	4.4	4.1	4.5	4.2
Iron, Total, ICAP	mg/l	0.3	S	0.045	ND	ND	ND	0.02	ND	ND	ND	0.023	0.056
Manganese, Total, ICAP/MS	ug/l	50	S	3.6	3.2	10	11	18	19	14	15	**61**	**59**
Turbidity	NTU	5	S	0.45	0.5	0.15	0.2	0.1	0.2	0.75	0.3	**39**	0.25
Alkalinity	mg/l			142	124	170	186	175	156	190	177	177	163
Boron	mg/l			0.14	0.19	0.14	0.16	0.13	0.17	0.12	0.14	0.11	0.13
Bicarbonate as HCO3,calculated	mg/l			170	150	210	220	210	190	230	210	210	200
Calcium, Total, ICAP	mg/l			3.2	2.8	11	12	25	26	33	35	40	42
Carbonate as CO3, Calculated	mg/l			2.8	ND	4.3	7.2	3.4	3.1	3	2.7	2.7	2.1
Hardness (Total, as CaCO3)	mg/l			10	9	43	46	97	100	130	140	140	140
Chloride	mg/l	500	S	19	18.3	21	20.4	23	21.3	22	20.9	21	20.2
Fluoride	mg/l	2	P	0.33	0.35	0.17	0.19	0.29	0.29	0.25	0.25	0.3	0.31
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	0.4	0.7	0.7	0.6	0.7	0.7	0.8	0.7
Magnesium, Total, ICAP	mg/l			0.55	0.48	3.8	4	8.3	8.6	11	12	9.3	9.6
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			2.2	2.1	3.7	4.3	4.1	4.6	3.8	4.2	3.2	3.5
Sodium, Total, ICAP	mg/l			84	91	79	89	61	66	41	45	39	42
Sulfate	mg/l	500	S	ND	ND	ND	ND	24	19	ND	ND	17	16
Surfactants	mg/l	0.5	S	ND	0.053	ND	ND	ND	ND	ND	ND	ND	ND
Total Nitrate, Nitrite-N, CALC	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			1.6	2.5	1	1.1	0.63	0.64	0.62	0.6	ND	0.31
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	2.1
General Physical													
Apparent Color	ACU	15	S	**35**	**40**	**20**	**20**	5	5	ND	5	3	3
Lab pH	Units			8.4	8.3	8.5	8.7	8.4	8.4	8.3	8.3	8.3	8.2
Odor	TON	3	S	**3**	2	**4**	**3**	**3**	2	**3**	**4**	2	**3**
pH of CaCO3 saturation(25C)	Units			8.7	8.8	8.1	8	7.7	7.8	7.6	7.6	7.5	7.5
pH of CaCO3 saturation(60C)	Units			8.3	8.4	7.6	7.6	7.3	7.3	7.1	7.1	7.1	7.1
Specific Conductance	umho/cm	1600	S	373	386	438	437	458	460	433	430	438	443
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	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium, Total, ICAP/MS	ug/l	1000	P	ND	ND	6.1	6.3	11	13	16	17	15	19
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	4.4	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			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	100	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			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l			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	1000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	700	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	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 2005/2006

Water Quality Constituents	Units	MCL	MCL Type	Chandler #3b	Chandler #3b	Chandler #3a	Chandler #3a
				Zone 1	Zone 1	Zone 2	Zone 2
				04/13/06	09/21/06	04/13/06	09/21/06
Total Dissolved Solid (TDS)	mg/l	1000	S	620	578	**1130**	**1280**
Cation Sum	meq/l			11	10	18	21
Anion Sum	meq/l			10	10	19	20
Iron, Total, ICAP	mg/l	0.3	S	0.23	0.17	ND	0.061
Manganese, Total, ICAP/MS	ug/l	50	S	**84**	**79**	17	25
Turbidity	NTU	5	S	1.2	1.2	**7**	2.3
Alkalinity	mg/l			320	312	413	388
Boron	mg/l			0.19	0.22	0.35	0.41
Bicarbonate as HCO3,calculated	mg/l			389	380	503	470
Calcium, Total, ICAP	mg/l			74	69	170	200
Carbonate as CO3, Calculated	mg/l			2.5	2.5	ND	ND
Hardness (Total, as CaCO3)	mg/l			275	260	606	710
Chloride	mg/l	500	S	140	133	220	246
Fluoride	mg/l	2	P	0.26	0.46	0.19	0.23
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND
Langelier Index - 25 degree	None			1	1	1.2	1
Magnesium, Total, ICAP	mg/l			22	21	44	52
Mercury	ug/l	2	P	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	**27**	**30**
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND
Potassium, Total, ICAP	mg/l			3	3.2	3.9	4.4
Sodium, Total, ICAP	mg/l			120	120	140	160
Sulfate	mg/l	500	S	ND	ND	110	150
Surfactants	mg/l	0.5	S	ND	ND	ND	0.084
Total Nitrate, Nitrite-N, CALC	mg/l			ND	ND	27	30
Total Organic Carbon	mg/l			1.4	1.5	1.2	1.1
Carbon Dioxide	mg/l			6.4	6.2	16	24
General Physical							
Apparent Color	ACU	15	S	10	10	10	3
Lab pH	Units			8	8	7.7	7.5
Odor	TON	3	S	1	**8**	1	2
pH of CaCO3 saturation(25C)	Units			7	7	6.5	6.5
pH of CaCO3 saturation(60C)	Units			6.5	6.6	6.1	6
Specific Conductance	umho/cm	1600	S	1030	1000	**1720**	**2000**
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	50	P	2.6	2.8	2.5	3
Barium, Total, ICAP/MS	ug/l	1000	P	69	57	92	130
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	1.1	ND	4.5	3.6
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1000	S	ND	ND	ND	2.1
Lead, Total, ICAP/MS	ug/l			ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	61	84
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	13	14
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	1.2	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	100	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			ND	ND	ND	ND
Isopropylbenzene	ug/l			ND	ND	ND	ND
n-Propylbenzene	ug/l			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	1000	S	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND
Ethyl benzene	ug/l	700	P	ND	ND	ND	ND
MTBE	ug/l	13	P	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 2005/2006

Water Quality Constituents	Units	MCL	MCL Type	Gardena #1 Zone 1 03/23/06	Gardena #1 Zone 1 09/14/06	Gardena #1 Zone 2 03/23/06	Gardena #1 Zone 2 09/14/06	Gardena #1 Zone 3 03/23/06	Gardena #1 Zone 3 09/14/06	Gardena #1 Zone 4 03/23/06	Gardena #1 Zone 4 09/14/06
Total Dissolved Solid (TDS)	mg/l	1000	S	324	378	318	602	328	380	**2060**	**1960**
Cation Sum	meq/l			5.7	5.9	5.7	9.9	5.6	5.8	23	28
Anion Sum	meq/l			5	5.7	5.4	9.1	5	5.4	20	28
Iron, Total, ICAP	mg/l	0.3	S	0.15	0.16	ND	0.09	ND	ND	ND	ND
Manganese, Total, ICAP/MS	ug/l	50	S	**81**	**63**	**59**	**96**	36	15	ND	ND
Turbidity	NTU	5	S	**5.1**	4.1	3.9	**160**	4.9	**8**	3.2	**65**
Alkalinity	mg/l			228	262	163	228	143	167	146	173
Boron	mg/l			0.31	0.35	0.14	0.15	0.12	0.13	0.14	0.14
Bicarbonate as HCO3,calculated	mg/l			280	320	200	280	170	200	180	210
Calcium, Total, ICAP	mg/l			28	24	56	110	55	44	250	310
Carbonate as CO3, Calculated	mg/l			2.3	3.3	ND	ND	ND	2.1	ND	ND
Hardness (Total, as CaCO3)	mg/l			110	99	190	380	180	160	920	1100
Chloride	mg/l	500	S	17	17	35	148	24	22.7	**524**	**795**
Fluoride	mg/l	2	P	0.18	0.17	0.39	0.29	0.38	0.34	0.18	0.15
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	0.9	0.7	0.7	0.9	1
Magnesium, Total, ICAP	mg/l			10	9.6	13	25	11	11	71	91
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	**12**	**14**
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total, ICAP	mg/l			9.3	11	3.5	4.5	3.1	3.4	5.5	6.4
Sodium, Total, ICAP	mg/l			74	84	41	51	42	60	100	120
Sulfate	mg/l	500	S	ND	ND	52	16	69	66	50	45
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	0.06
Total Nitrate, Nitrite-N, CALC	mg/l			ND	ND	ND	ND	ND	ND	12	14
Total Organic Carbon	mg/l			2.3	3.1	ND	8.5	0.39	0.39	0.32	2.2
Carbon Dioxide	mg/l			3.6	3.3	2.6	5.8	ND	2.1	5.9	8.7
General Physical											
Apparent Color	ACU	15	S	**25**	**35**	3	5	3	5	3	5
Lab pH	Units			8.1	8.2	8.1	7.9	8.2	8.2	7.7	7.6
Odor	TON	3	S	**4**	**8**	2	**8**	2	1	2	2
pH of CaCO3 saturation(25C)	Units			7.6	7.6	7.4	7	7.5	7.5	6.8	6.6
pH of CaCO3 saturation(60C)	Units			7.1	7.1	7	6.5	7	7.1	6.4	6.2
Specific Conductance	umho/cm	1600	S	566	567	559	930	532	539	**2460**	**2880**
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	50	P	**205**	**130**	ND	ND	ND	ND	1.9	ND
Barium, Total, ICAP/MS	ug/l	1000	P	23	19	58	86	28	19	250	330
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	1.7	ND	1.2	ND	5.7	4.9
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			ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND	9.5	14
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	20
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	100	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			ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l			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	1000	S	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	700	P	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	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 2005/2006

Water Quality Constituents	Units	MCL	MCL Type	Gardena #2 Zone 1 03/20/06	Gardena #2 Zone 1 08/30/06	Gardena #2 Zone 2 03/20/06	Gardena #2 Zone 2 08/30/06	Gardena #2 Zone 3 03/20/06	Gardena #2 Zone 3 08/30/06	Gardena #2 Zone 4 03/20/06	Gardena #2 Zone 4 08/30/06	Gardena #2 Zone 5 03/20/06	Gardena #2 Zone 5 08/30/06
Total Dissolved Solid (TDS)	mg/l	1000	S	342	454	320	332	314	276	220	238	300	318
Cation Sum	meq/l			5.8	6.2	5.5	5.4	5.4	5.3	4.2	4.2	5.3	5.3
Anion Sum	meq/l			6	4.6	5.4	5.5	5.3	4.5	4.1	4.2	5.3	4.6
Iron, Total, ICAP	mg/l	0.3	S	0.029	0.027	0.047	0.042	0.059	0.048	ND	ND	0.058	0.043
Manganese, Total, ICAP/MS	ug/l	50	S	28	28	**55**	47	**71**	**56**	41	39	**88**	**76**
Turbidity	NTU	5	S	1.2	1.5	0.25	0.25	0.35	0.25	0.25	0.3	0.3	0.3
Alkalinity	mg/l			280	209	177	183	173	137	172	176	190	156
Boron	mg/l			0.31	0.29	0.16	0.16	0.13	0.13	0.11	0.09	0.12	0.12
Bicarbonate as HCO3,calculated	mg/l			340	250	220	220	200	170	210	210	230	190
Calcium, Total, ICAP	mg/l			16	16	38	38	50	49	32	32	49	49
Carbonate as CO3, Calculated	mg/l			5.6	4.1	2.3	2.3	21	ND	2.7	2.2	ND	2
Hardness (Total, as CaCO3)	mg/l			65	65	140	140	170	170	120	120	170	170
Chloride	mg/l	500	S	14	14.4	22	23.3	23	23.9	22	22.2	38	39.7
Fluoride	mg/l	2	P	0.23	0.26	0.23	0.27	0.32	0.38	0.25	0.29	0.28	0.31
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.7	0.6	0.7	0.7	1.8	0.6	0.7	0.6	0.7	0.7
Magnesium, Total, ICAP	mg/l			6.2	6.2	12	12	12	12	9.1	9.2	11	11
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			5.4	5.3	5.6	5.5	3.6	3.6	3.2	3.1	3.1	2.9
Sodium, Total, ICAP	mg/l			100	110	56	55	41	41	40	40	44	44
Sulfate	mg/l	500	S	ND	ND	57	58	56	53	ND	ND	18	16
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Nitrate, Nitrite-N, CALC	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			3.1	3.1	0.59	0.51	0.39	0.4	0.6	0.51	0.35	0.31
Carbon Dioxide	mg/l			2.2	ND	2.3	2.3	ND	2.2	ND	2.2	3	2
General Physical													
Apparent Color	ACU	15	S	**30**	**30**	10	5	5	3	5	5	5	3
Lab pH	Units			8.4	8.4	8.2	8.2	9.2	8.1	8.3	8.2	8.1	8.2
Odor	TON	3	S	**8**	**4**	**4**	**4**	**3**	**3**	**3**	**4**	**4**	**4**
pH of CaCO3 saturation(25C)	Units			7.7	7.8	7.5	7.5	7.4	7.5	7.6	7.6	7.4	7.5
pH of CaCO3 saturation(60C)	Units			7.3	7.4	7.1	7.1	7	7.1	7.2	7.2	6.9	7
Specific Conductance	umho/cm	1600	S	595	576	547	536	534	514	389	401	531	516
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	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium, Total, ICAP/MS	ug/l	1000	P	21	21	20	19	21	20	62	62	64	77
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	5.4	4.4	3.4	3.2	3.5	3.3	3.6	3.1	ND	3
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			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	9	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	100	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			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l			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	1000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	700	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	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 2005/2006

Water Quality Constituents	Units	MCL	MCL Type	Hawthorne #1 Zone 1 08/17/06	Hawthorne #1 Zone 2 08/17/06	Hawthorne #1 Zone 3 08/17/06	Hawthorne #1 Zone 4 08/17/06	Hawthorne #1 Zone 5 08/17/06	Hawthorne #1 Zone 6 08/17/06
Total Dissolved Solid (TDS)	mg/l	1000	S	770	**1060**	612	446	**1080**	**1960**
Cation Sum	meq/l			16	15	11	7.8	15	33
Anion Sum	meq/l			14	11	9.5	5.8	14	32
Iron, Total, ICAP	mg/l	0.3	S	0.16	0.12	0.22	ND	0.024	0.1
Manganese, Total, ICAP/MS	ug/l	50	S	14	**57**	**76**	43	**200**	**670**
Turbidity	NTU	5	S	0.55	0.5	0.8	1.7	0.55	4.9
Alkalinity	mg/l			620	460	415	222	190	304
Boron	mg/l			1.5	1	0.59	0.36	0.16	0.34
Bicarbonate as HCO3,calculated	mg/l			750	560	500	270	230	370
Calcium, Total, ICAP	mg/l			15	18	37	36	130	270
Carbonate as CO3, Calculated	mg/l			7.7	7.3	8.2	2.8	ND	2.4
Hardness (Total, as CaCO3)	mg/l			91	86	190	160	510	1000
Chloride	mg/l	500	S	46	47.4	42.5	46.4	320	**544**
Fluoride	mg/l	2	P	0.25	0.22	0.2	0.31	0.21	0.18
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.8	0.9	1.2	0.7	0.8	1.6
Magnesium, Total, ICAP	mg/l			13	10	24	17	44	82
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	ND	ND	ND	2
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND
Potassium, Total, ICAP	mg/l			21	14	15	9.3	8	8
Sodium, Total, ICAP	mg/l			320	300	160	100	110	280
Sulfate	mg/l	500	S	ND	ND	ND	ND	64	**510**
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	0.11
Total Nitrate, Nitrite-N, CALC	mg/l			ND	ND	ND	ND	ND	2
Total Organic Carbon	mg/l			15	15	4.8	2.7	1	3.4
Carbon Dioxide	mg/l			7.8	4.6	3.3	2.8	6	6.1
General Physical									
Apparent Color	ACU	15	S	**300**	**300**	**50**	**25**	3	5
Lab pH	Units			8.2	8.3	8.4	8.2	7.8	8
Odor	TON	3	S	**3**	**3**	2	**4**	**4**	**3**
pH of CaCO3 saturation(25C)	Units			7.4	7.4	7.2	7.5	7	6.4
pH of CaCO3 saturation(60C)	Units			6.9	7	6.7	7	6.5	6
Specific Conductance	umho/cm	1600	S	1440	1310	999	758	1580	**3120**
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	50	P	ND	1.1	ND	ND	ND	3
Barium, Total, ICAP/MS	ug/l	1000	P	33	32	36	34	140	59
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	3.8	3.8	3	1.1	6.3	9.9
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			ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	12
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	16
Volatile Organic Compounds									
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	**17**
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	0.9
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	100	P	ND	ND	ND	ND	ND	9
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	5.4
Freon 113	ug/l			ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l			ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l			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	1000	S	ND	ND	ND	ND	ND	1.9
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	700	P	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	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 2005/2006

Water Quality Constituents	Units	MCL	MCL Type	Inglewood #1	Inglewood #1	Inglewood #1	Inglewood #1	Inglewood #1	Inglewood #1	Inglewood #1	Inglewood #1
				Zone 1	Zone 1	Zone 3	Zone 3	Zone 4	Zone 4	Zone 5	Zone 5
				05/24/06	09/28/06	05/25/06	09/28/06	05/25/06	09/28/06	05/25/06	09/28/06
Total Dissolved Solid (TDS)	mg/l	1000	S	**2400**	**2440**	**1060**	**1100**	770	826	**1130**	**1290**
Cation Sum	meq/l			41	43	18	17	13	12	20	19
Anion Sum	meq/l			43	43	17	19	13	13	19	20
Iron, Total, ICAP	mg/l	0.3	S	0.17	**0.38**	**0.38**	**0.37**	**0.33**	**0.31**	ND	ND
Manganese, Total, ICAP/MS	ug/l	50	S	25	24	**260**	**300**	**170**	**190**	2.2	2.5
Turbidity	NTU	5	S	0.75	1.1	2.1	2.3	1.3	2	0.75	1.3
Alkalinity	mg/l			820	806	270	298	230	226	279	257
Boron	mg/l			5	4.7	0.39	0.4	0.19	0.19	0.24	0.24
Bicarbonate as HCO3,calculated	mg/l			998	980	329	360	280	280	340	310
Calcium, Total, ICAP	mg/l			140	130	120	120	97	96	180	170
Carbonate as CO3, Calculated	mg/l			5.2	5.1	ND	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			555	520	493	490	415	410	697	670
Chloride	mg/l	500	S	**885**	**890**	310	350	230	230	360	400
Fluoride	mg/l	2	P	0.27	0.37	0.49	0.61	0.4	0.5	0.24	0.33
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			1.6	1.6	1	1	0.9	0.8	0.7	0.9
Magnesium, Total, ICAP	mg/l			50	47	47	47	42	42	60	59
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	9.4	9.3
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total, ICAP	mg/l			17	17	6.9	7.1	9.2	9.2	7.1	7.3
Sodium, Total, ICAP	mg/l			680	750	180	170	97	92	130	130
Sulfate	mg/l	500	S	67	66	130	130	88	94	140	140
Surfactants	mg/l	0.5	S	0.091	0.09	0.054	ND	ND	ND	ND	ND
Total Nitrate, Nitrite-N, CALC	mg/l			ND	ND	ND	ND	ND	ND	9.4	9.3
Total Organic Carbon	mg/l			38	42	1.2	1.2	0.75	0.63	0.68	0.65
Carbon Dioxide	mg/l			21	20	8.6	9.4	5.8	7.3	22	13
General Physical											
Apparent Color	ACU	15	S	**200**	**150**	10	10	10	10	ND	ND
Lab pH	Units			7.9	7.9	7.8	7.8	7.9	7.8	7.4	7.6
Odor	TON	3	S	**4**	**8**	1	2	1	2	1	1
pH of CaCO3 saturation(25C)	Units			6.3	6.3	6.8	6.8	7	7	6.7	6.7
pH of CaCO3 saturation(60C)	Units			5.9	5.9	6.4	6.4	6.6	6.6	6.2	6.3
Specific Conductance	umho/cm	1600	S	**4170**	**4100**	**1750**	**1800**	1320	1300	**1970**	**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	50	P	ND	ND	ND	ND	ND	ND	ND	ND
Barium, Total, ICAP/MS	ug/l	1000	P	250	230	41	41	110	110	220	220
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	1.3	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	2.7	ND	ND	ND	3.6	ND
Lead, Total, ICAP/MS	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	7.4	ND	7.6	ND	5.8	ND	12	ND
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	6	ND
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND	1.3	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	1.8	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	7.3	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds											
Trichloroethylene (TCE)	ug/l	5	P	2.8	2.1	ND	ND	ND	ND	2.3	2
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	100	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			ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l			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	1000	S	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	700	P	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	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 2005/2006

Water Quality 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
				03/27/06	09/06/06	03/27/06	09/06/06	03/27/06	09/06/06	03/27/06	09/06/06	03/27/06	09/06/06
Total Dissolved Solid (TDS)	mg/l	1000	S	**1540**	**1620**	898	**1000**	874	844	672	624	**1540**	**1520**
Cation Sum	meq/l			22	22	15	16	15	14	13	11	21	22
Anion Sum	meq/l			20	23	14	16	14	14	11	11	19	22
Iron, Total, ICAP	mg/l	0.3	S	0.23	0.22	ND	ND	ND	0.031	ND	ND	0.11	0.11
Manganese, Total, ICAP/MS	ug/l	50	S	**280**	**330**	**130**	**150**	**110**	**120**	**99**	**92**	**230**	**270**
Turbidity	NTU	5	S	1.6	0.8	**5**	**12**	**5.1**	3	2	1.8	0.5	0.45
Alkalinity	mg/l			253	245	199	222	228	268	228	224	236	239
Boron	mg/l			0.59	0.64	0.42	0.42	0.41	0.4	0.4	0.38	0.54	0.55
Bicarbonate as HCO3,calculated	mg/l			310	300	240	270	280	330	280	270	290	290
Calcium, Total, ICAP	mg/l			150	160	100	110	95	87	79	66	150	160
Carbonate as CO3, Calculated	mg/l			ND	ND	2	ND	ND	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			550	580	370	400	350	320	290	240	550	590
Chloride	mg/l	500	S	**500**	**632**	340	387	300	298	230	210	490	**593**
Fluoride	mg/l	2	P	0.11	0.12	0.14	0.14	0.13	0.15	0.2	0.25	0.11	0.12
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			1.1	1	1	0.8	1	0.8	0.9	0.7	1.2	1
Magnesium, Total, ICAP	mg/l			43	45	30	31	28	25	23	19	43	46
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			14	14	11	12	10	10	8.7	8.4	13	14
Sodium, Total, ICAP	mg/l			240	240	170	180	180	180	150	140	220	230
Sulfate	mg/l	500	S	21	11	27	29	24	18	14	12	22	20
Surfactants	mg/l	0.5	S	0.054	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Nitrate, Nitrite-N, CALC	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			0.89	1	1.2	1.4	2.1	2.5	1.8	2	0.75	0.88
Carbon Dioxide	mg/l			6.4	7.8	3.1	7	4.6	8.6	4.6	5.6	4.8	7.5
General Physical													
Apparent Color	ACU	15	S	**15**	10	**15**	**15**	**15**	**20**	**25**	**30**	5	5
Lab pH	Units			7.9	7.8	8.1	7.8	8	7.8	8	7.9	8	7.8
Odor	TON	3	S	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**3**
pH of CaCO3 saturation(25C)	Units			6.8	6.8	7.1	7	7	7	7.1	7.2	6.8	6.8
pH of CaCO3 saturation(60C)	Units			6.3	6.3	6.6	6.5	6.6	6.5	6.7	6.7	6.4	6.3
Specific Conductance	umho/cm	1600	S	**2240**	**2440**	**1620**	**1710**	1530	1490	1200	999	**2180**	**2320**
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	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium, Total, ICAP/MS	ug/l	1000	P	86	95	60	66	54	54	45	38	90	94
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	2.1	2.9	1.9	1.6	2	2.5	1.7	3.1	1.9	1.8
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			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	5.6	ND	ND	ND	ND	ND	ND	5.3	5.4
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	100	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			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l			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	1000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	700	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	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 2005/2006

Water Quality 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
				03/22/06	08/24/06	03/22/06	08/24/06	03/22/06	08/24/06	03/22/06	08/24/06	03/22/06	08/24/06
Total Dissolved Solid (TDS)	mg/l	1000	S	436	480	230	236	240	266	**1920**	**1670**	**2280**	**1930**
Cation Sum	meq/l			8.3	7.9	3.6	4.1	4.3	4.4	23	26	28	29
Anion Sum	meq/l			7	5.9	3.3	3	4	3.3	20	25	24	28
Iron, Total, ICAP	mg/l	0.3	S	0.05	0.049	ND	ND	0.024	0.021	ND	0.079	0.26	0.25
Manganese, Total, ICAP/MS	ug/l	50	S	14	15	9.9	9.8	17	16	**270**	**280**	**410**	**390**
Turbidity	NTU	5	S	0.7	0.7	0.25	0.25	0.4	0.3	0.35	0.5	1.3	1.3
Alkalinity	mg/l			321	270	109	98	152	117	119	126	108	107
Boron	mg/l			0.37	0.38	ND	0.13	0.14	0.14	ND	0.11	0.1	0.11
Bicarbonate as HCO3,calculated	mg/l			390	330	130	120	180	140	140	150	130	130
Calcium, Total, ICAP	mg/l			11	11	16	17	21	22	260	290	340	350
Carbonate as CO3, Calculated	mg/l			6.4	3.4	2.1	ND	2.3	2.9	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			42	42	51	55	68	71	930	1000	1200	1200
Chloride	mg/l	500	S	19	17.6	21	20	35	32.5	**583**	**753**	**727**	**875**
Fluoride	mg/l	2	P	0.44	0.47	0.31	0.37	0.26	0.26	0.14	0.14	0.12	0.14
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.6	0.3	0.3	0.2	0.4	0.5	1.1	1.1	1.1	1.1
Magnesium, Total, ICAP	mg/l			3.5	3.5	2.8	3	3.9	3.8	68	77	82	84
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			3.9	3.8	ND	2.4	2.5	2.8	11	13	9.8	10
Sodium, Total, ICAP	mg/l			170	160	60	67	65	68	100	120	100	110
Sulfate	mg/l	500	S	ND	ND	25	22	ND	ND	71	63	74	63
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	0.059	0.051	0.077	0.055
Total Nitrate, Nitrite-N, CALC	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			7.5	8.1	1.4	1.3	2.6	2.5	0.54	0.58	0.53	0.62
Carbon Dioxide	mg/l			2.5	3.4	ND	ND	ND	ND	2.3	3.1	2.7	2.7
General Physical													
Apparent Color	ACU	15	S	**80**	**100**	**20**	**25**	**25**	**25**	3	5	5	5
Lab pH	Units			8.4	8.2	8.4	8.3	8.3	8.5	8	7.9	7.9	7.9
Odor	TON	3	S	**4**	2	**3**	2	2	2	2	**3**	**4**	**3**
pH of CaCO3 saturation(25C)	Units			7.8	7.9	8.1	8.1	7.9	8	6.9	6.8	6.8	6.8
pH of CaCO3 saturation(60C)	Units			7.4	7.4	7.7	7.7	7.4	7.5	6.4	6.4	6.4	6.3
Specific Conductance	umho/cm	1600	S	758	761	365	383	399	415	**2480**	**2780**	**2910**	**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	50	P	ND	ND	ND	ND	ND	ND	ND	1.1	1	ND
Barium, Total, ICAP/MS	ug/l	1000	P	9.2	8.8	13	12	11	9.8	99	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	4.2	ND	1.8	1.9	2.2	2.4	2.3	2.1	2.4	2.4
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			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND	13	5.6	15	6.9
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	100	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			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l			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	1000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	700	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	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 2005/2006

Water Quality 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
				03/15/06	03/15/06	03/16/06	03/16/06	03/16/06	03/16/06
Total Dissolved Solid (TDS)	mg/l	1000	S	676	600	910	**1360**	**1050**	**1090**
Cation Sum	meq/l			11	10	15	24	18	18
Anion Sum	meq/l			8.5	7.8	12	21	18	17
Iron, Total, ICAP	mg/l	0.3	S	0.19	0.17	0.19	0.19	0.21	**0.36**
Manganese, Total, ICAP/MS	ug/l	50	S	19	24	41	45	**64**	**280**
Turbidity	NTU	5	S	0.75	2.9	2.4	1.2	2.3	2.7
Alkalinity	mg/l			389	341	460	396	297	205
Boron	mg/l			1.1	0.74	1.2	1	0.56	0.21
Bicarbonate as HCO3,calculated	mg/l			470	410	560	480	360	250
Calcium, Total, ICAP	mg/l			6.7	8.3	10	47	59	110
Carbonate as CO3, Calculated	mg/l			12	4.2	7.3	3.1	ND	ND
Hardness (Total, as CaCO3)	mg/l			25	33	45	260	260	420
Chloride	mg/l	500	S	23	35	87	468	439	454
Fluoride	mg/l	2	P	0.72	0.75	0.54	0.21	0.17	0.43
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.7	0.3	0.6	0.9	0.8	0.8
Magnesium, Total, ICAP	mg/l			2	2.9	4.8	34	27	35
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			2.1	3.9	6.8	11	9.1	6.5
Sodium, Total, ICAP	mg/l			250	220	330	430	280	210
Sulfate	mg/l	500	S	ND	ND	ND	ND	ND	24
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND
Total Nitrate, Nitrite-N, CALC	mg/l			ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			16	22	27	19	13	1
Carbon Dioxide	mg/l			ND	4.2	4.6	7.9	7.4	6.5
General Physical									
Apparent Color	ACU	15	S	**700**	**400**	**400**	**70**	**50**	10
Lab pH	Units			8.6	8.2	8.3	8	7.9	7.8
Odor	TON	3	S	**17**	**17**	**8**	**8**	**8**	**8**
pH of CaCO3 saturation(25C)	Units			7.9	7.9	7.7	7.1	7.1	7
pH of CaCO3 saturation(60C)	Units			7.5	7.5	7.3	6.6	6.7	6.6
Specific Conductance	umho/cm	1600	S	1040	950	1390	**2560**	**1920**	**1860**
Metal									
Aluminum, Total, ICAP/MS	ug/l	1000	P	31	50	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	50	P	1.5	ND	2.2	ND	4.6	ND
Barium, Total, ICAP/MS	ug/l	1000	P	9.6	8.9	16	29	20	110
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	1.3	1.2	1.4	ND	ND	2.2
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1000	S	4.1	8.9	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l			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	14	8
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	100	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			ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l			ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l			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	1000	S	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	700	P	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	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 2005/2006

Water Quality Constituents	Units	MCL	MCL Type	PM-3 Madrid Zone 1 03/16/06	PM-3 Madrid Zone 1 09/06/06	PM-3 Madrid Zone 2 03/16/06	PM-3 Madrid Zone 2 09/06/06	PM-3 Madrid Zone 3 03/16/06	PM-3 Madrid Zone 3 09/06/06	PM-3 Madrid Zone 4 03/16/06	PM-3 Madrid Zone 4 09/06/06
Total Dissolved Solid (TDS)	mg/l	1000	S	684	412	280	272	398	720	988	**1010**
Cation Sum	meq/l			11	7.3	5.1	5	7.3	11	15	15
Anion Sum	meq/l			9.9	6.9	5	4.7	5.8	11	15	16
Iron, Total, ICAP	mg/l	0.3	S	0.087	0.056	0.11	0.11	0.054	0.1	**0.49**	**0.45**
Manganese, Total, ICAP/MS	ug/l	50	S	**58**	30	40	38	31	**56**	**350**	**340**
Turbidity	NTU	5	S	1.7	1	0.3	0.25	1.1	1.8	**5**	4.5
Alkalinity	mg/l			160	308	195	188	256	188	177	196
Boron	mg/l			0.14	0.36	0.13	0.12	0.39	0.14	0.36	0.37
Bicarbonate as HCO3,calculated	mg/l			190	370	240	230	310	230	220	240
Calcium, Total, ICAP	mg/l			90	12	38	36	12	91	120	120
Carbonate as CO3, Calculated	mg/l			ND	3	ND	ND	4	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			330	69	140	140	68	330	440	440
Chloride	mg/l	500	S	237	24.3	40	31	25	242	364	375
Fluoride	mg/l	2	P	0.27	0.33	0.36	0.44	0.29	0.37	0.24	0.32
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.6	0.3	0.5	0.4	0.4	0.7	0.8	0.7
Magnesium, Total, ICAP	mg/l			26	9.4	11	11	9.2	26	34	35
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			5.1	12	3.1	3.2	12	5.3	6.7	7.1
Sodium, Total, ICAP	mg/l			87	130	51	51	130	87	140	140
Sulfate	mg/l	500	S	ND	ND	ND	ND	ND	ND	55	56
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND
Total Nitrate, Nitrite-N, CALC	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			1.1	3.1	0.58	0.55	3.1	0.75	0.81	0.96
Carbon Dioxide	mg/l			4.9	4.8	3.9	4.7	2.5	6	5.7	7.9
General Physical											
Apparent Color	ACU	15	S	5	**30**	5	3	**35**	5	10	10
Lab pH	Units			7.8	8.1	8	7.9	8.3	7.8	7.8	7.7
Odor	TON	3	S	**4**	**3**	**8**	2	**8**	2	**8**	**4**
pH of CaCO3 saturation(25C)	Units			7.2	7.8	7.5	7.5	7.9	7.1	7	7
pH of CaCO3 saturation(60C)	Units			6.8	7.3	7	7.1	7.4	6.7	6.6	6.5
Specific Conductance	umho/cm	1600	S	1160	678	503	474	672	1120	**1630**	**1650**
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	50	P	ND	ND	ND	ND	ND	ND	4.8	4.5
Barium, Total, ICAP/MS	ug/l	1000	P	67	22	20	18	24	62	92	87
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	2.7	2.6	2.3	1.3	4	2	2.4	1.8
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			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	9.4	ND	ND	ND	ND	ND	11	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	1.3	1.6
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	**6.6**	ND	ND	ND	ND	**6.7**	2.4	4.3
cis-1,2-Dichloroethylene	ug/l	6	P	1.2	ND	ND	ND	ND	1.1	2.1	2.1
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l	100	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	0.6	ND	ND	ND	ND	0.7	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			ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l			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	1000	S	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	700	P	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	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 2005/2006

Water Quality Constituents	Units	MCL	MCL Type	PM-4 Mariner	PM-4 Mariner	PM-4 Mariner	PM-4 Mariner	PM-4 Mariner	PM-4 Mariner	PM-4 Mariner	PM-4 Mariner
				Zone 1	Zone 1	Zone 2	Zone 2	Zone 3	Zone 3	Zone 4	Zone 4
				04/30/06	09/24/06	04/30/06	09/24/06	04/30/06	09/24/06	04/30/06	09/24/06
Total Dissolved Solid (TDS)	mg/l	1000	S	352	340	**13400**	**13340**	658	644	640	666
Cation Sum	meq/l			5.9	6.2	190	190	11	9.5	11	11
Anion Sum	meq/l			5.1	5.7	200	190	10	9.7	10	10
Iron, Total, ICAP	mg/l	0.3	S	0.074	0.073	0.21	0.2	0.036	0.031	0.15	0.14
Manganese, Total, ICAP/MS	ug/l	50	S	35	35	**1100**	**1000**	48	44	**79**	**78**
Turbidity	NTU	5	S	0.15	0.1	1.9	1.7	0.9	1.9	0.7	0.3
Alkalinity	mg/l			220	243	143	149	162	153	171	187
Boron	mg/l			0.17	0.18	0.26	0.25	0.3	0.32	0.25	0.26
Bicarbonate as HCO3,calculated	mg/l			268	300	174	180	197	190	208	230
Calcium, Total, ICAP	mg/l			27	28	1400	1400	60	51	75	75
Carbonate as CO3, Calculated	mg/l			2.2	3.1	ND	ND	ND	2	ND	ND
Hardness (Total, as CaCO3)	mg/l			117	120	5230	5200	216	180	270	270
Chloride	mg/l	500	S	25	28.1	**6290**	**6000**	113	103	117	116
Fluoride	mg/l	2	P	0.19	0.38	ND	0.12	0.15	0.4	0.089	0.31
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.5	0.7	1.2	1.4	0.7	0.7	0.8	0.9
Magnesium, Total, ICAP	mg/l			12	12	420	420	16	14	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			6.9	7.6	56	59	6.2	5.7	6.2	6.6
Sodium, Total, ICAP	mg/l			79	84	1900	1900	140	130	120	120
Sulfate	mg/l	500	S	ND	ND	**771**	**790**	190	180	170	160
Surfactants	mg/l	0.5	S	ND	ND	0.072	0.27	ND	ND	ND	ND
Total Nitrate, Nitrite-N, CALC	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			1.6	1.7	1	0.99	1.7	2.4	1	1.1
Carbon Dioxide	mg/l			3.5	3.1	14	12	2.6	2	2.7	3
General Physical											
Apparent Color	ACU	15	S	10	**15**	5	5	10	10	5	5
Lab pH	Units			8.1	8.2	7.3	7.4	8.1	8.2	8.1	8.1
Odor	TON	3	S	**4**	2	**4**	2	**8**	**3**	**4**	**3**
pH of CaCO3 saturation(25C)	Units			7.6	7.5	6.1	6	7.4	7.5	7.3	7.2
pH of CaCO3 saturation(60C)	Units			7.1	7.1	5.6	5.6	6.9	7	6.8	6.8
Specific Conductance	umho/cm	1600	S	596	620	**14700**	**18000**	1090	1000	1130	1100
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	50	P	ND	ND	2.3	ND	ND	ND	ND	ND
Barium, Total, ICAP/MS	ug/l	1000	P	21	23	240	240	83	88	47	55
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	6.4	1.1	ND	ND	1	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			ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	**120**	30	ND	ND	5.1	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	1.1	3.4	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	5.7	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	100	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			ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l			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	1000	S	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	700	P	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	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 2005/2006

Water Quality Constituents	Units	MCL	MCL Type	Westchester #1 Zone 1 03/14/06	Westchester #1 Zone 1 08/23/06	Westchester #1 Zone 2 03/14/06	Westchester #1 Zone 2 08/23/06	Westchester #1 Zone 3 03/14/06	Westchester #1 Zone 3 08/23/06	Westchester #1 Zone 4 03/14/06	Westchester #1 Zone 4 08/23/06	Westchester #1 Zone 5 03/14/06	Westchester #1 Zone 5 08/23/06
Total Dissolved Solid (TDS)	mg/l	1000	S	**1300**	**1320**	696	784	570	664	552	608	550	612
Cation Sum	meq/l			22	23	13	13	11	11	10	10	10	9.9
Anion Sum	meq/l			23	19	12	12	11	9.6	10	9.5	9.9	8.4
Iron, Total, ICAP	mg/l	0.3	S	0.28	0.28	0.13	0.13	0.24	0.24	0.14	0.11	**0.31**	0.26
Manganese, Total, ICAP/MS	ug/l	50	S	**50**	46	**56**	**64**	**180**	**180**	**130**	**130**	**220**	**220**
Turbidity	NTU	5	S	0.8	0.6	0.6	0.4	0.4	0.65	0.5	0.6	1.1	1.1
Alkalinity	mg/l			929	768	498	490	430	380	351	312	313	244
Boron	mg/l			2.3	2.4	0.85	0.85	0.4	0.38	0.23	0.24	0.21	0.2
Bicarbonate as HCO3,calculated	mg/l			1100	930	600	590	520	460	430	380	380	300
Calcium, Total, ICAP	mg/l			18	17	31	31	51	51	70	68	67	67
Carbonate as CO3, Calculated	mg/l			18	15	7.8	12	8.5	3.8	4.4	3.9	4.9	2.5
Hardness (Total, as CaCO3)	mg/l			100	100	150	150	220	220	290	290	280	280
Chloride	mg/l	500	S	140	132	70	66.4	65	60.5	65	61.4	68	66.9
Fluoride	mg/l	2	P	0.22	0.25	0.22	0.25	0.22	0.27	0.21	0.07	0.27	0.31
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	1.1	1.3	1.4	1	1.2	1.2	1.3	1
Magnesium, Total, ICAP	mg/l			14	15	17	18	23	23	29	28	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			17	19	14	15	11	11	9.3	9.1	7.4	7.6
Sodium, Total, ICAP	mg/l			440	460	220	230	140	140	100	100	99	95
Sulfate	mg/l	500	S	ND	ND	ND	ND	18	15	78	71	83	78
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Nitrate, Nitrite-N, CALC	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			36	30	8.4	8.5	3.4	3.3	1.8	1.7	1.4	1.4
Carbon Dioxide	mg/l			7.2	6.1	4.9	3.1	3.4	6	4.4	3.9	3.1	3.9
General Physical													
Apparent Color	ACU	15	S	**600**	**800**	**100**	**80**	**25**	**35**	10	10	10	**15**
Lab pH	Units			8.4	8.4	8.3	8.5	8.4	8.1	8.2	8.2	8.3	8.1
Odor	TON	3	S	**3**	**3**	**3**	**3**	**3**	**3**	**3**	2	**3**	**3**
pH of CaCO3 saturation(25C)	Units			7.1	7.2	7.2	7.2	7	7.1	7	7	7	7.1
pH of CaCO3 saturation(60C)	Units			6.7	6.8	6.7	6.7	6.6	6.6	6.5	6.6	6.6	6.7
Specific Conductance	umho/cm	1600	S	**2040**	**2130**	1200	1210	1020	999	987	992	944	931
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	50	P	ND	ND	1.5	ND	ND	1.1	ND	ND	1.6	1.8
Barium, Total, ICAP/MS	ug/l	1000	P	88	77	130	150	62	65	73	75	61	61
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	2.5	3.2	ND	1	10	11	5.5	8.9	4.9	7.7
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			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	17	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds													
Trichloroethylene (TCE)	ug/l	5	P	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	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	100	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			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l			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	1000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	700	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	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 2005/2006

Water Quality 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
				03/15/06	08/16/06	03/15/06	08/16/06	03/15/06	08/16/06	03/15/06	08/16/06	03/15/06	08/16/06
Total Dissolved Solid (TDS)	mg/l	1000	S	642	742	**1410**	**1720**	**1780**	**1840**	**1590**	**1720**	812	770
Cation Sum	meq/l			10	11	20	23	26	26	21	27	13	12
Anion Sum	meq/l			10	10	21	20	27	23	27	24	13	11
Iron, Total, ICAP	mg/l	0.3	S	ND	ND	0.041	0.041	ND	ND	ND	0.023	0.025	0.055
Manganese, Total, ICAP/MS	ug/l	50	S	24	24	22	26	7.6	9.1	23	23	29	34
Turbidity	NTU	5	S	0.2	0.15	0.35	0.2	0.35	0.15	0.35	0.2	0.45	0.65
Alkalinity	mg/l			141	139	135	105	141	128	153	141	130	110
Boron	mg/l			0.18	0.18	0.2	0.2	0.25	0.25	0.26	0.27	0.18	0.18
Bicarbonate as HCO3,calculated	mg/l			170	170	160	130	170	160	190	170	160	130
Calcium, Total, ICAP	mg/l			62	64	180	210	180	190	130	130	98	90
Carbonate as CO3, Calculated	mg/l			2.2	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			240	250	620	720	630	670	510	510	380	350
Chloride	mg/l	500	S	260	270	**595**	**587**	**834**	**720**	**657**	**568**	200	160
Fluoride	mg/l	2	P	0.11	0.13	0.061	0.085	0.06	0.058	0.075	0.082	0.11	0.13
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.9	8.1	1.2	1	0.9	0.7	1	1	0.9	0.8
Magnesium, Total, ICAP	mg/l			20	21	42	48	45	48	46	46	34	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	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	8.3	6.9	7.7	8.5	8.9	8.9	9.2	6.1	6.2
Sodium, Total, ICAP	mg/l			120	130	170	190	290	290	240	370	110	110
Sulfate	mg/l	500	S	ND	ND	95	81	34	25	260	230	220	210
Surfactants	mg/l	0.5	S	0.3	0.28	0.33	0.37	0.21	0.29	0.2	0.2	0.16	0.16
Total Nitrate, Nitrite-N, CALC	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			3	2.9	2.2	2	2	2.3	1.7	1.5	2.6	2.7
Carbon Dioxide	mg/l			ND	2.2	ND	2.1	3.5	5.2	2.5	2.2	2.1	ND
General Physical													
Apparent Color	ACU	15	S	5	5	5	5	10	10	5	5	5	5
Lab pH	Units			8.3	8.1	8.2	8	7.9	7.7	8.1	8.1	8.1	8.2
Odor	TON	3	S	**40**	**40**	**17**	**67**	**67**	**200**	**17**	**17**	**40**	**100**
pH of CaCO3 saturation(25C)	Units			7.4	7.4	7	7	7	7	7.1	7.1	7.2	7.4
pH of CaCO3 saturation(60C)	Units			7	7	6.5	6.6	6.5	6.5	6.6	6.7	6.8	6.9
Specific Conductance	umho/cm	1600	S	1140	1140	**2150**	**2440**	**2790**	**2870**	**2580**	**2690**	1300	1200
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	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium, Total, ICAP/MS	ug/l	1000	P	12	12	12	13	26	25	56	57	63	58
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	2.3	1.9	2.5	2.7	3	ND	3	1.8	2.1
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			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	6.7	6.6	7.1	6.3	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	100	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			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l			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	1000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	700	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	3.6	1.2

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 2005/2006

Water Quality 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
				03/28/06	08/15/06	04/11/06	09/26/06	03/28/06	08/15/06	03/28/06	08/15/06	03/28/06	08/15/06
Total Dissolved Solid (TDS)	mg/l	1000	S	510	562	**1450**	**1480**	352	484	**1710**	**2170**	**6760**	**6300**
Cation Sum	meq/l			9.2	9.2	24	26	7.4	6.8	29	29	110	110
Anion Sum	meq/l			9	6.8	26	25	7	6.5	29	27	99	110
Iron, Total, ICAP	mg/l	0.3	S	0.081	0.076	0.071	0.078	0.021	ND	0.024	ND	0.028	ND
Manganese, Total, ICAP/MS	ug/l	50	S	5.6	4.6	15	16	9.4	9.6	18	13	**91**	**91**
Turbidity	NTU	5	S	0.55	0.5	0.5	0.8	0.55	0.65	0.9	0.6	1.9	**5.2**
Alkalinity	mg/l			378	276	470	457	184	169	217	254	171	155
Boron	mg/l			0.67	0.69	1.7	1.8	0.24	0.23	0.57	0.58	0.62	0.62
Bicarbonate as HCO3,calculated	mg/l			460	330	571	560	220	210	260	310	210	190
Calcium, Total, ICAP	mg/l			3.4	3.4	32	34	25	23	98	95	370	360
Carbonate as CO3, Calculated	mg/l			15	11	5.9	5.8	2.9	2.2	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			18	18	179	190	100	93	430	410	1600	1600
Chloride	mg/l	500	S	48	45	**580**	**570**	118	110	**820**	**777**	**3000**	**3310**
Fluoride	mg/l	2	P	1.01	0.93	0.14	0.33	0.29	0.21	0.46	ND	0.2	0.11
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.4	0.3	1	1	0.6	0.4	0.9	0.9	1.3	1.2
Magnesium, Total, ICAP	mg/l			2.4	2.4	24	25	9.2	8.6	44	42	170	170
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			5.6	5.8	11	12	5.2	5.1	13	11	25	26
Sodium, Total, ICAP	mg/l			200	200	470	500	120	110	470	470	1700	1700
Sulfate	mg/l	500	S	ND	ND	ND	ND	ND	ND	49	ND	**520**	470
Surfactants	mg/l	0.5	S	ND	ND	0.086	0.08	ND	ND	0.051	0.056	0.054	0.075
Total Nitrate, Nitrite-N, CALC	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			12.2	18	14	19	6.7	3.5	1.3	5.2	3.3	0.96
Carbon Dioxide	mg/l			ND	ND	5.9	5.8	ND	2.2	5.4	6.4	4.3	4.9
General Physical													
Apparent Color	ACU	15	S	**400**	**500**	**125**	**80**	**30**	**40**	**60**	**80**	**15**	**15**
Lab pH	Units			8.7	8.7	8.2	8.2	8.3	8.2	7.9	7.9	7.9	7.8
Odor	TON	3	S	**3**	**3**	**4**	**17**	2	**3**	**200**	**200**	**4**	**8**
pH of CaCO3 saturation(25C)	Units			8.3	8.4	7.2	7.2	7.7	7.8	7	7	6.6	6.6
pH of CaCO3 saturation(60C)	Units			7.8	7.9	6.7	6.7	7.3	7.3	6.6	6.5	6.1	6.2
Specific Conductance	umho/cm	1600	S	898	861	**2600**	**2500**	763	703	**3000**	**2960**	**9000**	**9990**
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	50	P	ND	ND	ND	ND	ND	ND	ND	3.2	ND	2.4
Barium, Total, ICAP/MS	ug/l	1000	P	7.2	6	52	53	11	11	83	72	100	79
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	3.1	2.6	1.7	1.9	1.8	1.3	2.3	2	3.1	5.2
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	2.1	ND	ND	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l			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	10	13
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	15	34	ND
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	0.71	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	5.8	6.1	ND	6	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	100	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			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l			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	1000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	700	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	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

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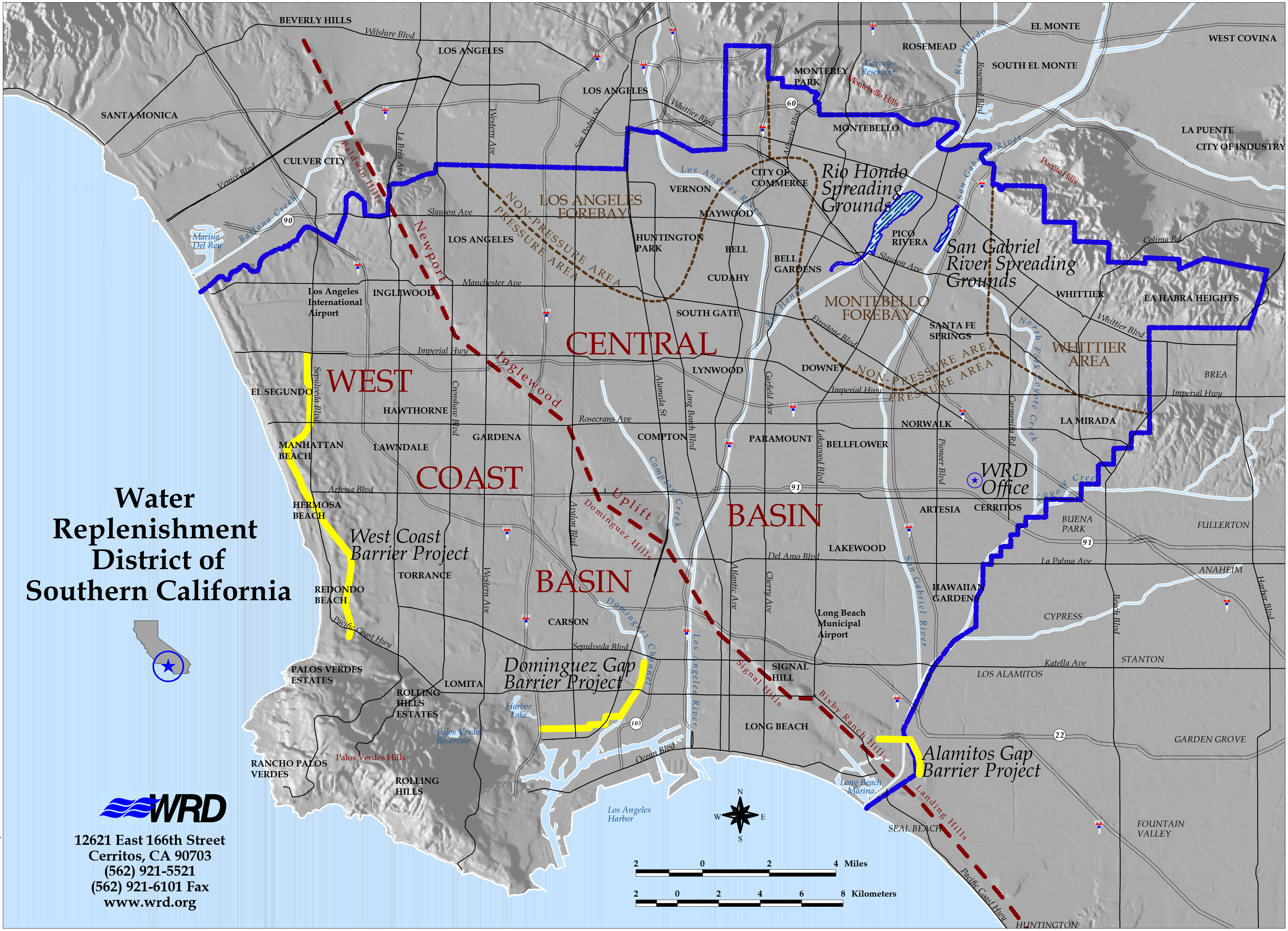
FIGURES



Water Replenishment District of Southern California
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COAST
BASIN
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BASIN
LOS ANGELES FOREBAY
MONTEBELLO FOREBAY
WHITTIER AREA
NON-PRESSURE AREA
PRESSURE AREA
Rio Hondo Spreading Grounds
San Gabriel River Spreading Grounds
West Coast Barrier Project
Dominguez Gap Barrier Project
Alamitos Gap Barrier Project
WRD Office
Newport
Inglewood
Uplift
Baldwin Hills
Dominguez Hills
Signal Hills
Bixby Ranch Hills
Landing Hills
Montebello Hills
Puente Hills
Palos Verdes Hills
BEVERLY HILLS
LOS ANGELES
SANTA MONICA
CULVER CITY
INGLEWOOD
Los Angeles International Airport
EL SEGUNDO
HAWTHORNE
MANHATTAN BEACH
LAWNDALE
GARDENA
HERMOSA BEACH
REDONDO BEACH
TORRANCE
CARSON
PALOS VERDES ESTATES
LOMITA
ROLLING HILLS ESTATES
RANCHO PALOS VERDES
ROLLING HILLS
VERNON
MAYWOOD
HUNTINGTON PARK
BELL
CUDAHY
BELL GARDENS
SOUTH GATE
LYNWOOD
COMPTON
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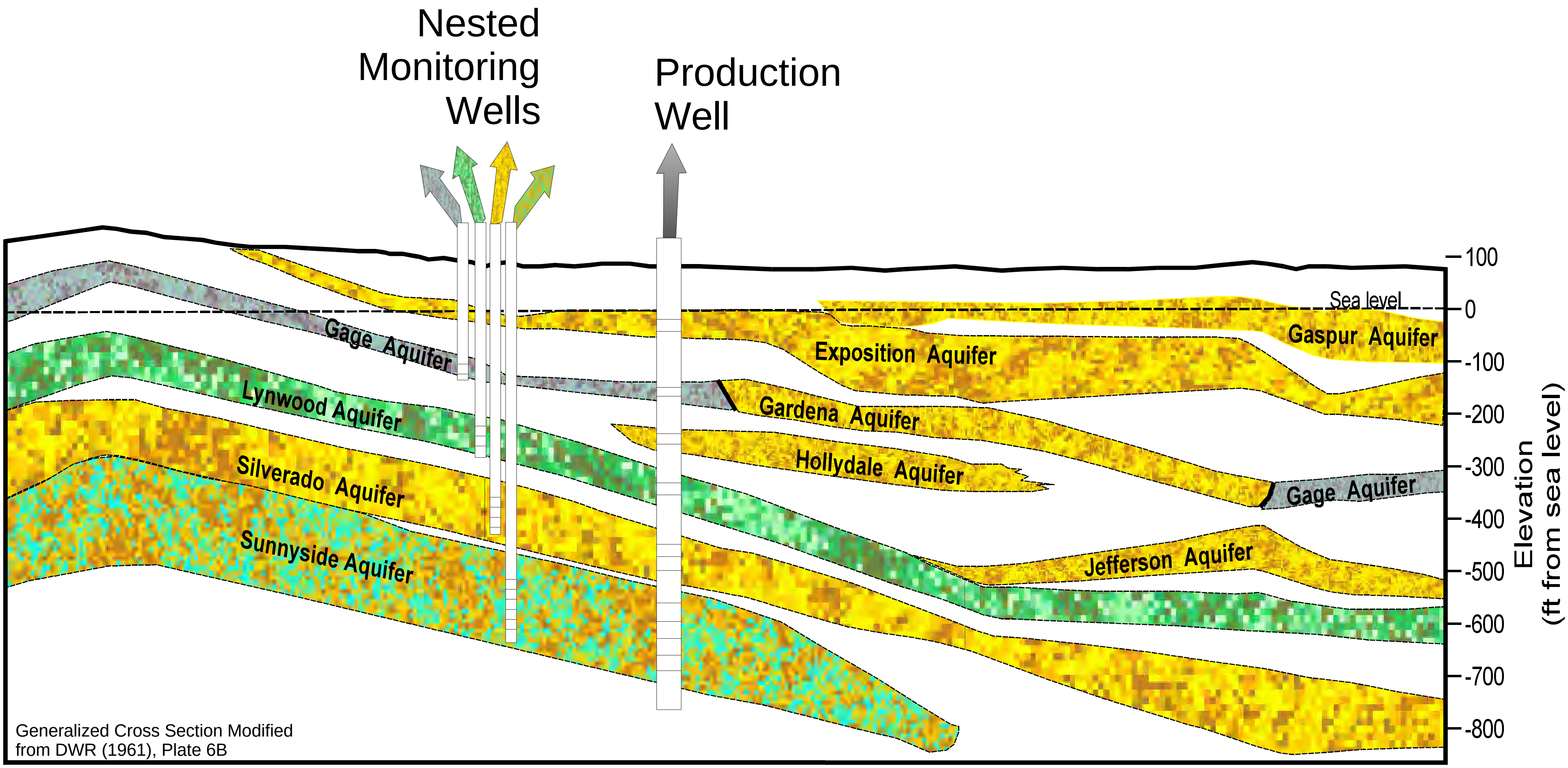
PICO RIVERA
WHITTIER
LA HABRA HEIGHTS
SANTA FE SPRINGS
BREA
BUENA PARK
FULLERTON
ANAHEIM
CYPRESS
LOS ALAMITOS
STANTON
GARDEN GROVE
FOUNTAIN VALLEY
Marina Del Rey
Ballona Creek
Garvey Reservoir
Rio Hondo
Los Angeles River
San Gabriel River
North Fork Coyote Creek
Coyote Creek
Compton Creek
Dominguez Channel
Harbor Lake
Palos Verdes Reservoir
Los Angeles Harbor
Long Beach Marina
Wilshire Blvd
Venice Blvd
Whittier Blvd
Slauson Ave
Manchester Ave
Imperial Hwy
Rosecrans Ave
Artesia Blvd
Del Amo Blvd
Sepulveda Blvd
Pacific Coast Hwy
Ocean Blvd
Firestone Blvd
Colima Rd
La Palma Ave
Katella Ave
Western Ave
La Brea Ave
Crenshaw Blvd
San Pedro St
Alameda St
Long Beach Blvd
Atlantic Blvd
Atlantic Ave
Garfield Ave
Lakewood Blvd
Cherry Ave
Pioneer Blvd
Carmenita Rd
Rosemead Blvd
Avalon Blvd
Beach Blvd
Harbor Blvd
N
S
E
W
2 0 2 4 Miles
2 0 2 4 6 8 Kilometers

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.

WRD

Figure 1.2

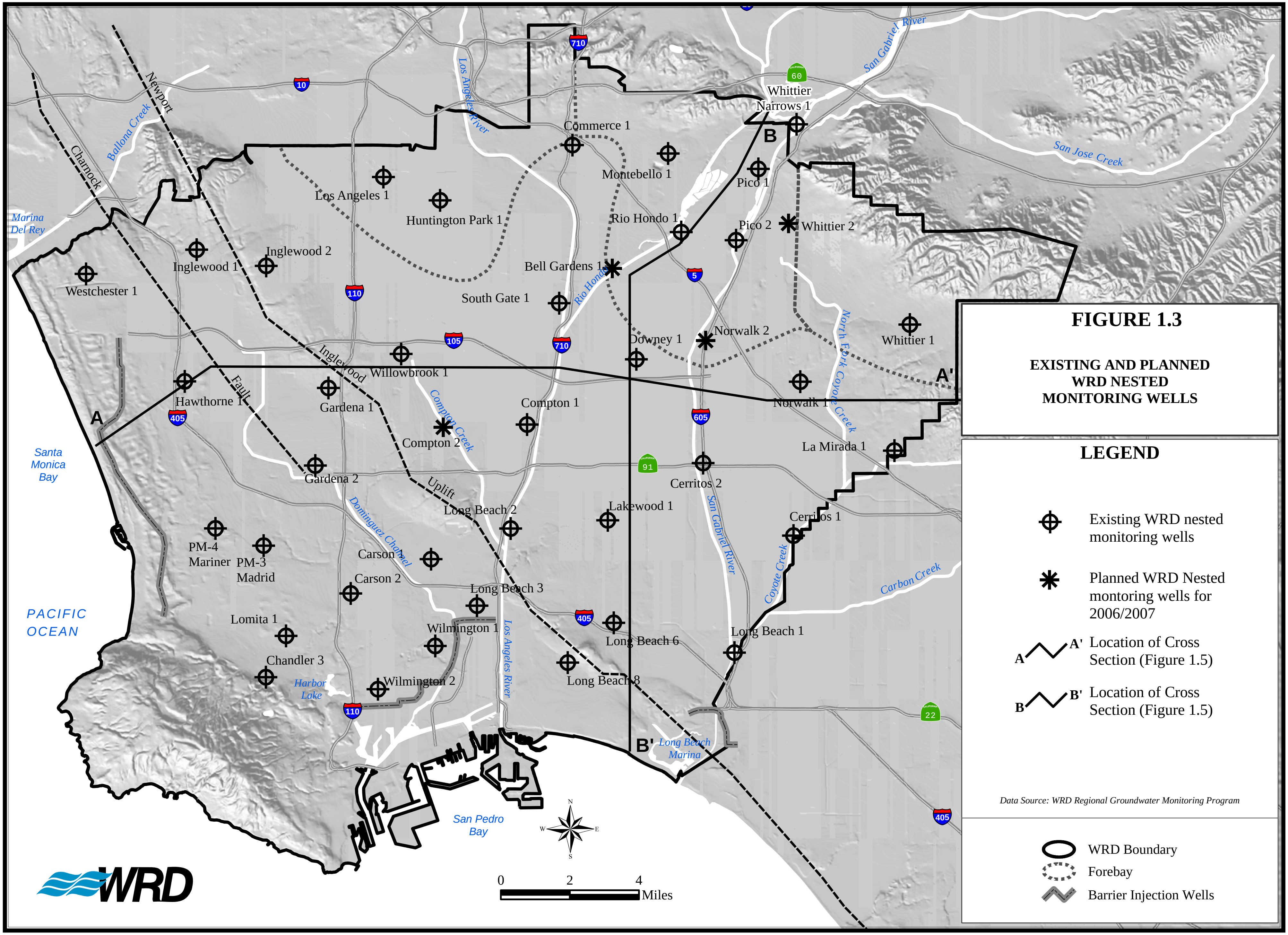
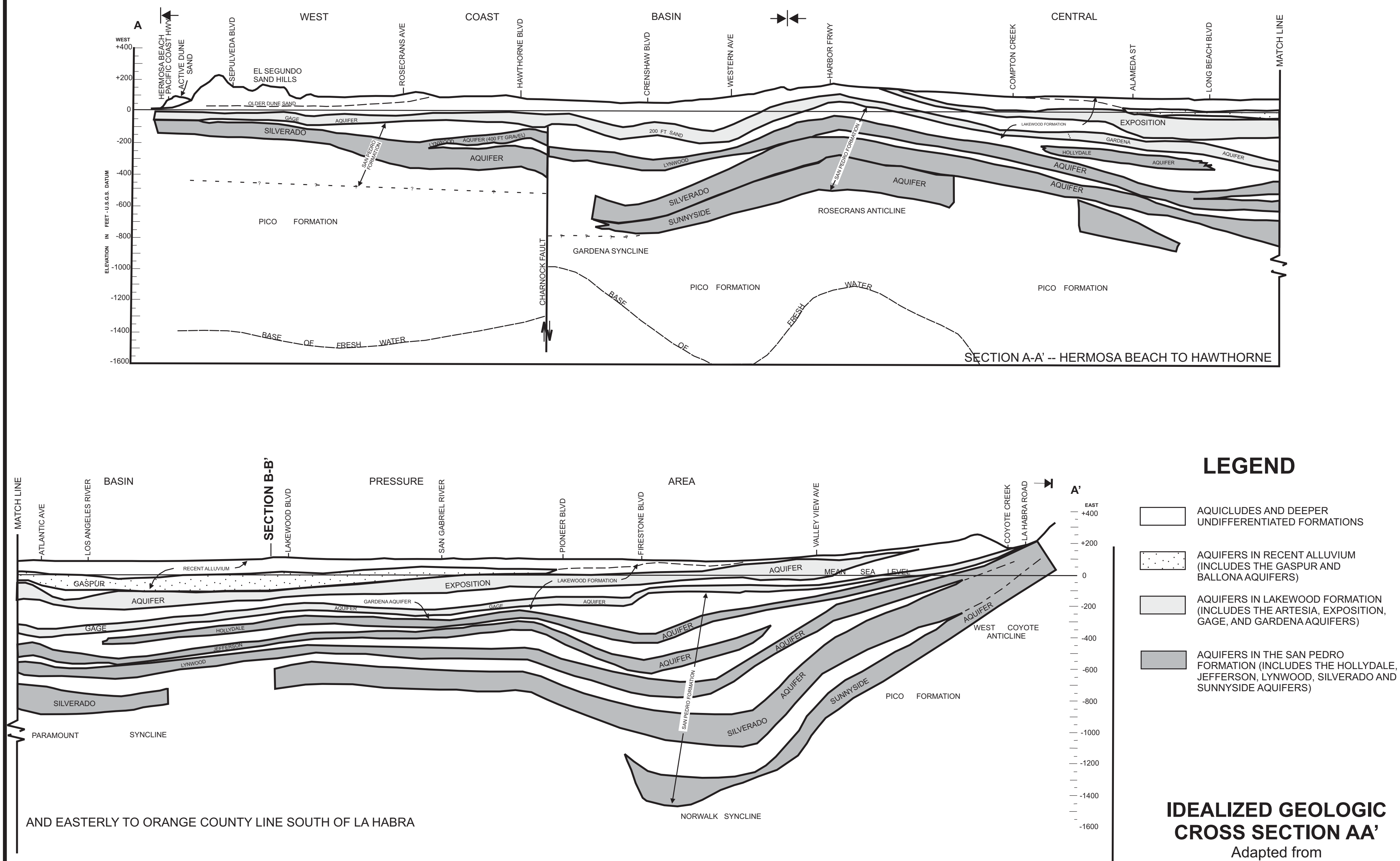


FIGURE 1.3

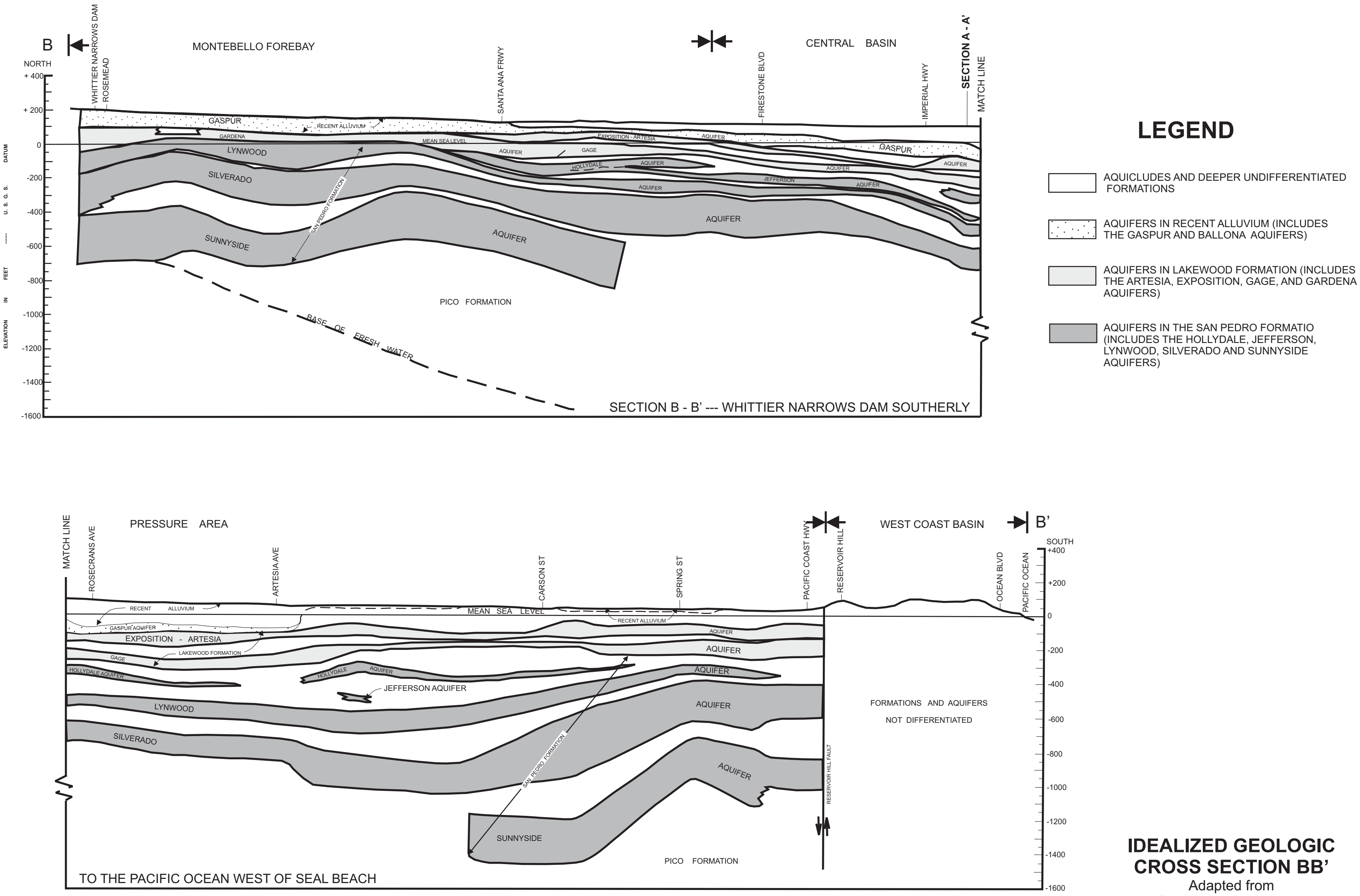
EXISTING AND PLANNED WRD NESTED MONITORING WELLS



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

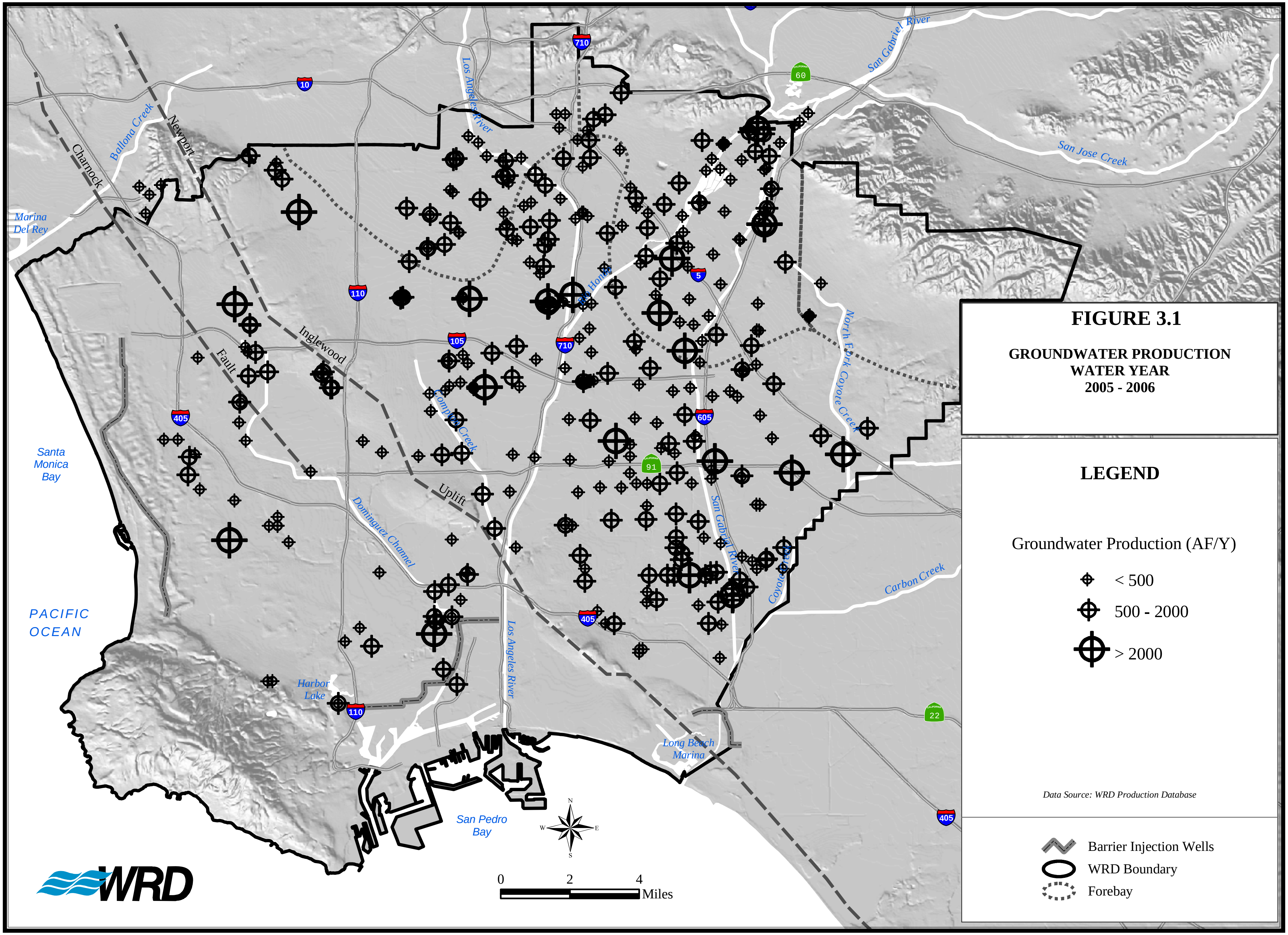


FIGURE 3.1
GROUNDWATER PRODUCTION
WATER YEAR
2005 - 2006
LEGEND
Groundwater Production (AF/Y)
< 500
500 - 2000
> 2000
Data Source: WRD Production Database
Barrier Injection Wells
WRD Boundary
Forebay
PACIFIC OCEAN
Santa Monica Bay
Marina Del Rey
San Pedro Bay
Harbor Lake
Long Beach Marina
Ballona Creek
Newport
Charnock
Inglewood
Fault
Uplift
Dominguez Channel
Compton Creek
Los Angeles River
Rio Hondo
San Gabriel River
San Jose Creek
North Fork Coyote Creek
Coyote Creek
Carbon Creek
0 2 4 Miles
WRD

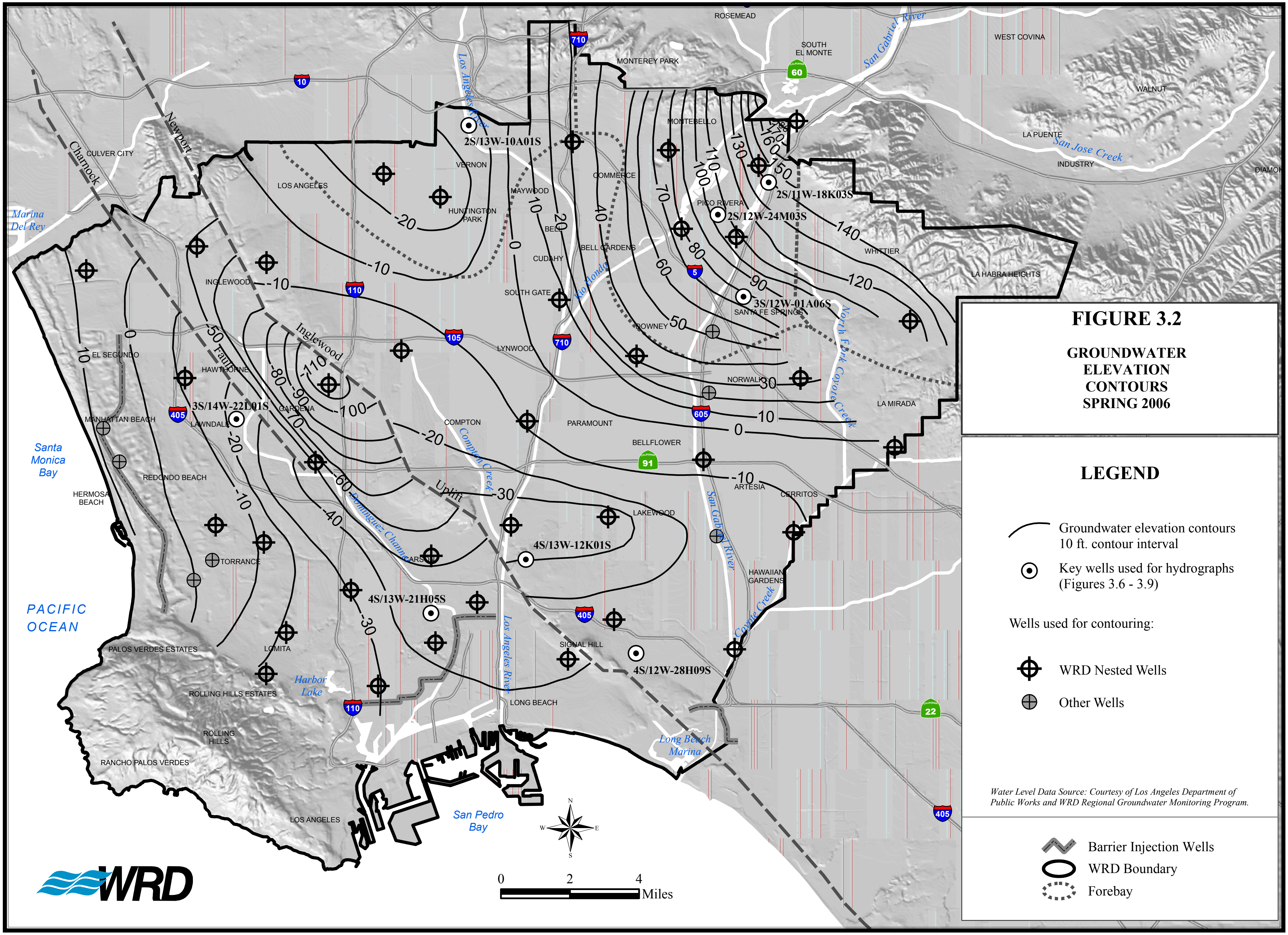


FIGURE 3.2

GROUNDWATER ELEVATION CONTOURS SPRING 2006

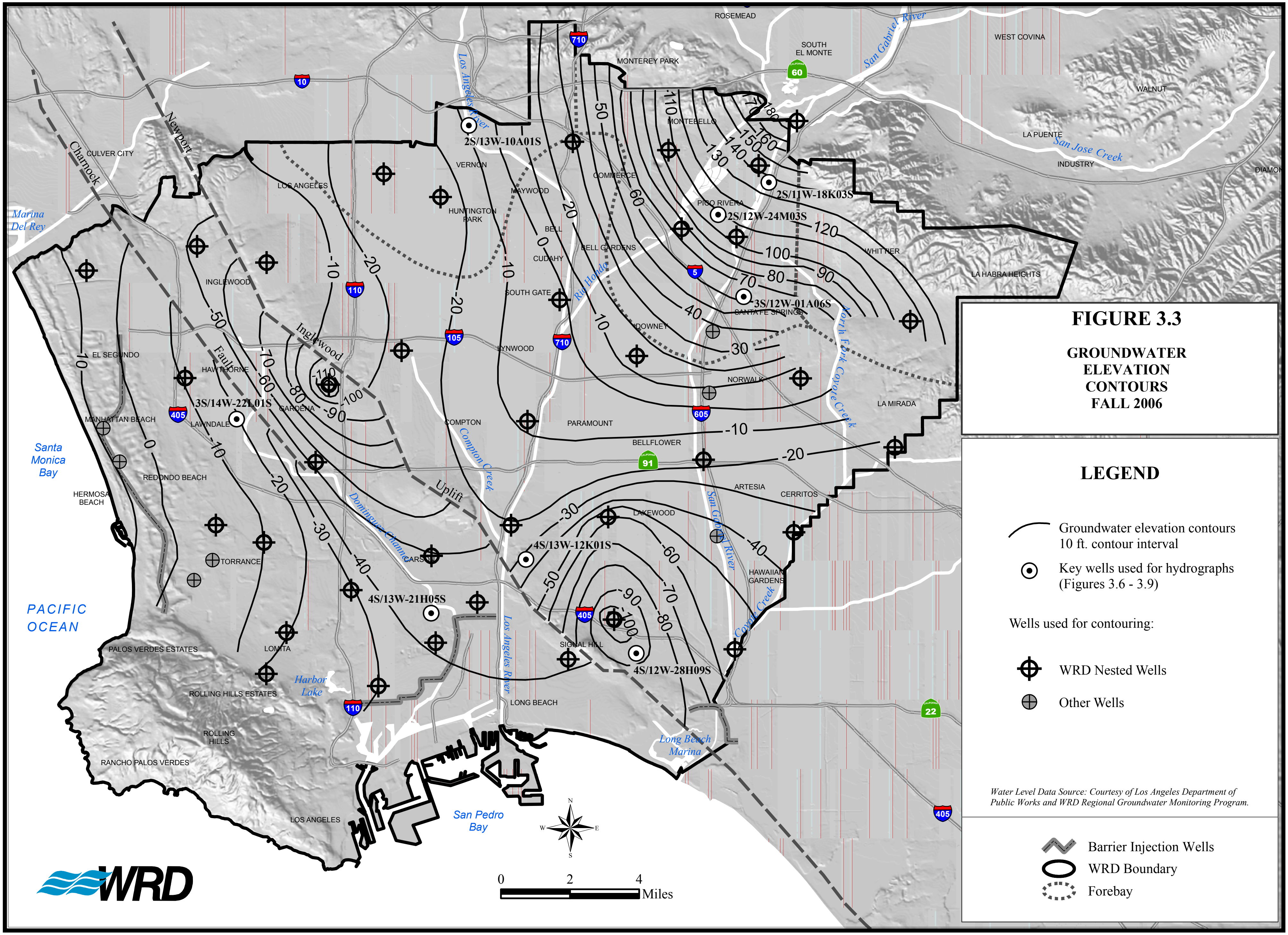


FIGURE 3.3

GROUNDWATER ELEVATION CONTOURS FALL 2006

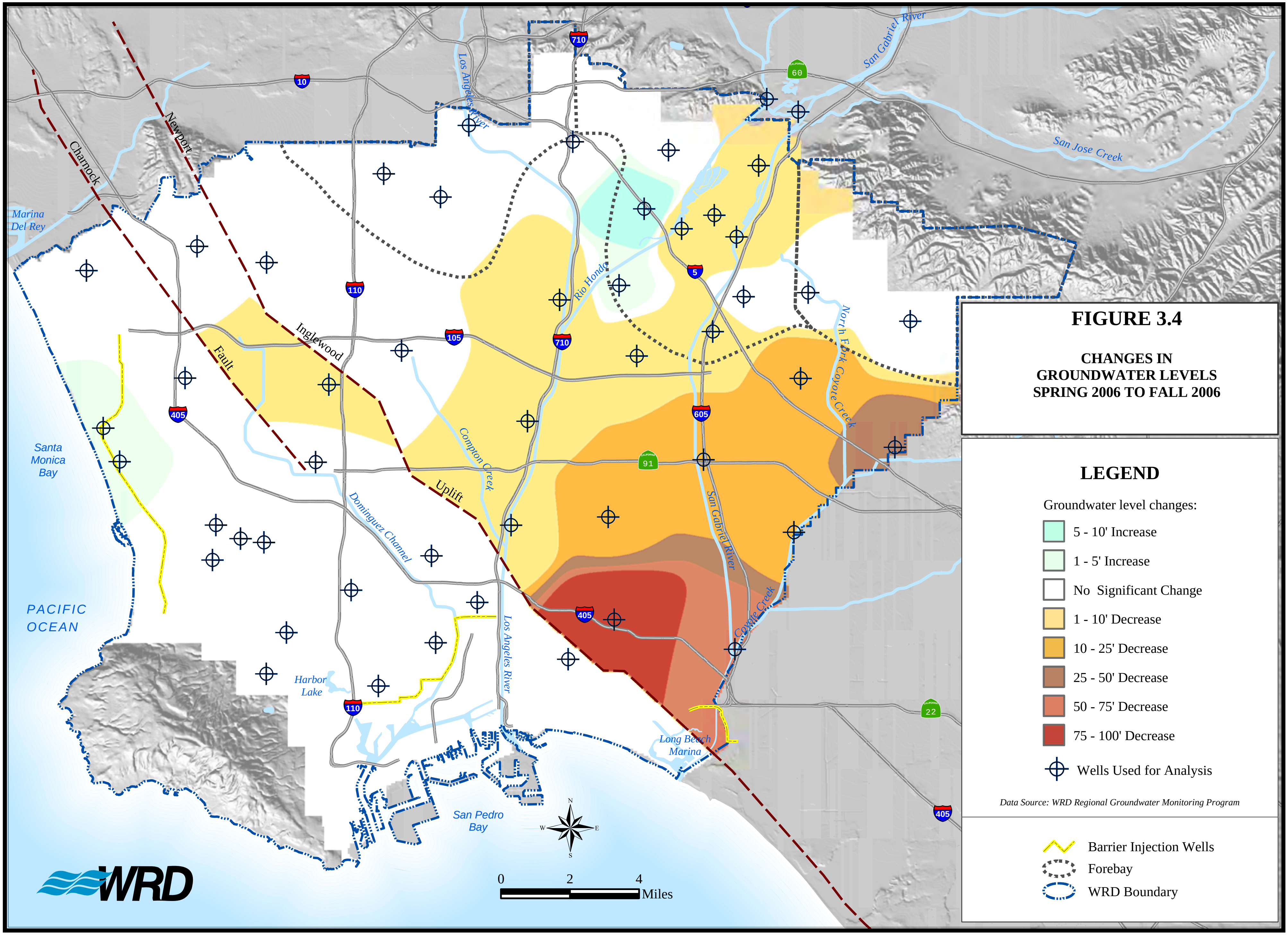


FIGURE 3.4

CHANGES IN GROUNDWATER LEVELS SPRING 2006 TO FALL 2006

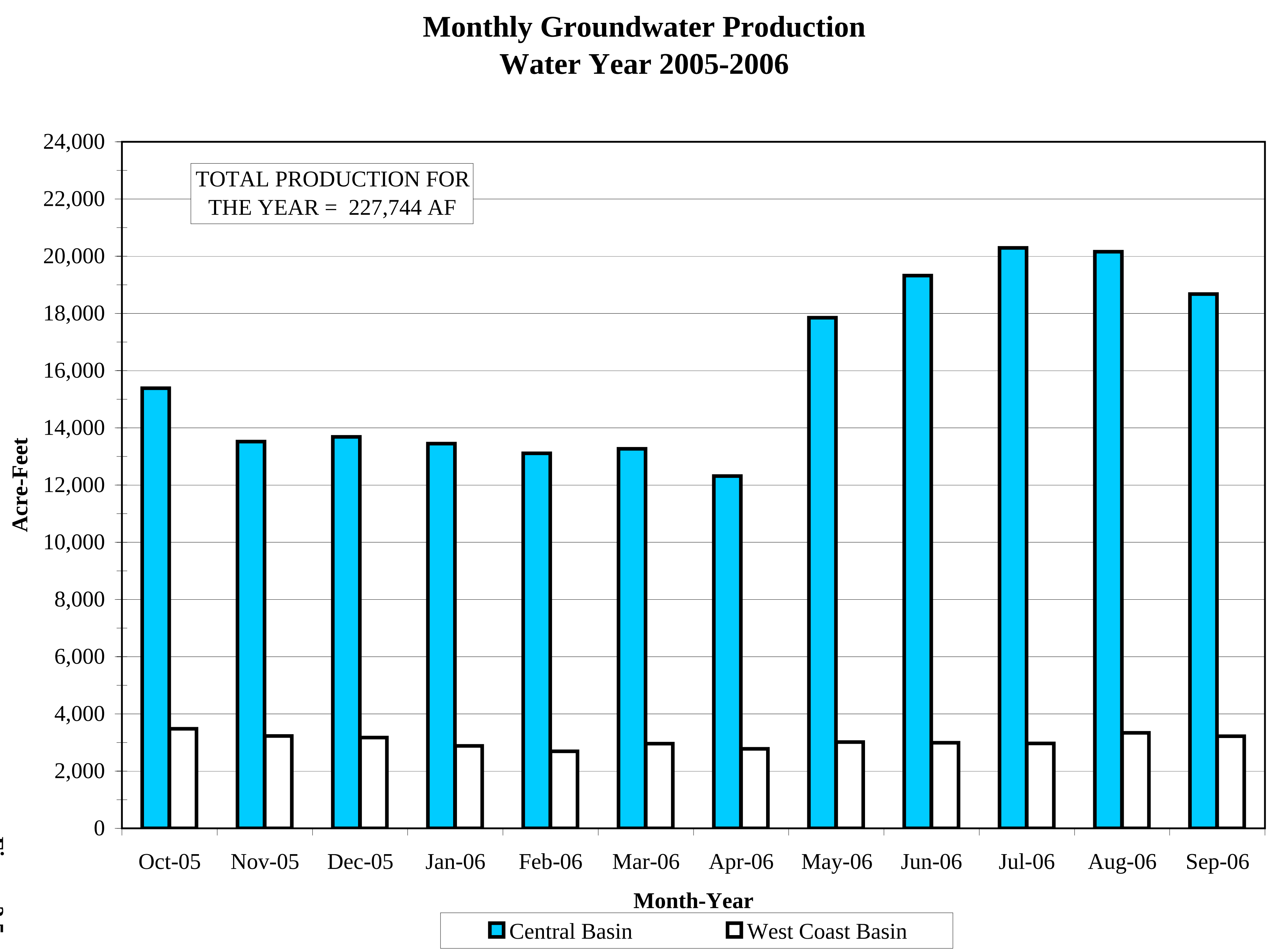
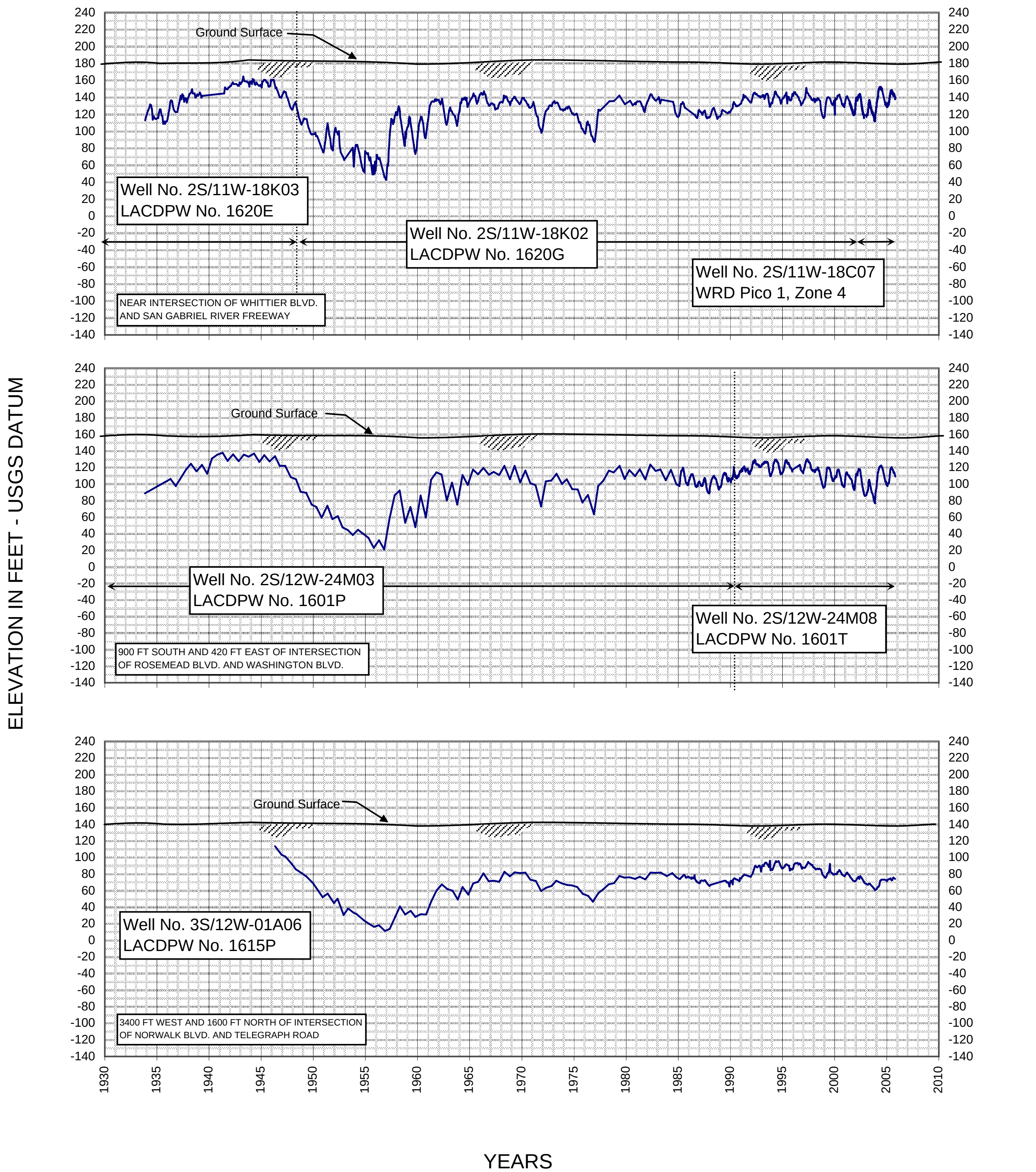

Monthly Groundwater Production
Water Year 2005-2006
TOTAL PRODUCTION FOR THE YEAR = 227,744 AF
Acre-Feet
24,000
22,000
20,000
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
Oct-05
Nov-05
Dec-05
Jan-06
Feb-06
Mar-06
Apr-06
May-06
Jun-06
Jul-06
Aug-06
Sep-06
Month-Year
Central Basin
West Coast Basin

Figure 3.5

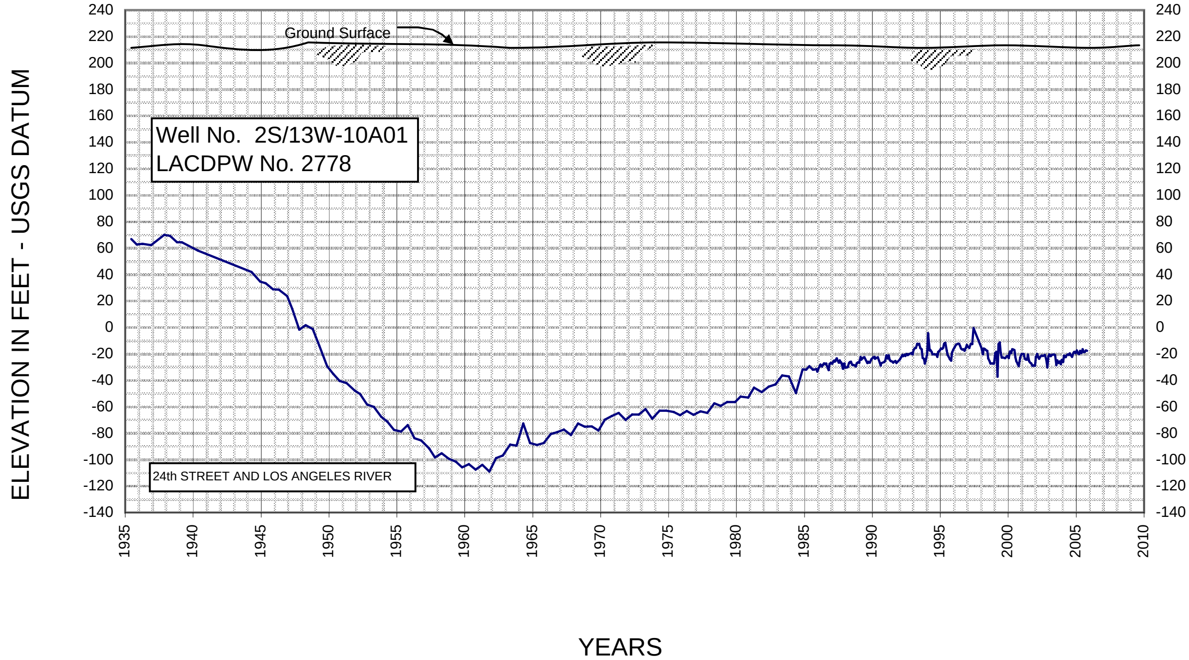


See Figure 3.2 for well locations

FLUCTUATIONS OF WATER LEVEL AT WELLS

MONTEBELLO FOREBAY

Figure 3.6

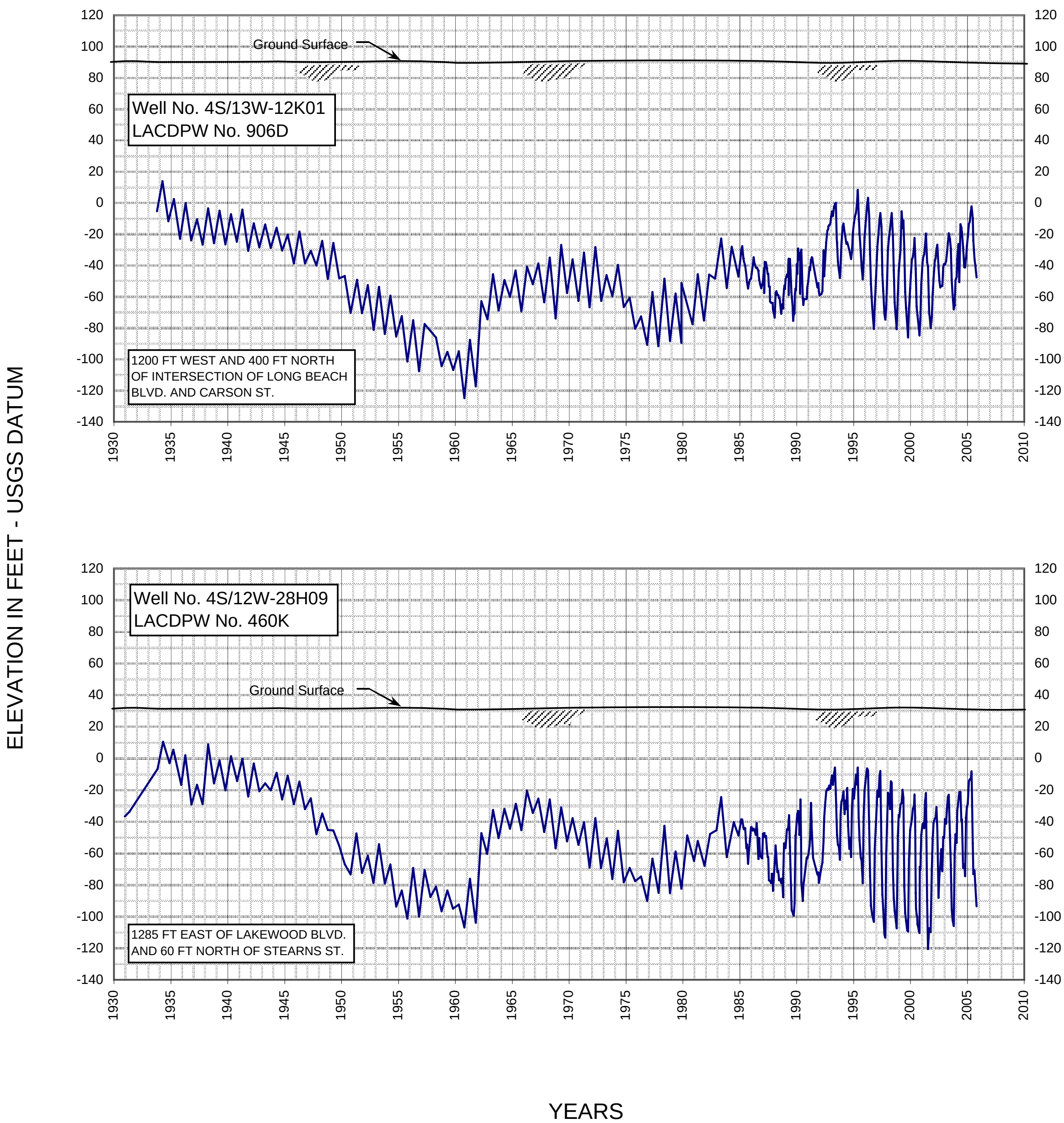


See Figure 3.2 for well location

FLUCTUATIONS OF WATER LEVEL AT WELLS

LOS ANGELES FOREBAY

Figure 3.7

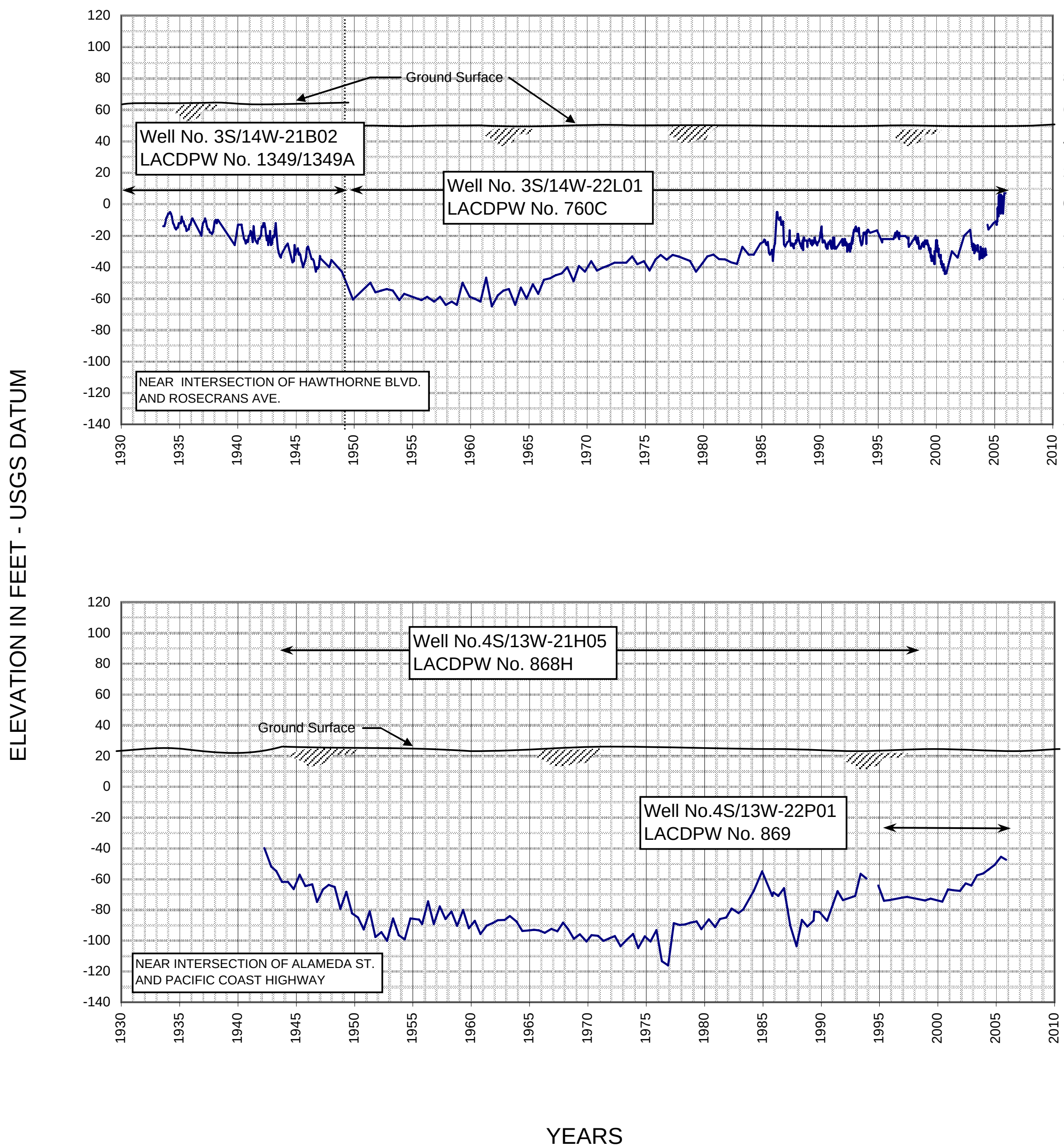


See Figure 3.2 for well locations

FLUCTUATIONS OF WATER LEVEL AT WELLS

CENTRAL BASIN PRESSURE AREA

Figure 3.8



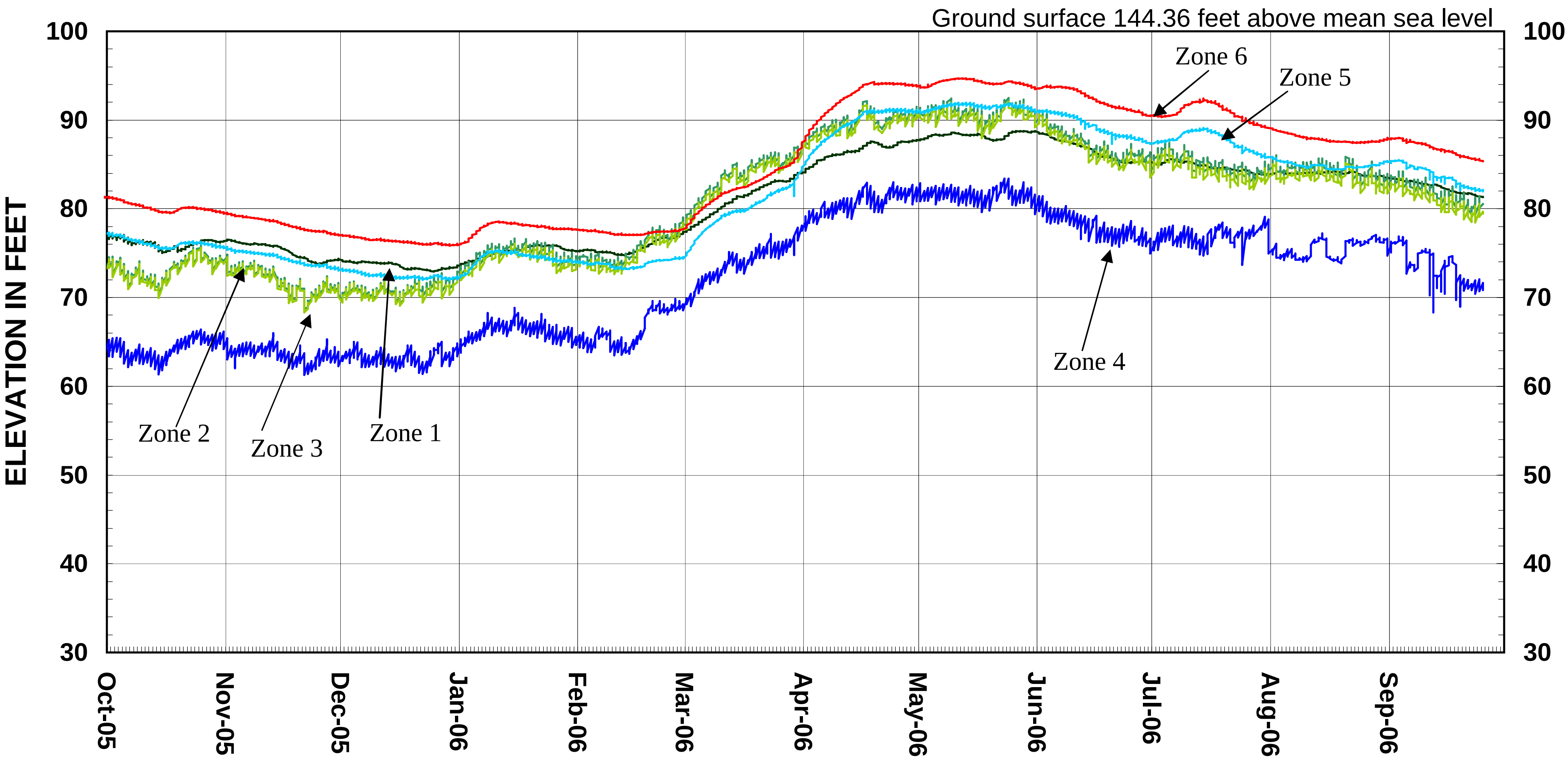
See Figure 3.2 for well locations

FLUCTUATIONS OF WATER LEVEL AT WELLS

WEST BASIN

Figure 3.9

FLUCTUATIONS OF WATER LEVELS IN WRD NESTED MONITORING WELL RIO HONDO #1



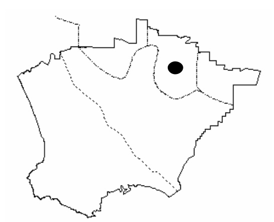
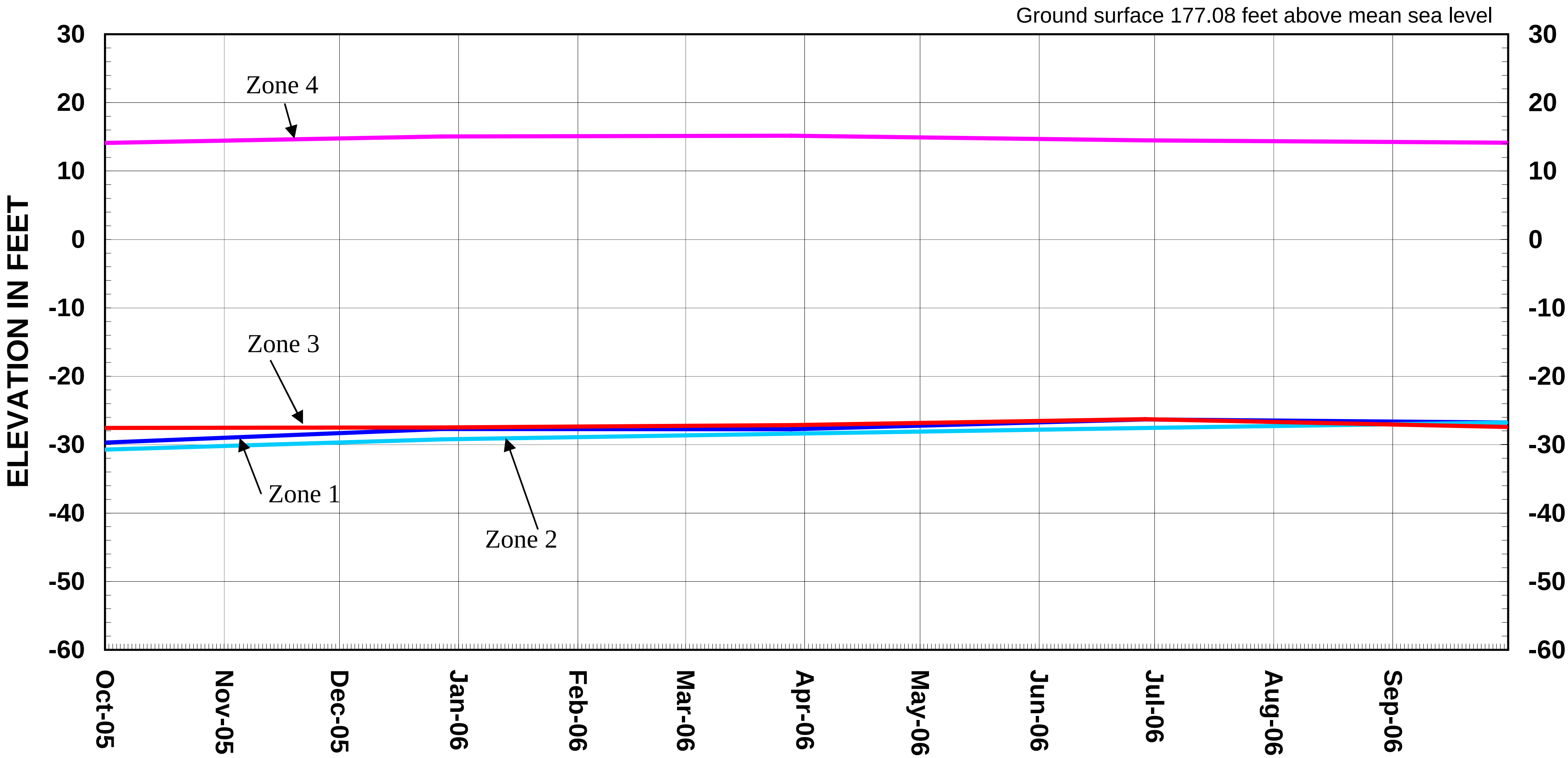


Figure 3.10

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



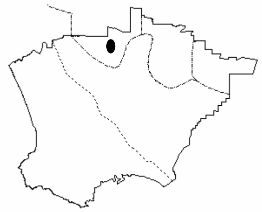
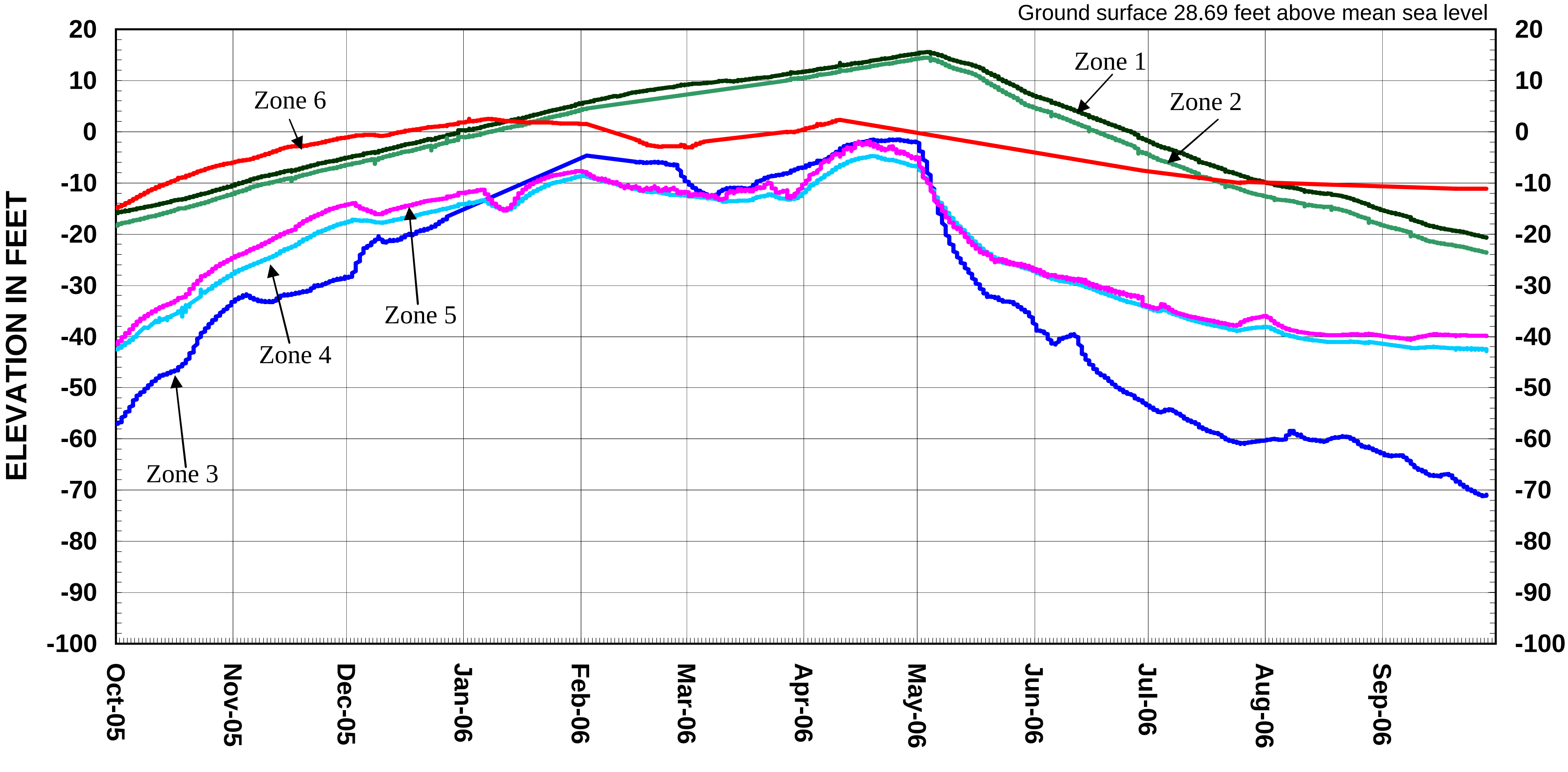


Figure 3.11

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



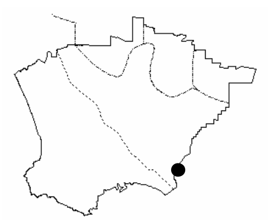
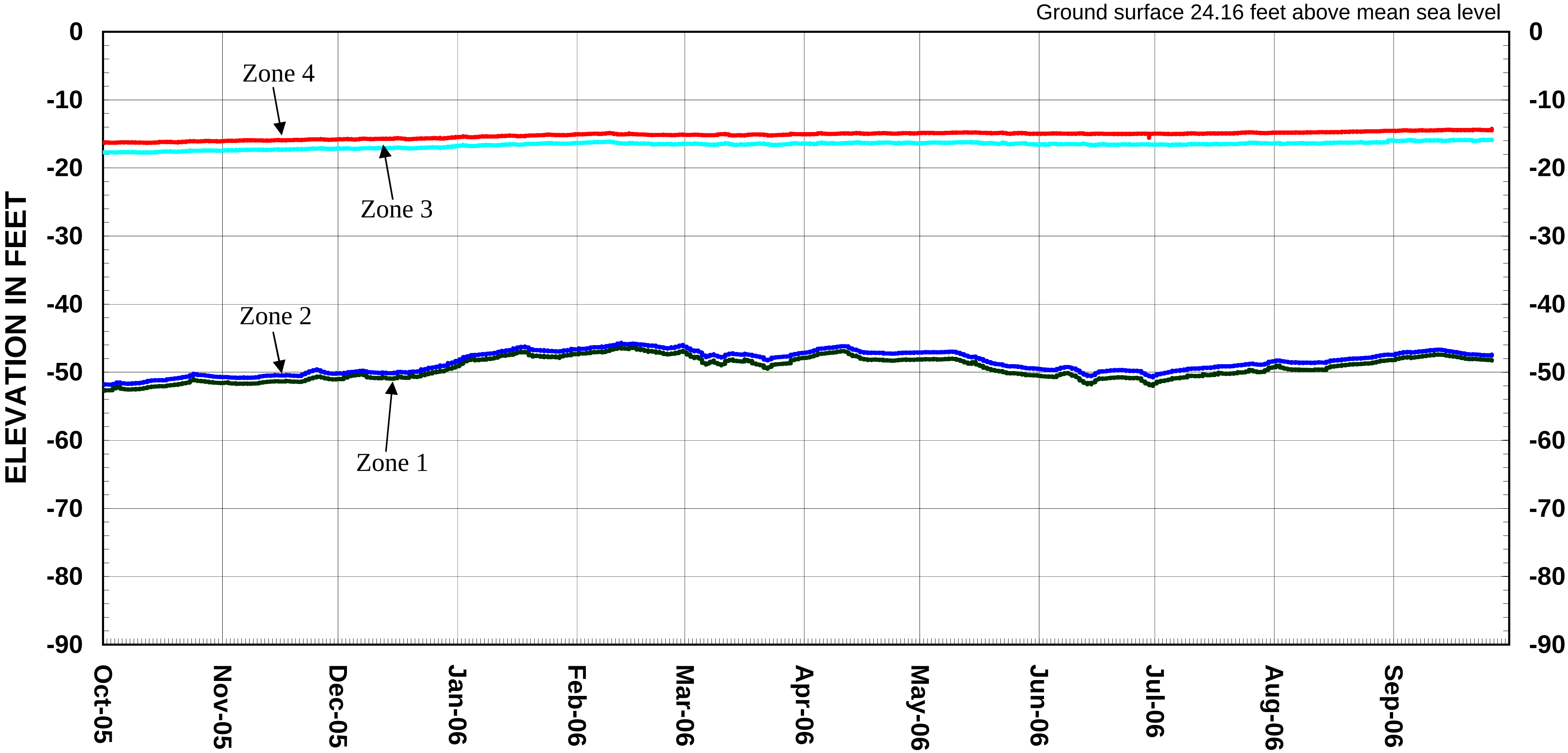
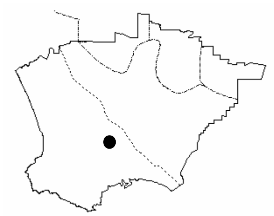


Figure 3.12

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





Zone 1 (990' - 1110', Sunnyside)
Zone 2 (740' - 760', Silverado)
Zone 3 (460' - 480', Lynwood)
Zone 4 (250' - 270', Gage)

Figure 3.13

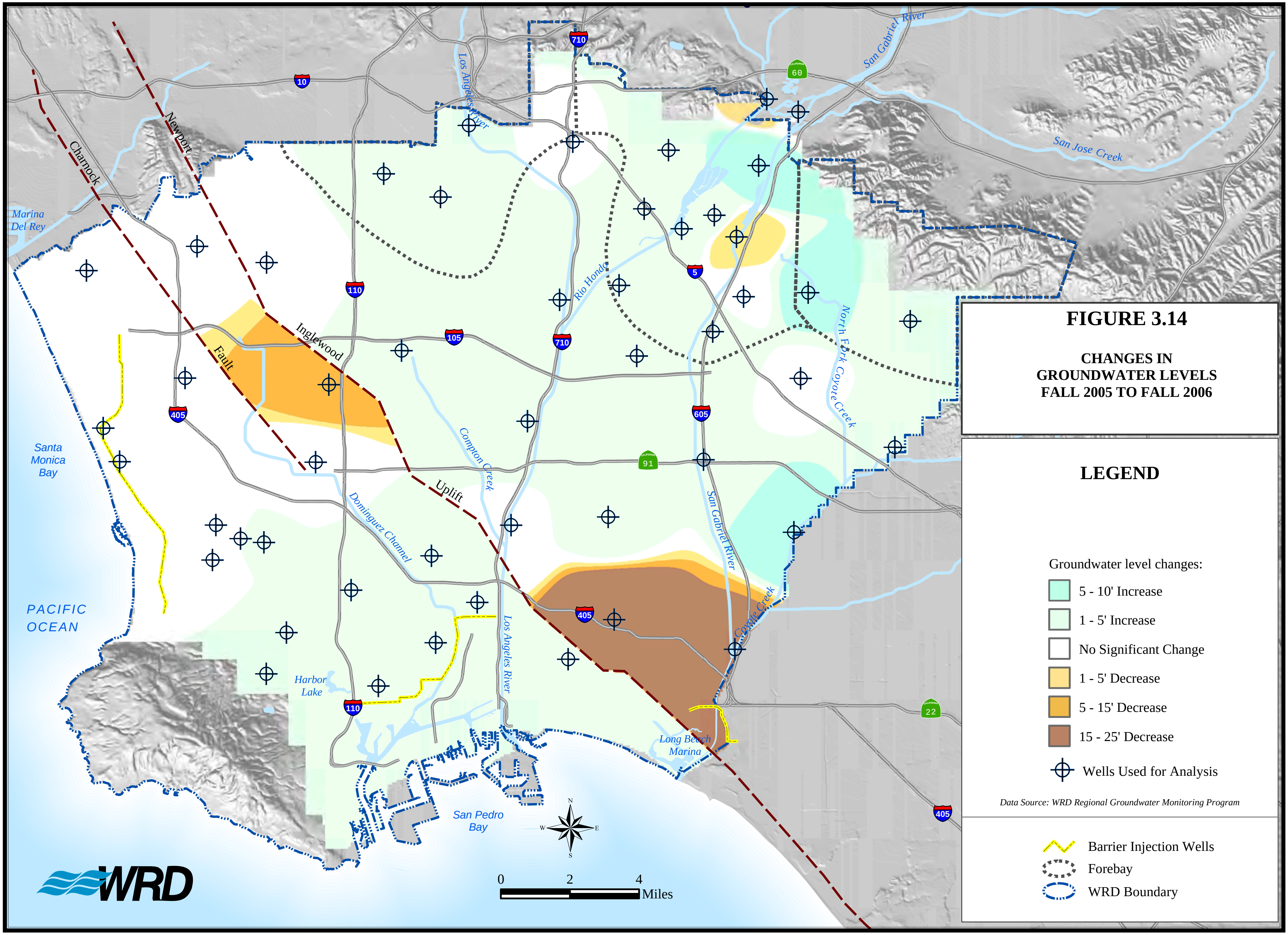


FIGURE 3.14
CHANGES IN GROUNDWATER LEVELS FALL 2005 TO FALL 2006
LEGEND
Groundwater level changes:
5 - 10' Increase
1 - 5' Increase
No Significant Change
1 - 5' Decrease
5 - 15' Decrease
15 - 25' Decrease
Wells Used for Analysis
Data Source: WRD Regional Groundwater Monitoring Program
Barrier Injection Wells
Forebay
WRD Boundary
PACIFIC OCEAN
Santa Monica Bay
Marina Del Rey
San Pedro Bay
Harbor Lake
Long Beach Marina
Newport
Inglewood
Fault
Uplift
Charnock
Los Angeles River
San Gabriel River
San Jose Creek
Rio Hondo
Compton Creek
Dominguez Channel
North Fork Coyote Creek
Coyote Creek
0 2 4 Miles
WRD

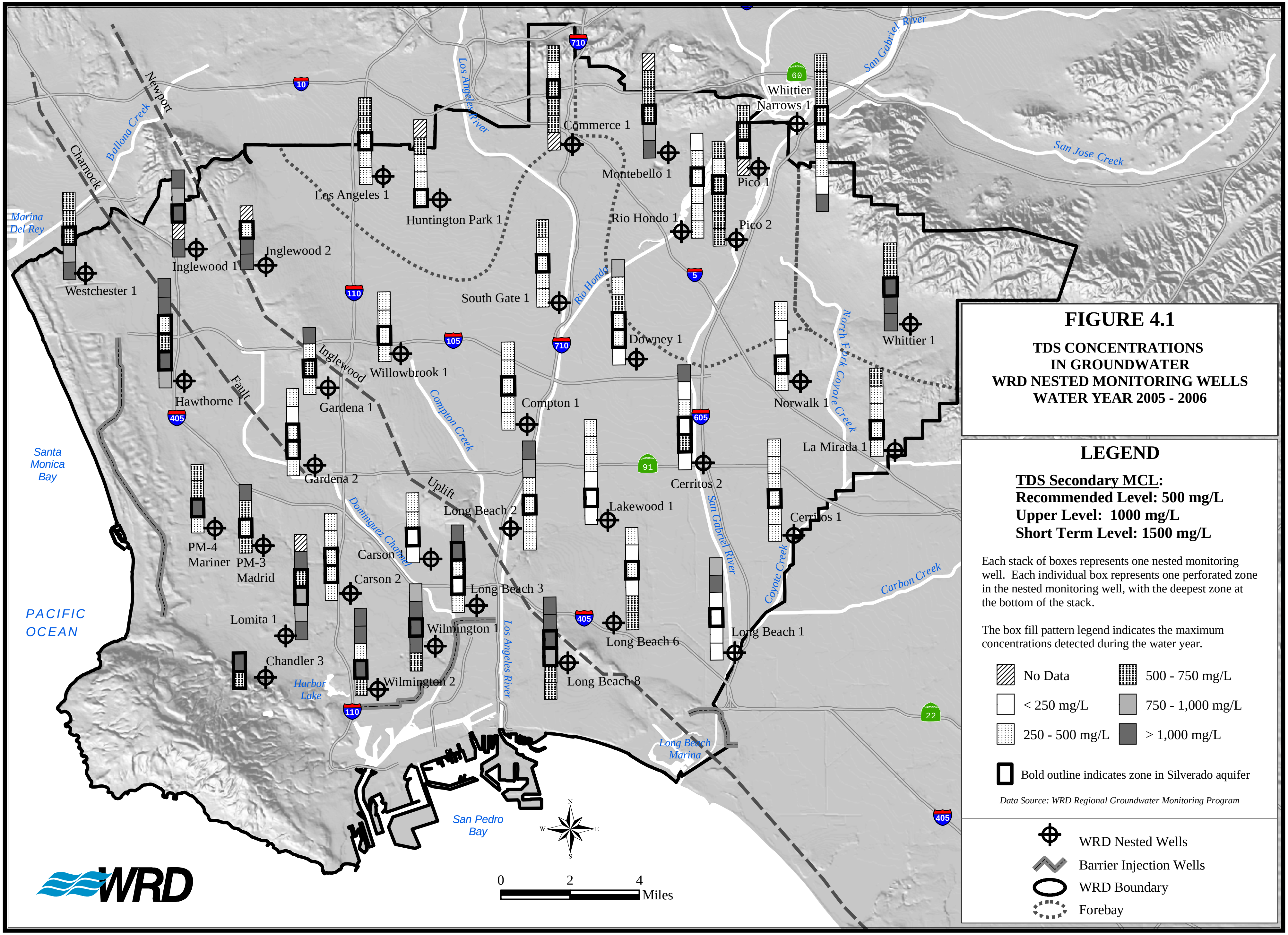


FIGURE 4.1
TDS CONCENTRATIONS
IN GROUNDWATER
WRD NESTED MONITORING WELLS
WATER YEAR 2005 - 2006
LEGEND
TDS Secondary MCL:
Recommended Level: 500 mg/L
Upper Level: 1000 mg/L
Short Term Level: 1500 mg/L
Each stack of boxes represents one nested monitoring well. Each individual box represents one perforated 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
WRD Nested Wells
Barrier Injection Wells
WRD Boundary
Forebay
Westchester 1
Inglewood 1
Inglewood 2
Los Angeles 1
Huntington Park 1
Commerce 1
Montebello 1
Whittier Narrows 1
Pico 1
Pico 2
Rio Hondo 1
South Gate 1
Whittier 1
Hawthorne 1
Gardena 1
Willowbrook 1
Downey 1
Norwalk 1
Compton 1
Gardena 2
Cerritos 2
La Mirada 1
Long Beach 2
Lakewood 1
Cerritos 1
PM-4 Mariner
PM-3 Madrid
Carson 1
Carson 2
Long Beach 3
Lomita 1
Wilmington 1
Long Beach 6
Long Beach 1
Chandler 3
Wilmington 2
Long Beach 8
Santa Monica Bay
PACIFIC OCEAN
Marina Del Rey
Harbor Lake
San Pedro Bay
Long Beach Marina
Newport
Inglewood
Fault
Charnock
Uplift
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
110
105
710
605
5
405
60
91
22
0
2
4
Miles
N
S
E
W
WRD

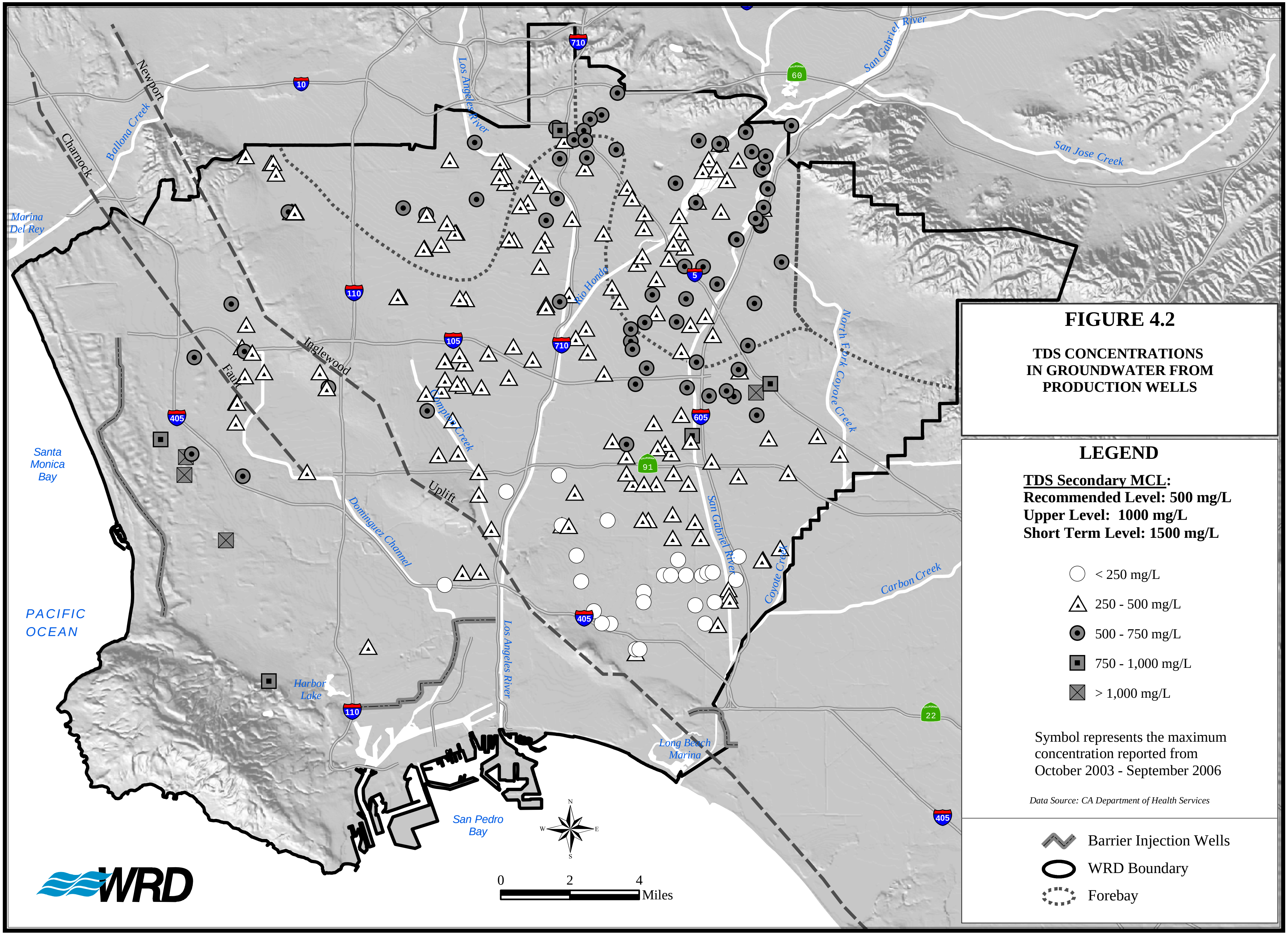


FIGURE 4.2

TDS CONCENTRATIONS IN GROUNDWATER FROM PRODUCTION WELLS

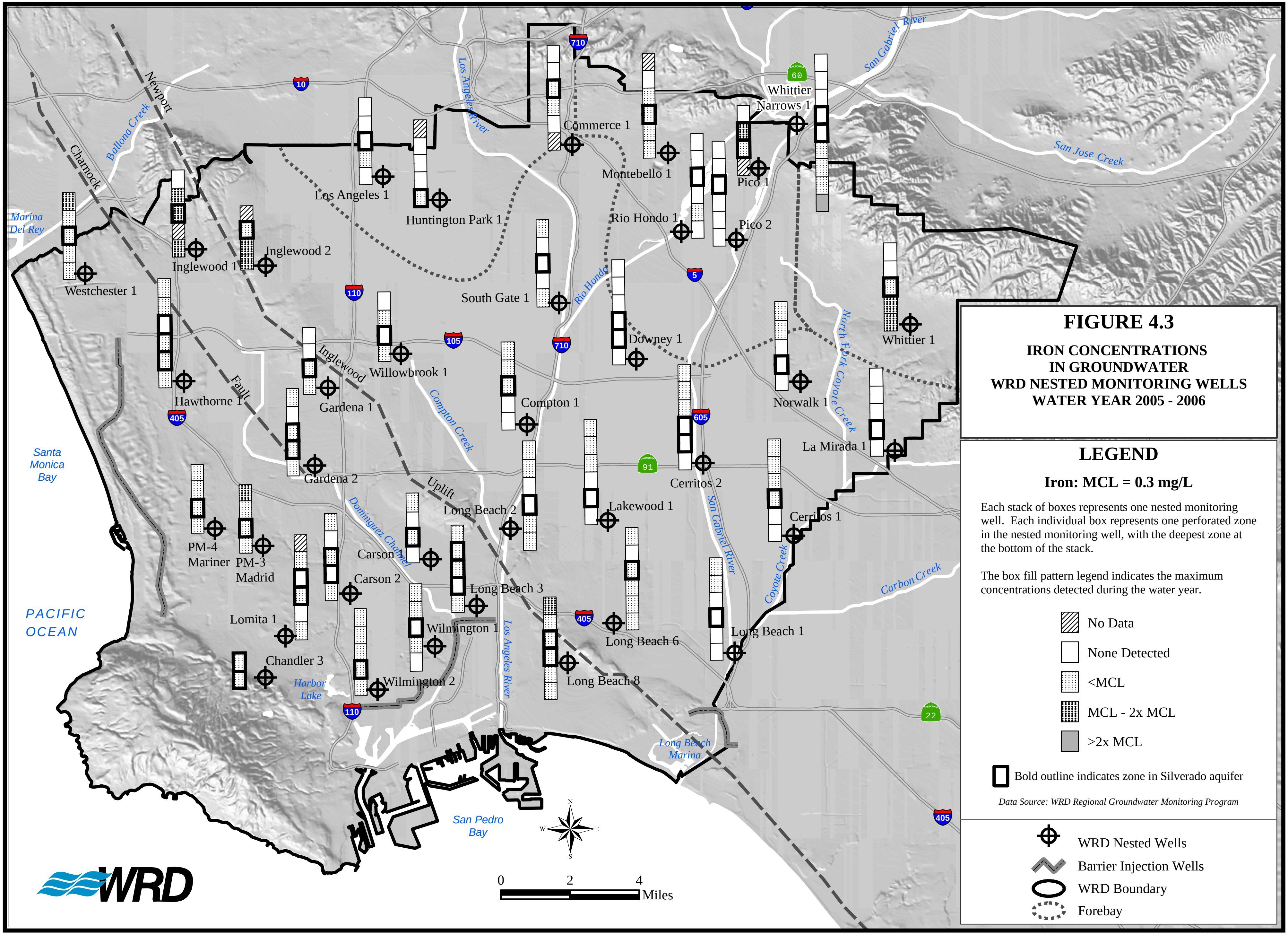


FIGURE 4.3
IRON CONCENTRATIONS IN GROUNDWATER WRD NESTED MONITORING WELLS WATER YEAR 2005 - 2006

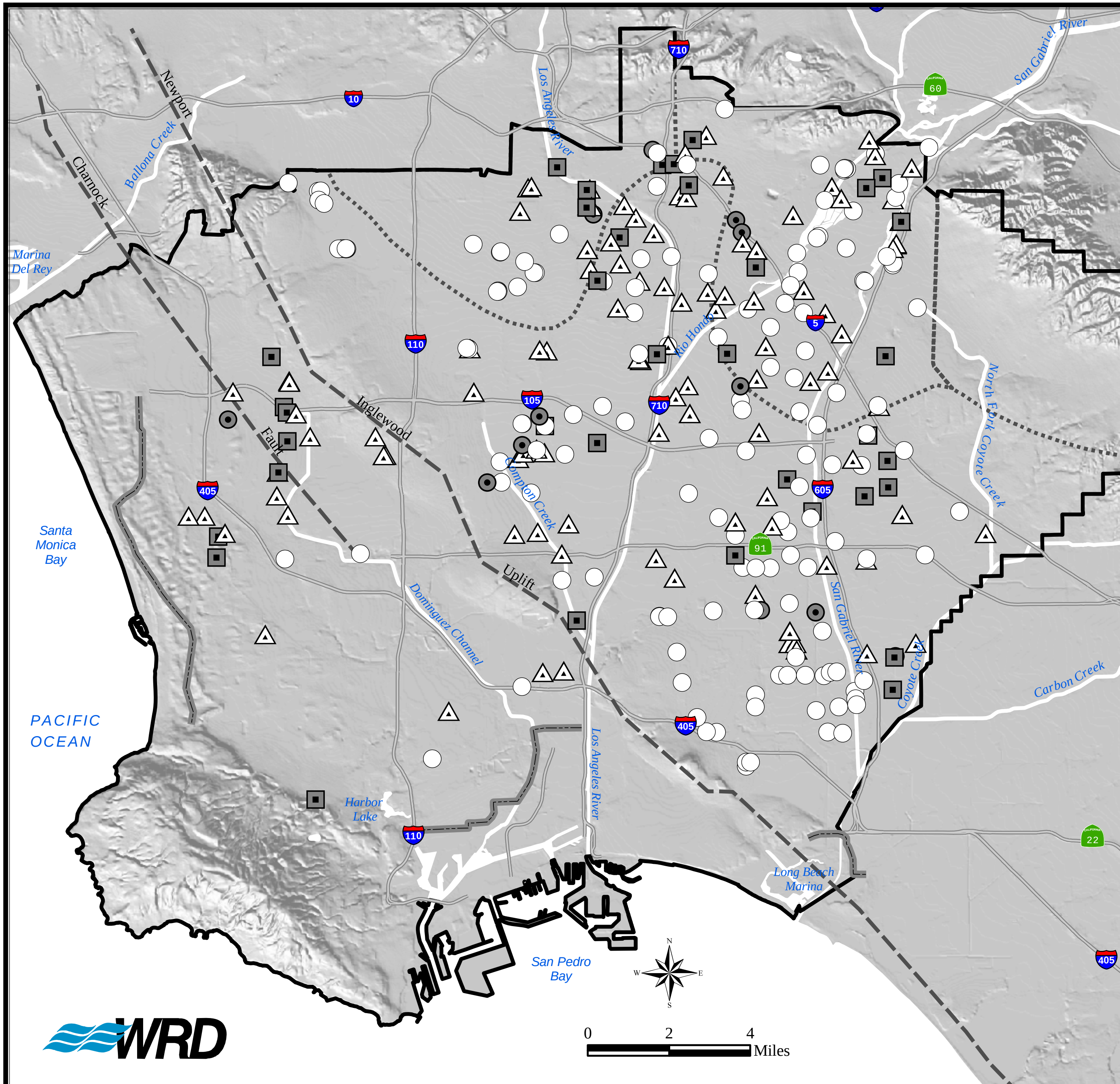


FIGURE 4.4

IRON CONCENTRATIONS IN GROUNDWATER FROM PRODUCTION WELLS

LEGEND

Iron: MCL = 0.3 mg/L

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

Symbol represents the maximum concentration reported from October 2003 - September 2006

Data Source: CA Department of Health Services

- Barrier Injection Wells
- WRD Boundary
- Forebay

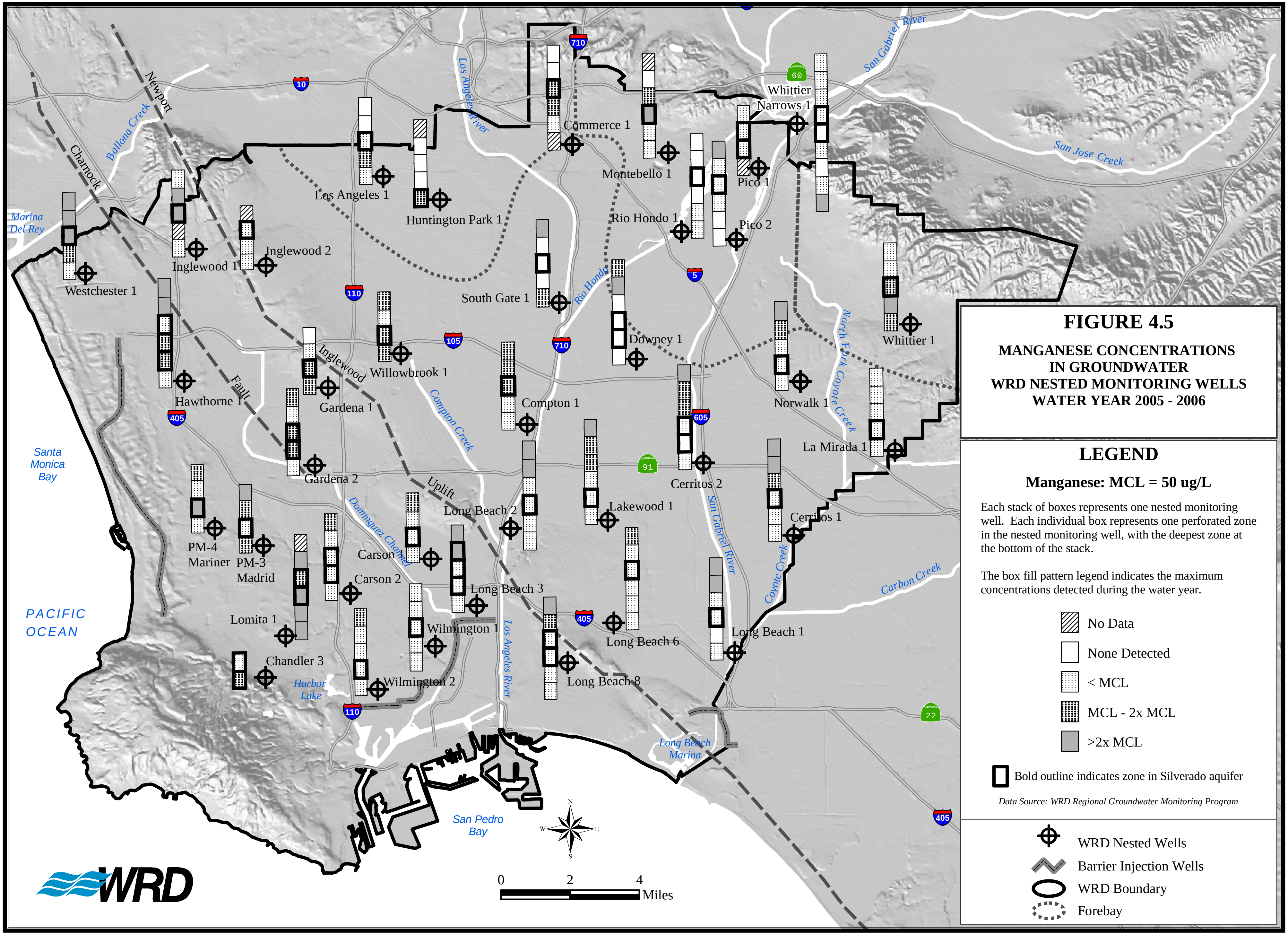


FIGURE 4.5

MANGANESE CONCENTRATIONS IN GROUNDWATER WRD NESTED MONITORING WELLS WATER YEAR 2005 - 2006

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

- WRD Nested Wells
- Barrier Injection Wells
- WRD Boundary
- Forebay

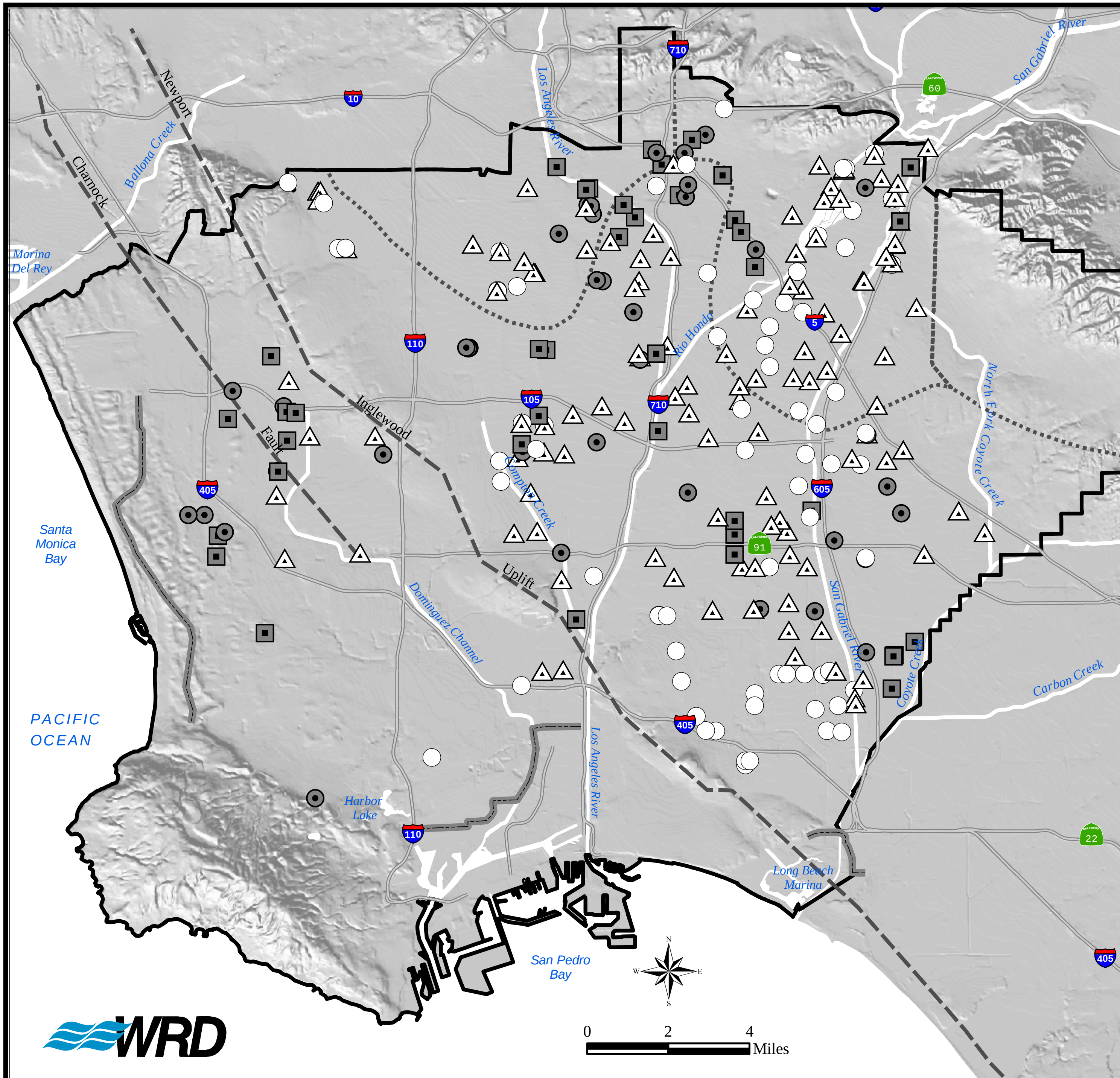


FIGURE 4.6

MANGANESE CONCENTRATIONS IN GROUNDWATER FROM PRODUCTION WELLS

LEGEND

Manganese: MCL = 50 ug/L

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

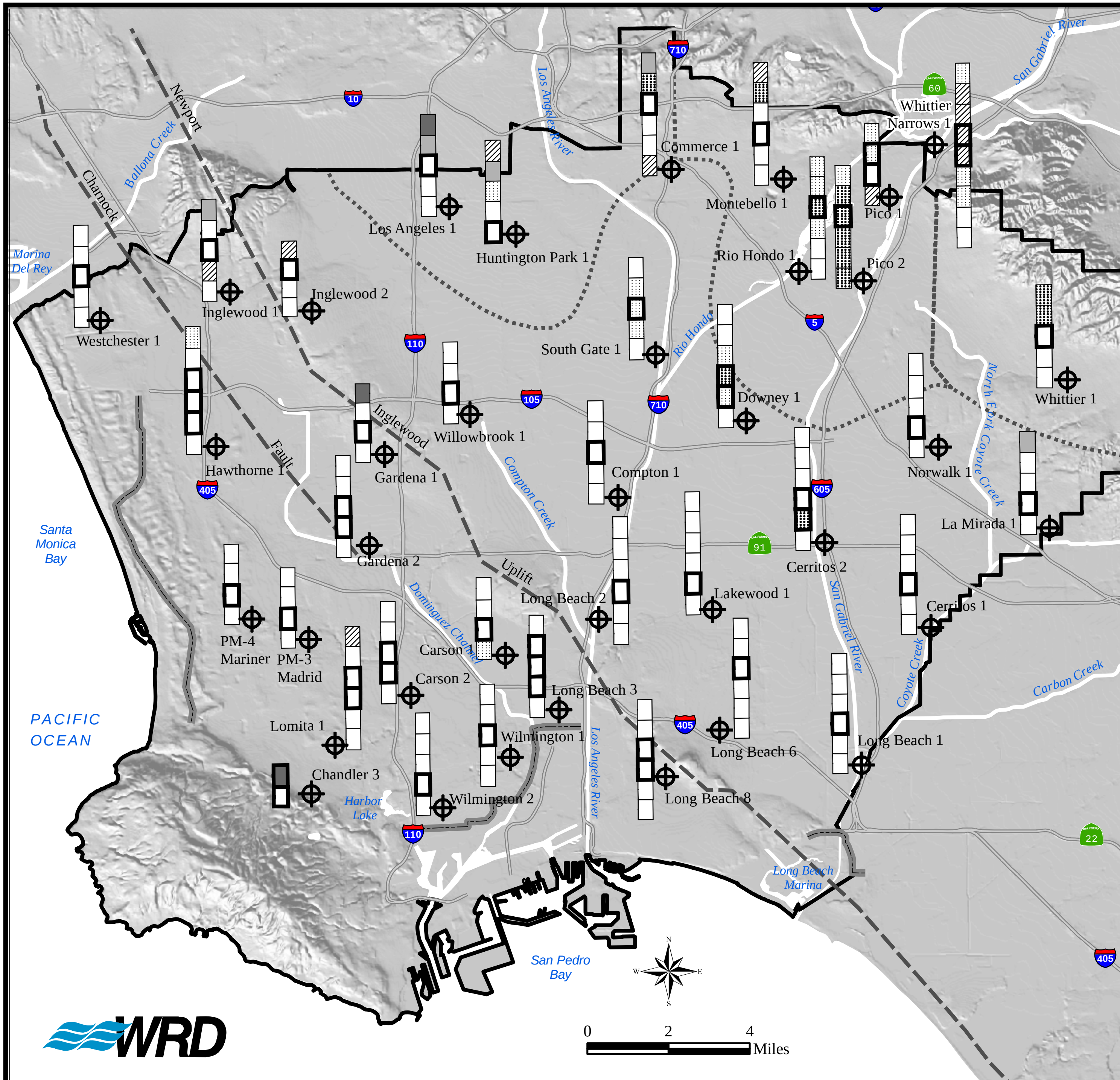
Symbol represents the maximum concentration reported from October 2003 - September 2006

Data Source: CA Department of Health Services

- Barrier Injection Wells
- WRD Boundary
- Forebay

FIGURE 4.7

NITRATE CONCENTRATIONS IN GROUNDWATER WRD NESTED MONITORING WELLS WATER YEAR 2005 - 2006



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
- None Detected
- < 3 mg/L
- 3 - 5 mg/L
- 5 - 10 mg/L
- 10 - 50 mg/L

Bold outline indicates zone in Silverado aquifer

Data Source: WRD Regional Groundwater Monitoring Program

- WRD Nested Wells
- Barrier Injection Wells
- WRD Boundary
- Forebay

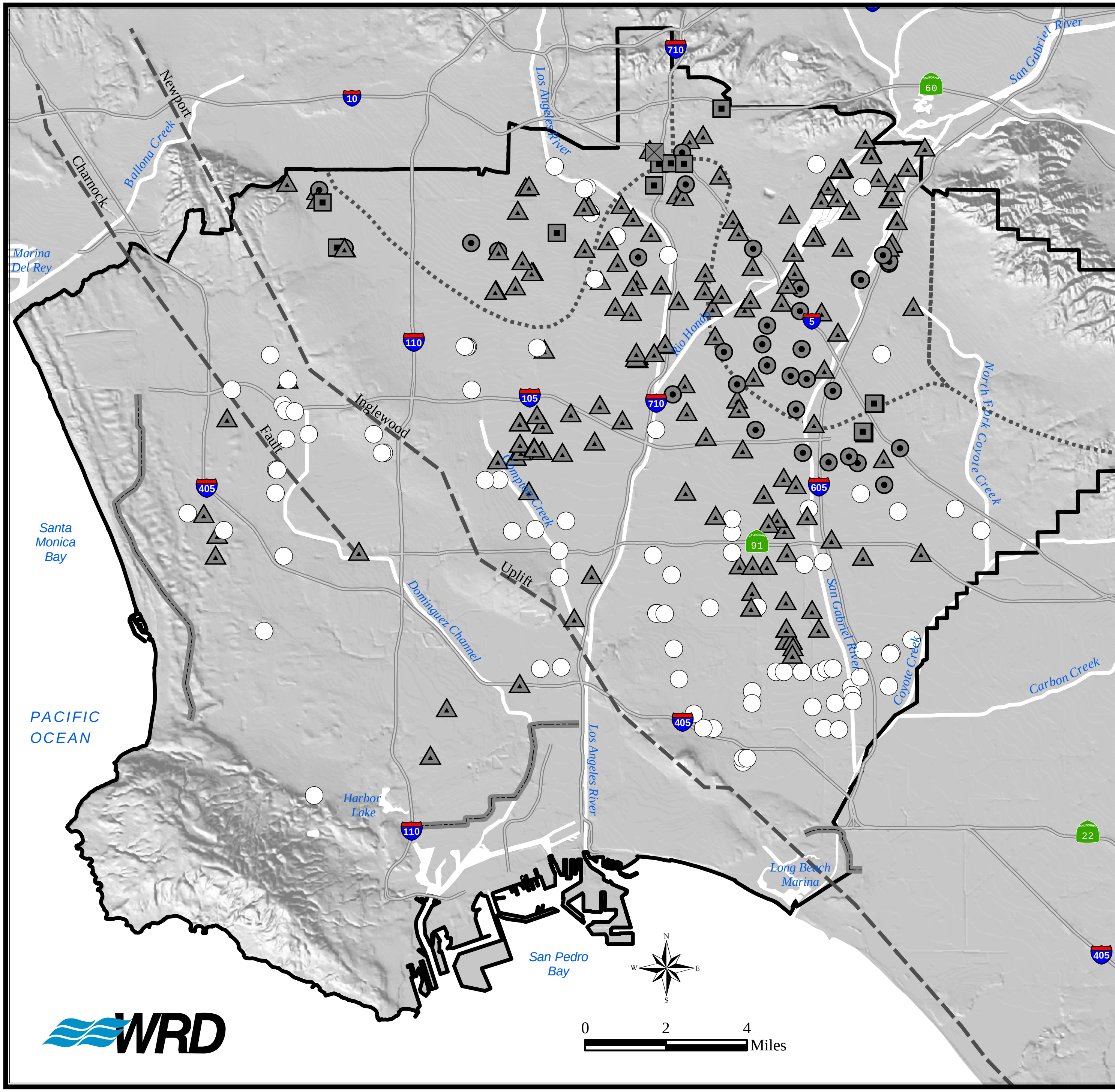


FIGURE 4.8

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 2003 - September 2006

Data Source: CA Department of Health Services

- Barrier Injection Wells
- WRD Boundary
- Forebay

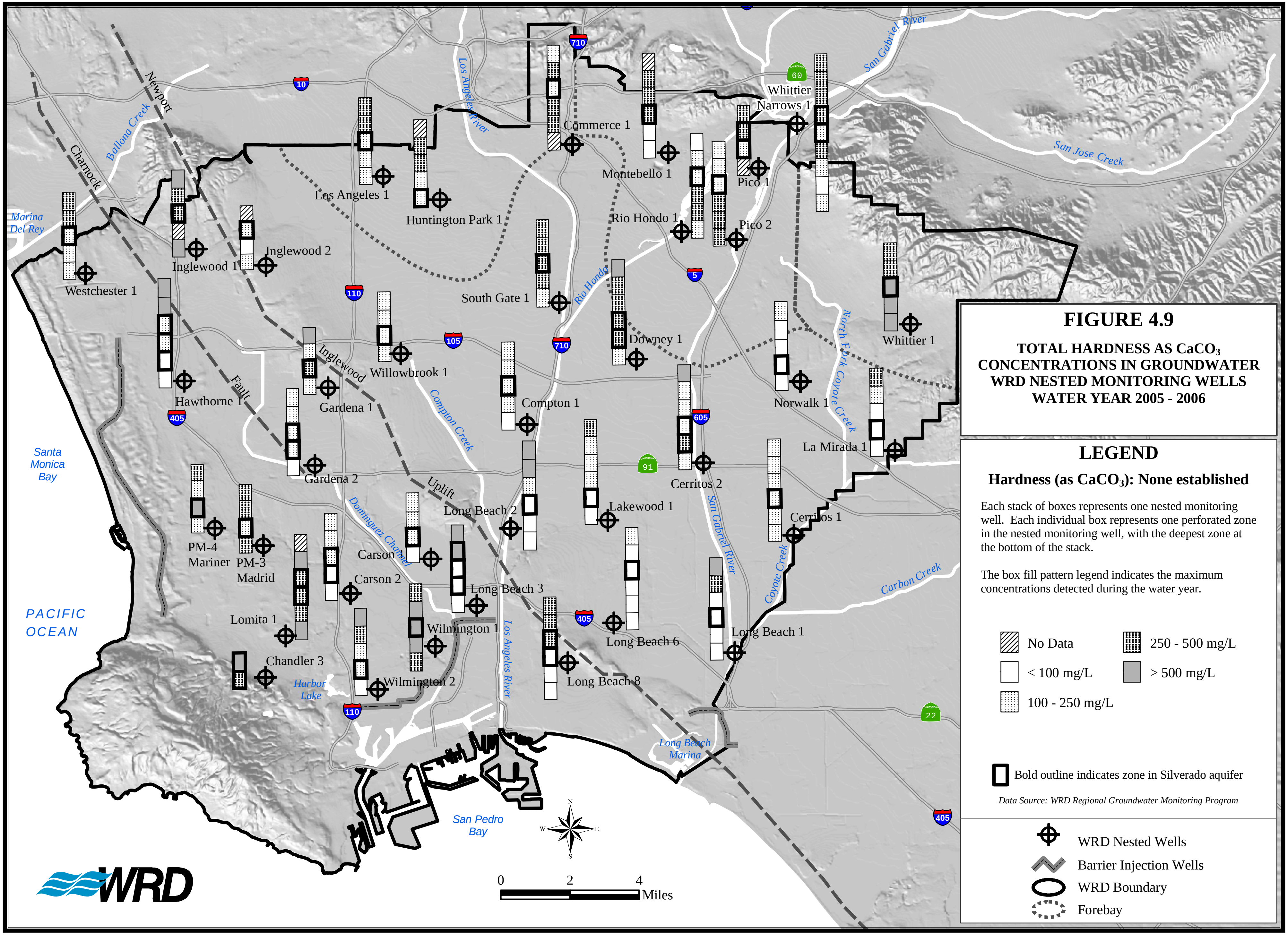


FIGURE 4.9

TOTAL HARDNESS AS $CaCO_3$ CONCENTRATIONS IN GROUNDWATER WRD NESTED MONITORING WELLS WATER YEAR 2005 - 2006

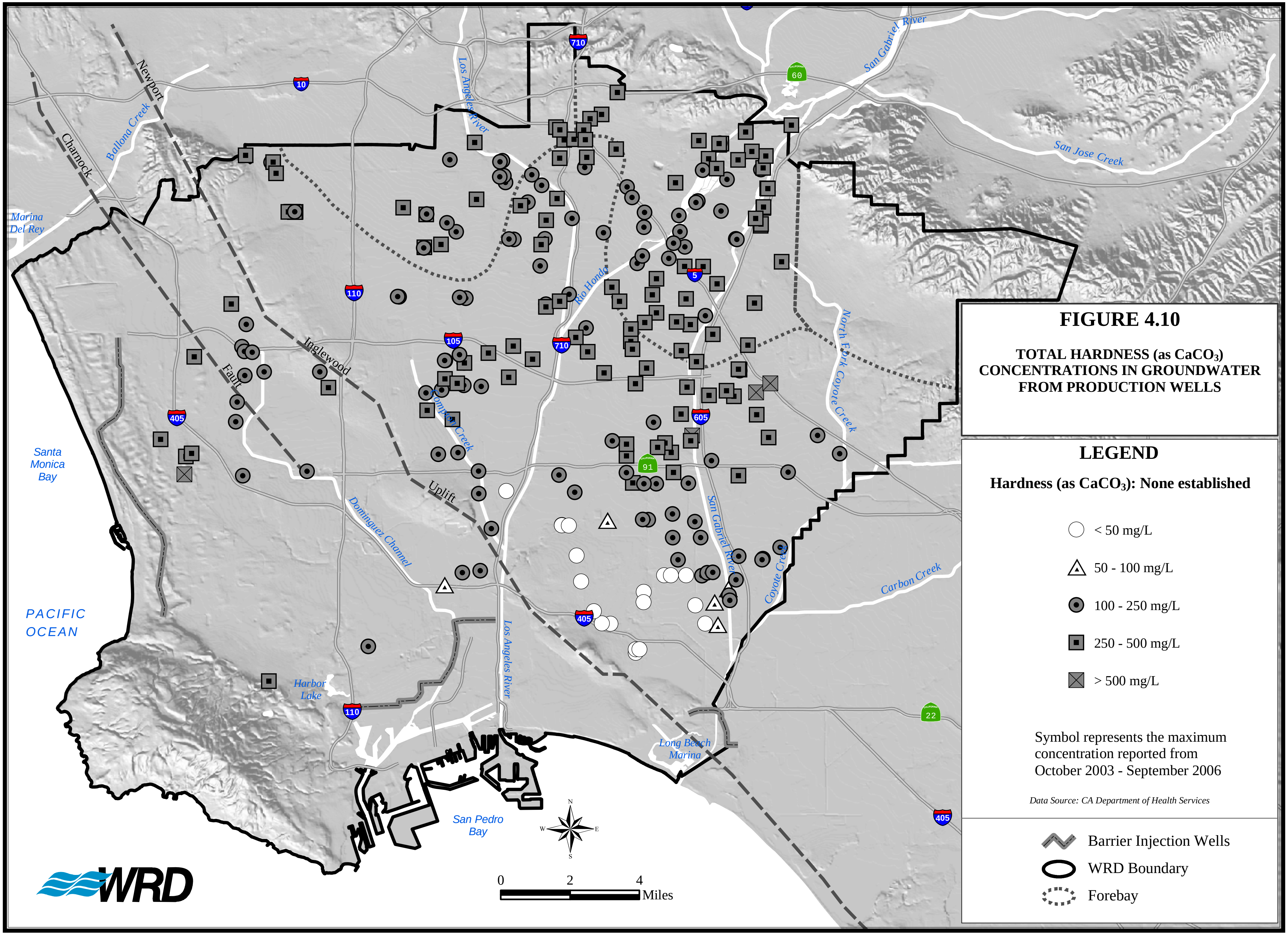


FIGURE 4.10
TOTAL HARDNESS (as $CaCO_3$) CONCENTRATIONS IN GROUNDWATER FROM PRODUCTION WELLS
LEGEND
Hardness (as $CaCO_3$): None established
< 50 mg/L
50 - 100 mg/L
100 - 250 mg/L
250 - 500 mg/L
> 500 mg/L
Symbol represents the maximum concentration reported from October 2003 - September 2006
Data Source: CA Department of Health Services
Barrier Injection Wells
WRD Boundary
Forebay
Santa Monica Bay
PACIFIC OCEAN
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

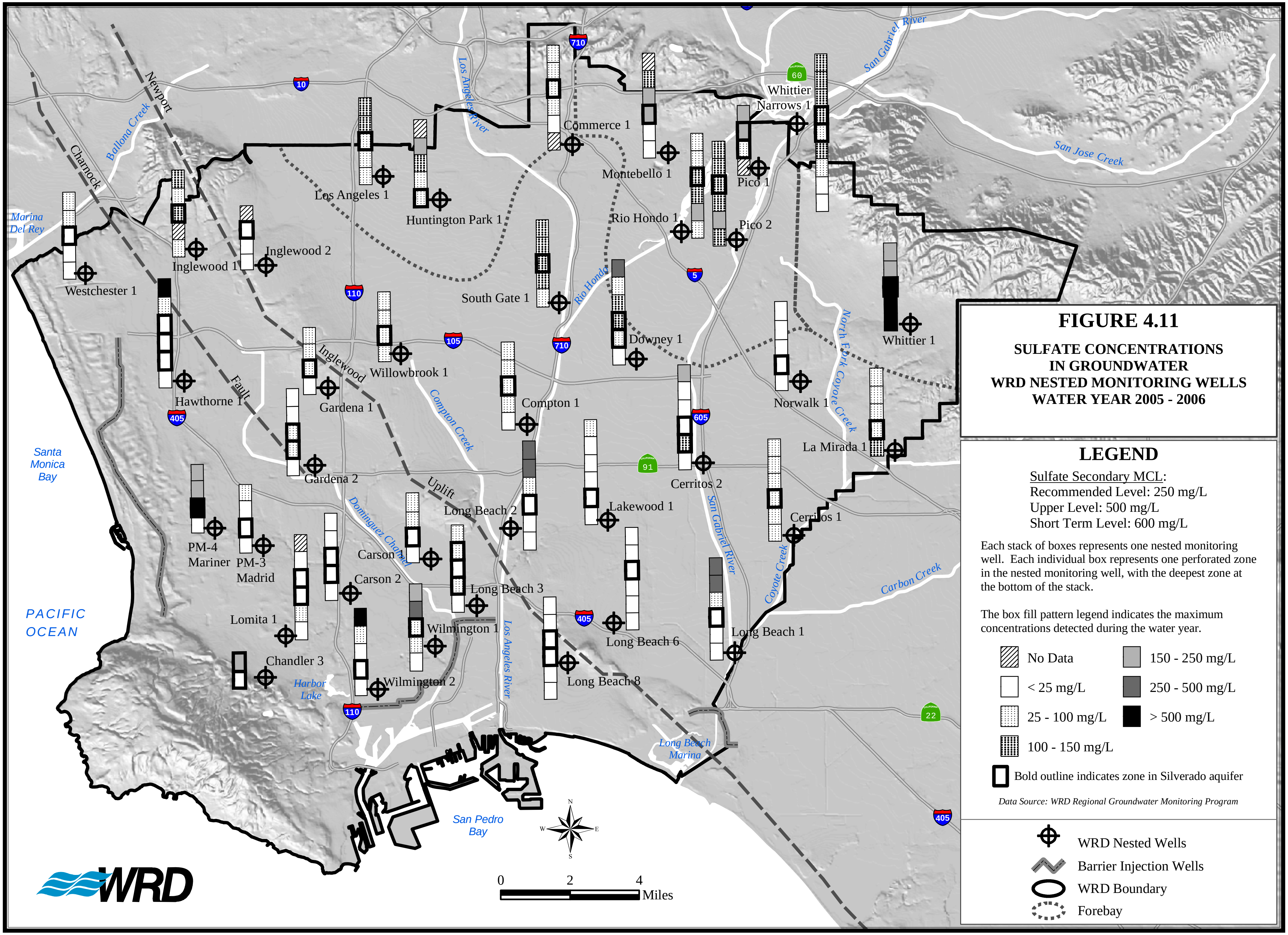


FIGURE 4.11

SULFATE CONCENTRATIONS IN GROUNDWATER WRD NESTED MONITORING WELLS WATER YEAR 2005 - 2006

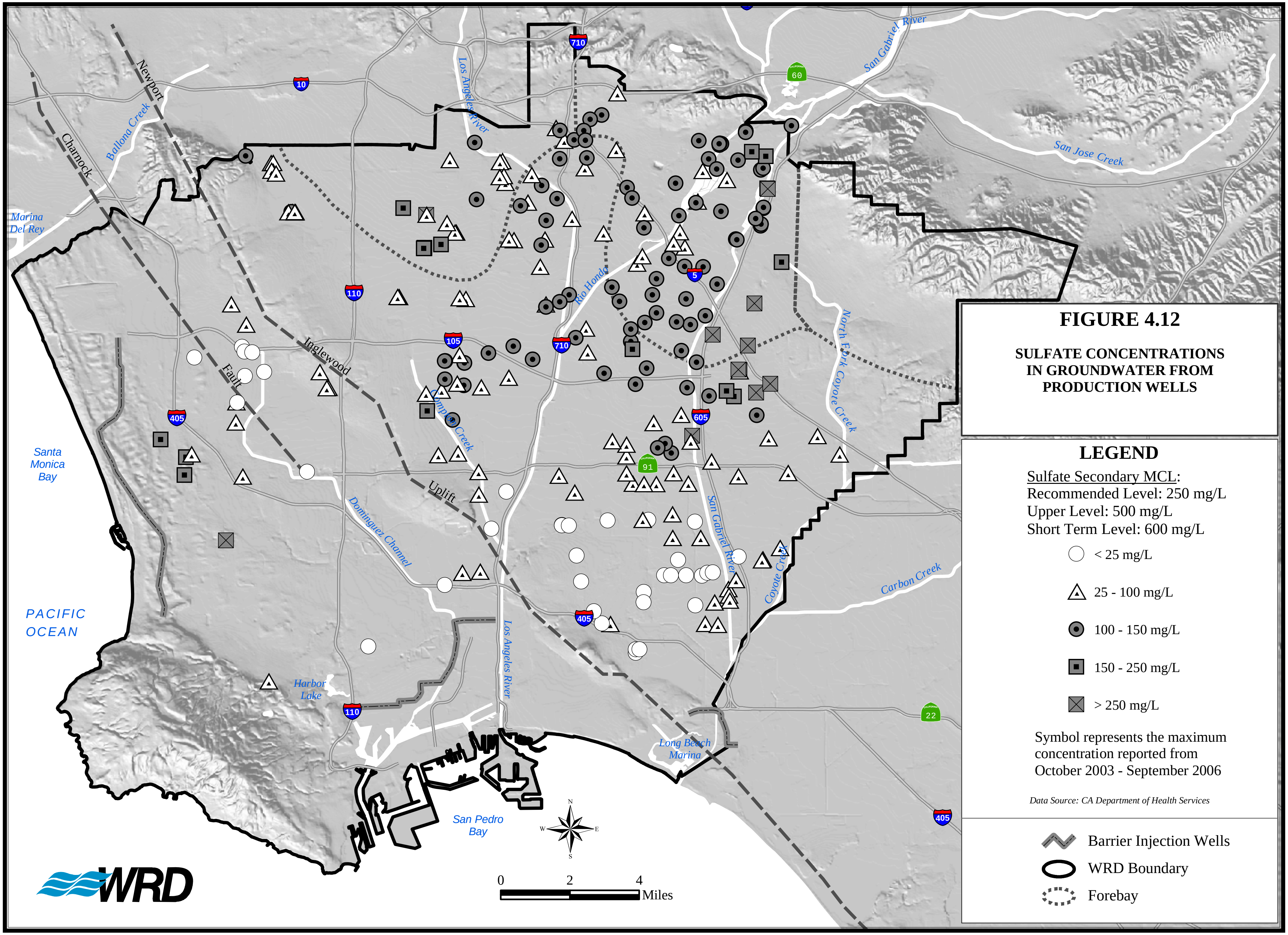


FIGURE 4.12

SULFATE CONCENTRATIONS IN GROUNDWATER FROM PRODUCTION WELLS

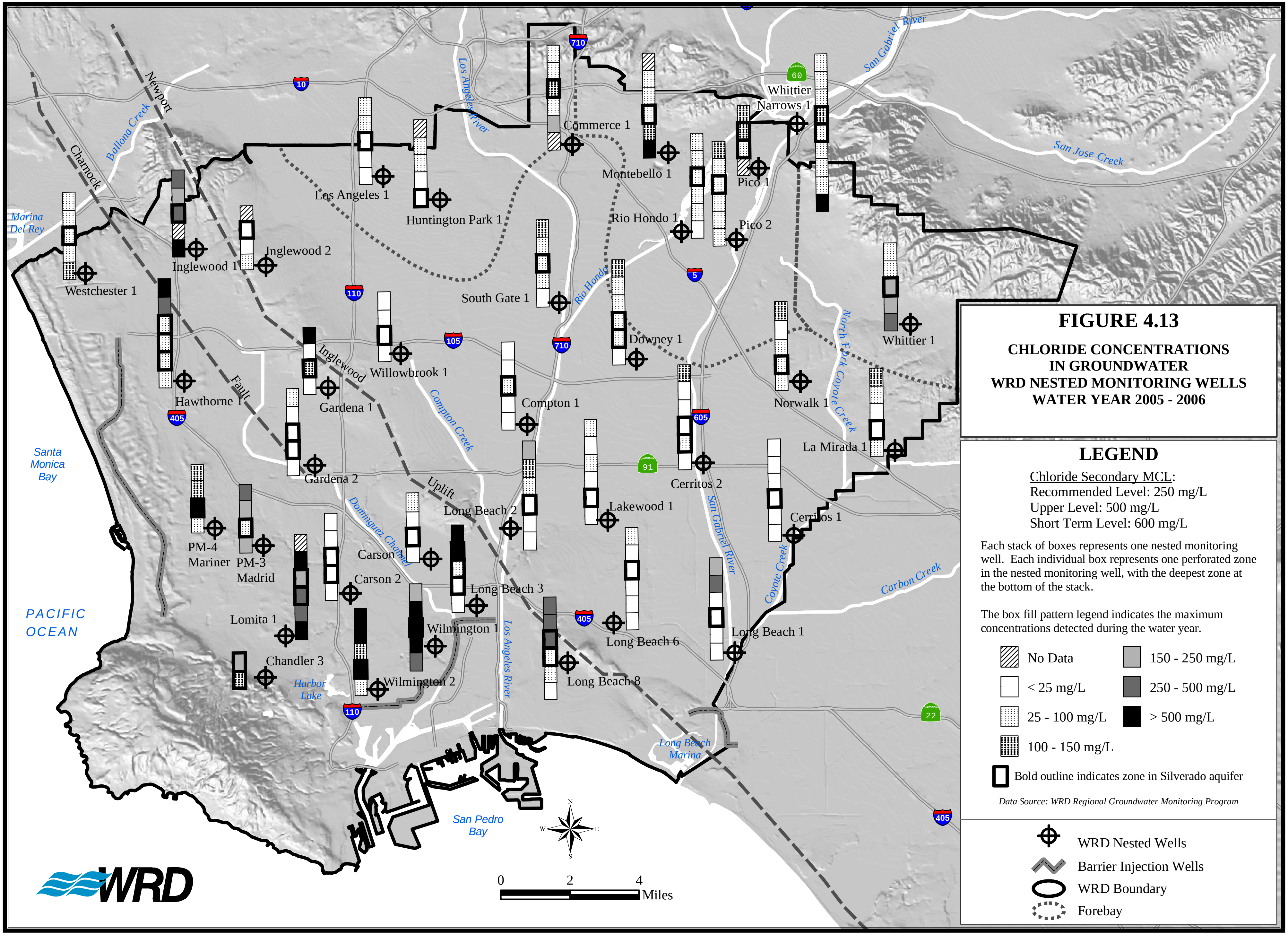


FIGURE 4.13

CHLORIDE CONCENTRATIONS IN GROUNDWATER WRD NESTED MONITORING WELLS WATER YEAR 2005 - 2006

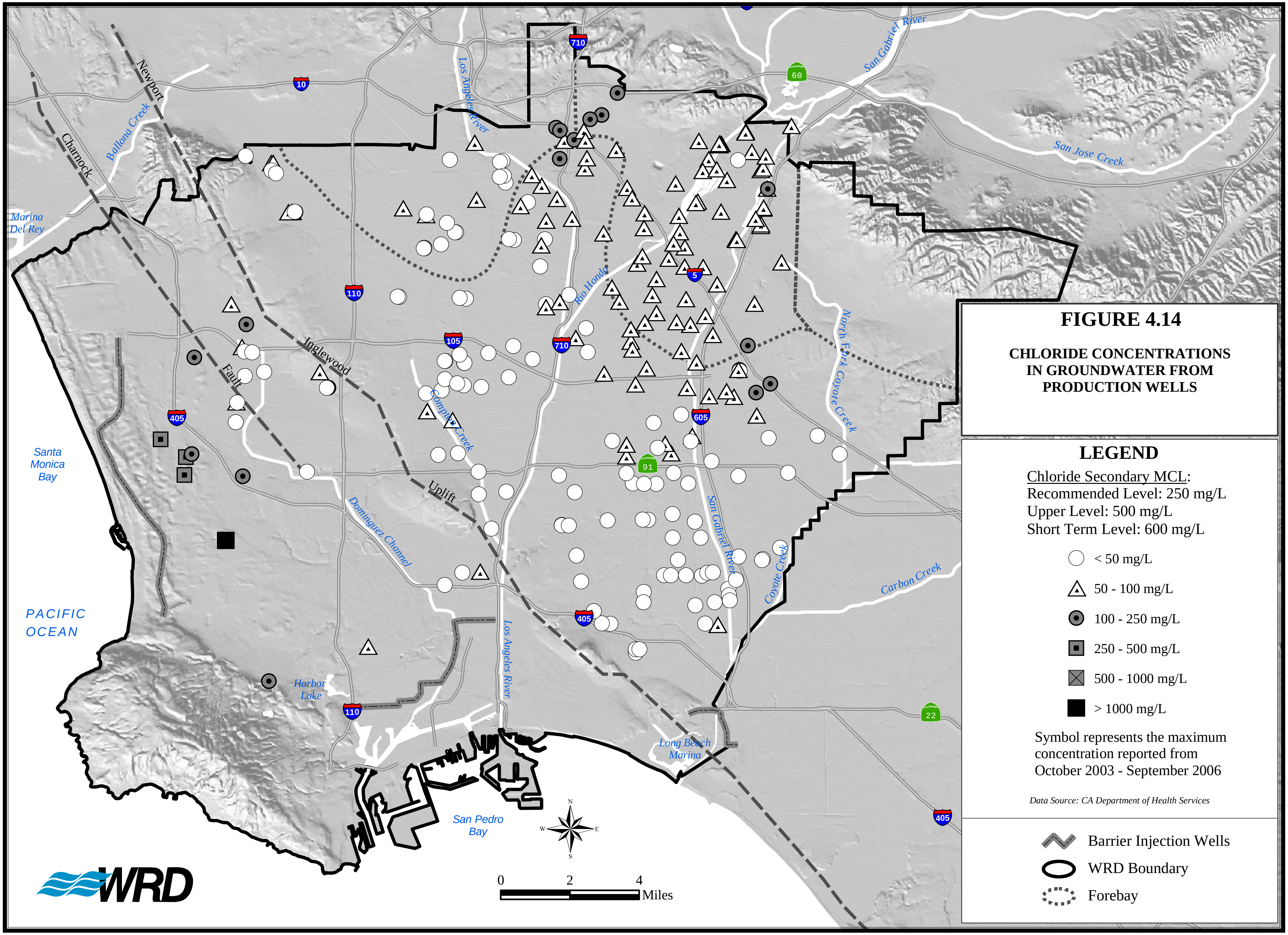


FIGURE 4.14

CHLORIDE CONCENTRATIONS IN GROUNDWATER FROM PRODUCTION WELLS

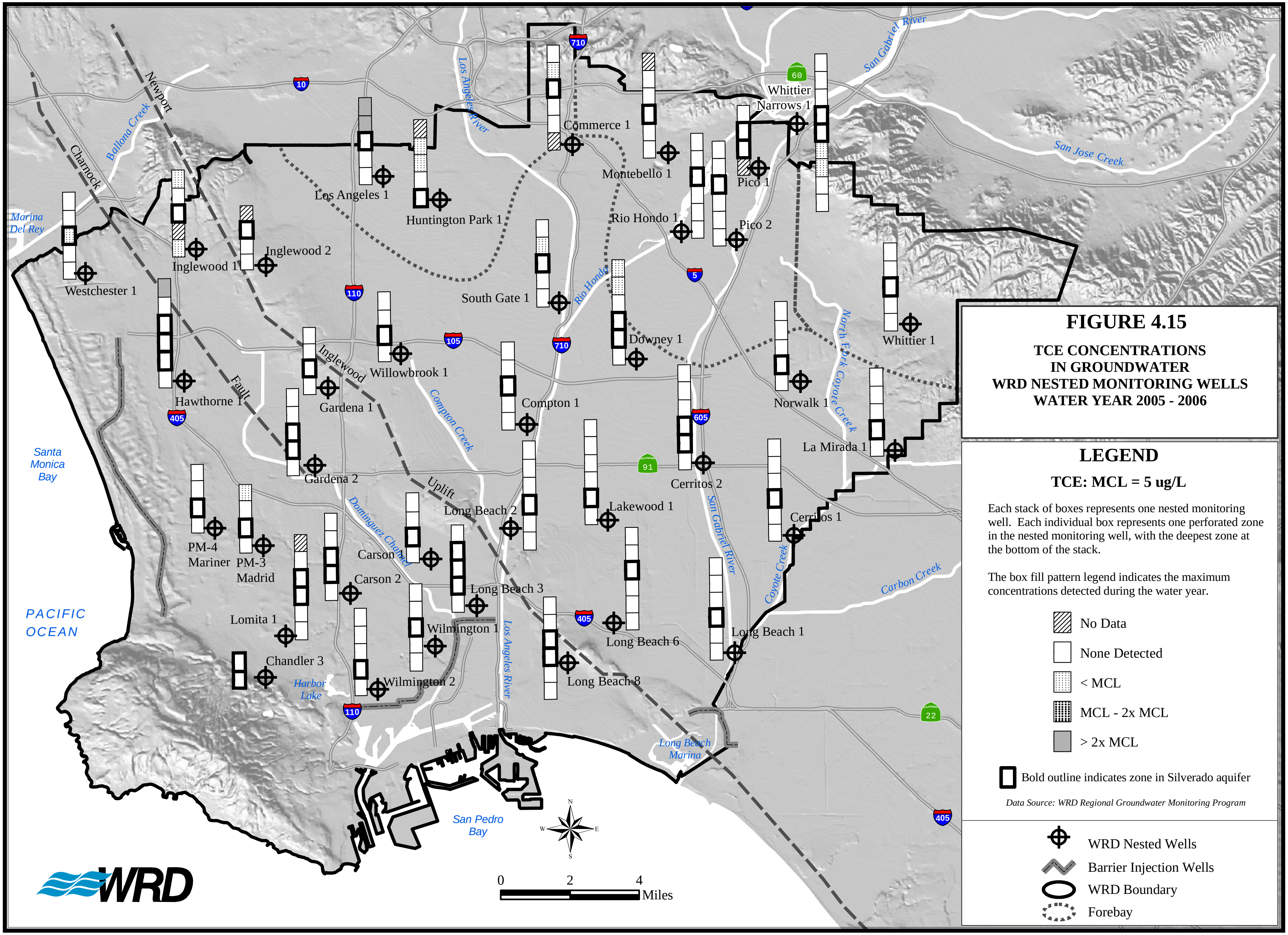


FIGURE 4.15
TCE CONCENTRATIONS
IN GROUNDWATER
WRD NESTED MONITORING WELLS
WATER YEAR 2005 - 2006
LEGEND
TCE: MCL = 5 ug/L
Each stack of boxes represents one nested monitoring well. Each individual box represents one perforated zone in the nested monitoring well, with the deepest zone at the bottom of 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
WRD Nested Wells
Barrier Injection Wells
WRD Boundary
Forebay
Westchester 1
Inglewood 1
Inglewood 2
Los Angeles 1
Huntington Park 1
Commerce 1
Montebello 1
Whittier Narrows 1
Pico 1
Pico 2
Rio Hondo 1
South Gate 1
Downey 1
Whittier 1
Hawthorne 1
Gardena 1
Willowbrook 1
Compton 1
Norwalk 1
La Mirada 1
Gardena 2
Cerritos 2
Cerritos 1
Lakewood 1
Long Beach 2
PM-4 Mariner
PM-3 Madrid
Carson 1
Carson 2
Long Beach 3
Lomita 1
Wilmington 1
Long Beach 6
Long Beach 1
Chandler 3
Wilmington 2
Long Beach 8
Newport
Inglewood
Fault
Charnock
Uplift
Ballona Creek
Marina Del Rey
Santa Monica Bay
PACIFIC OCEAN
Los Angeles River
Rio Hondo
San Gabriel River
San Jose Creek
North Fork Coyote Creek
Compton Creek
Dominguez Channel
Coyote Creek
Carbon Creek
Harbor Lake
San Pedro Bay
Long Beach Marina
10
110
105
710
405
605
5
60
91
22
N
S
E
W
0
2
4
Miles
WRD

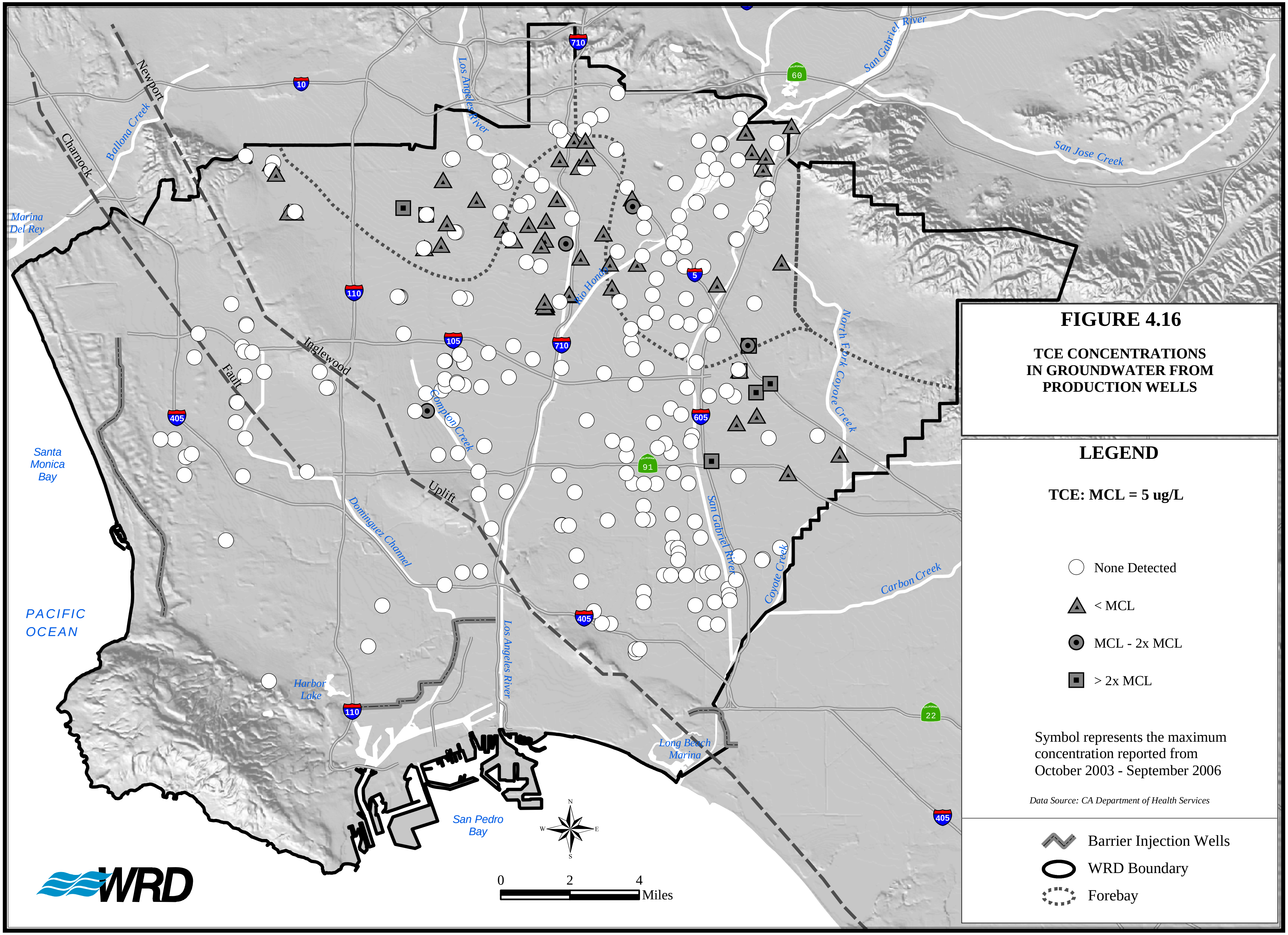


FIGURE 4.16
TCE CONCENTRATIONS
IN GROUNDWATER FROM
PRODUCTION WELLS
LEGEND
TCE: MCL = 5 ug/L
None Detected
< MCL
MCL - 2x MCL
> 2x MCL
Symbol represents the maximum
concentration reported from
October 2003 - September 2006
Data Source: CA Department of Health Services
Barrier Injection Wells
WRD Boundary
Forebay
PACIFIC
OCEAN
Santa
Monica
Bay
Marina
Del Rey
Ballona Creek
Newport
Charnock
Inglewood
Fault
Uplift
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
San Pedro
Bay
Long Beach
Marina
10
110
105
710
405
605
5
60
91
22
N
E
S
W
0
2
4
Miles
WRD

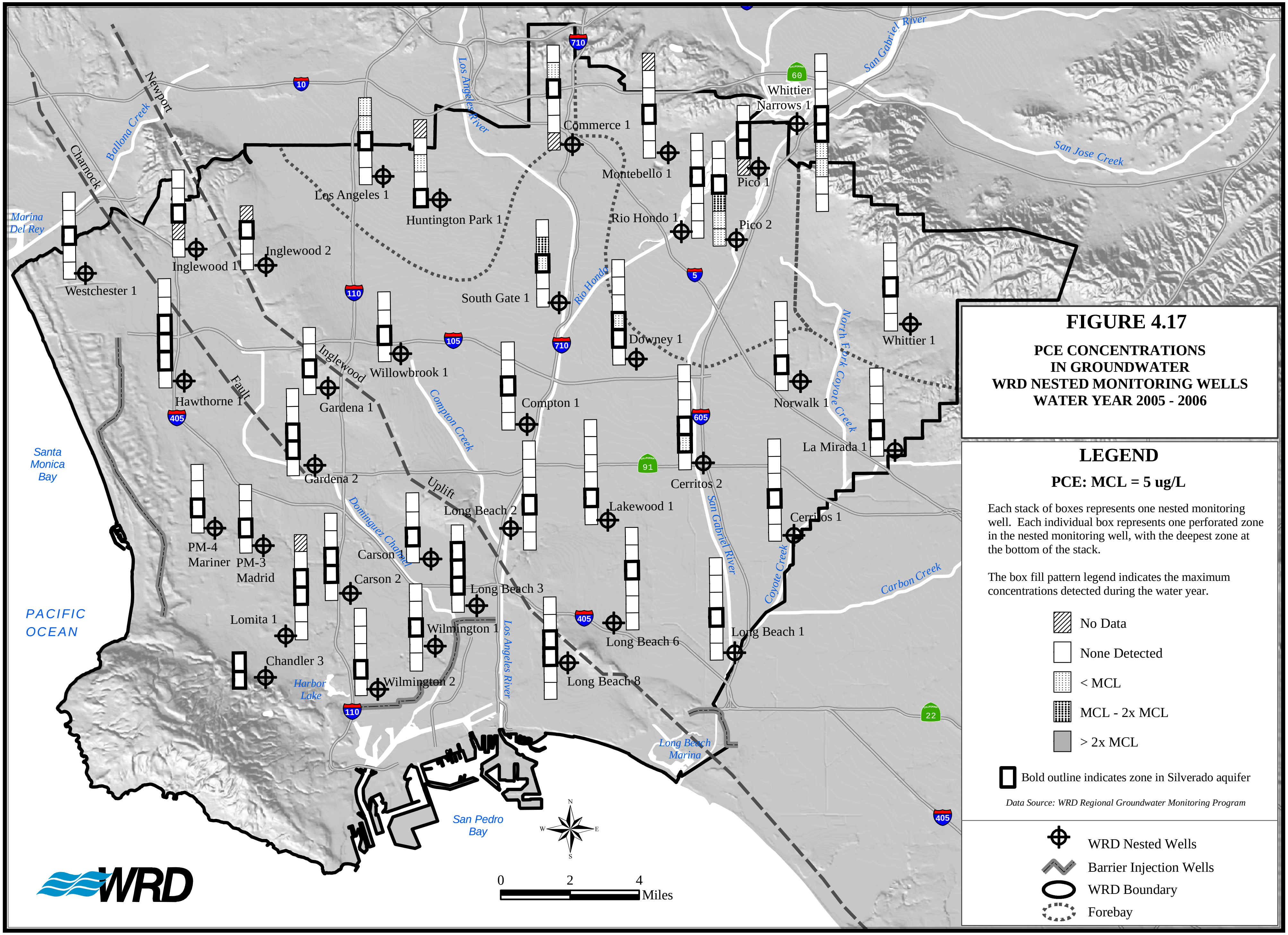


FIGURE 4.17

PCE CONCENTRATIONS IN GROUNDWATER WRD NESTED MONITORING WELLS WATER YEAR 2005 - 2006

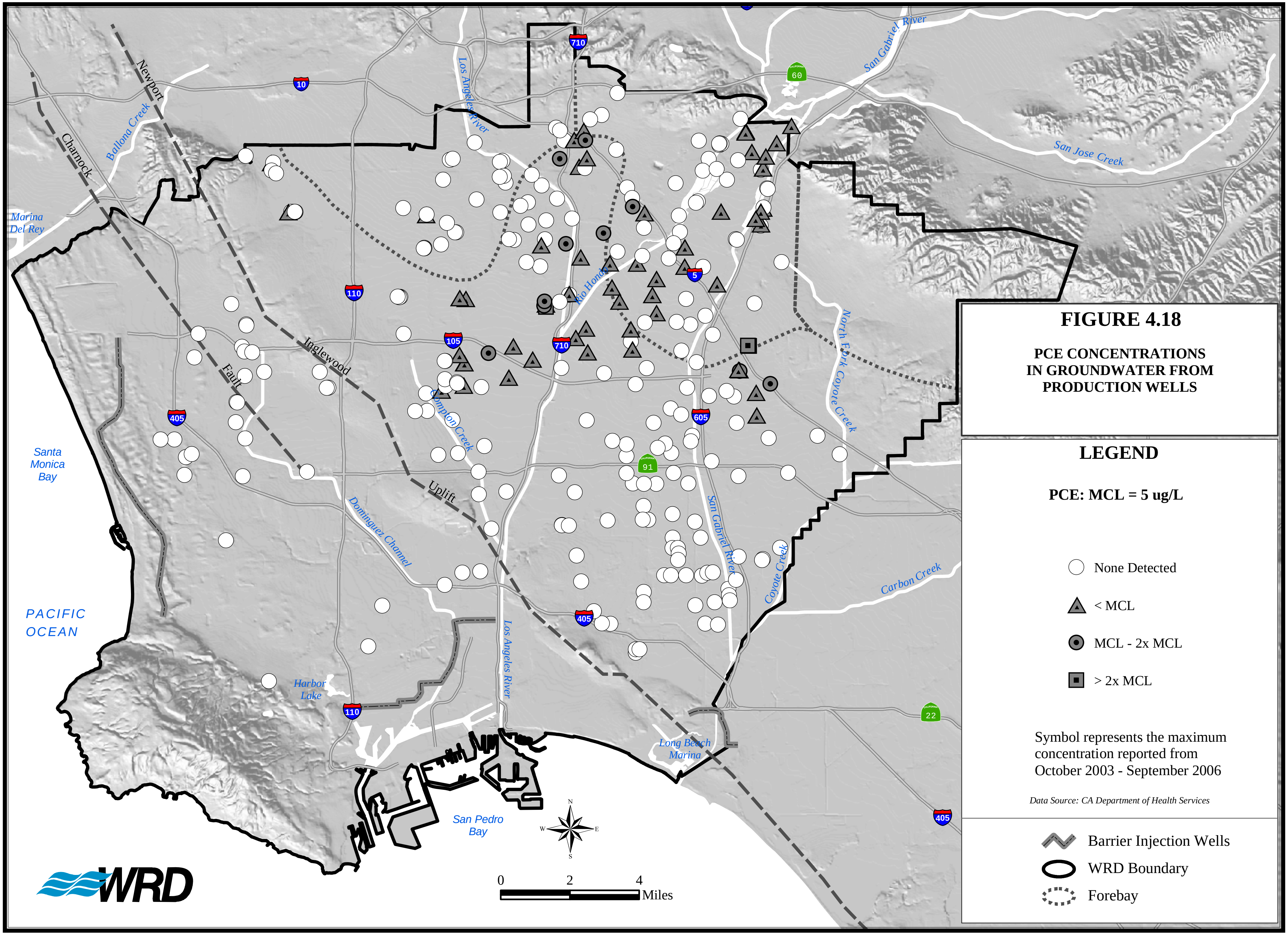


FIGURE 4.18
PCE CONCENTRATIONS IN GROUNDWATER FROM PRODUCTION WELLS
LEGEND
PCE: MCL = 5 ug/L
None Detected
< MCL
MCL - 2x MCL
> 2x MCL
Symbol represents the maximum concentration reported from October 2003 - September 2006
Data Source: CA Department of Health Services
Barrier Injection Wells
WRD Boundary
Forebay
0
2
4
Miles
N
S
E
W
WRD
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
San Gabriel River
San Jose Creek
Rio Hondo
Compton Creek
Dominguez Channel
North Fork Coyote Creek
Coyote Creek
Carbon Creek
10
60
710
110
105
5
605
405
91
22

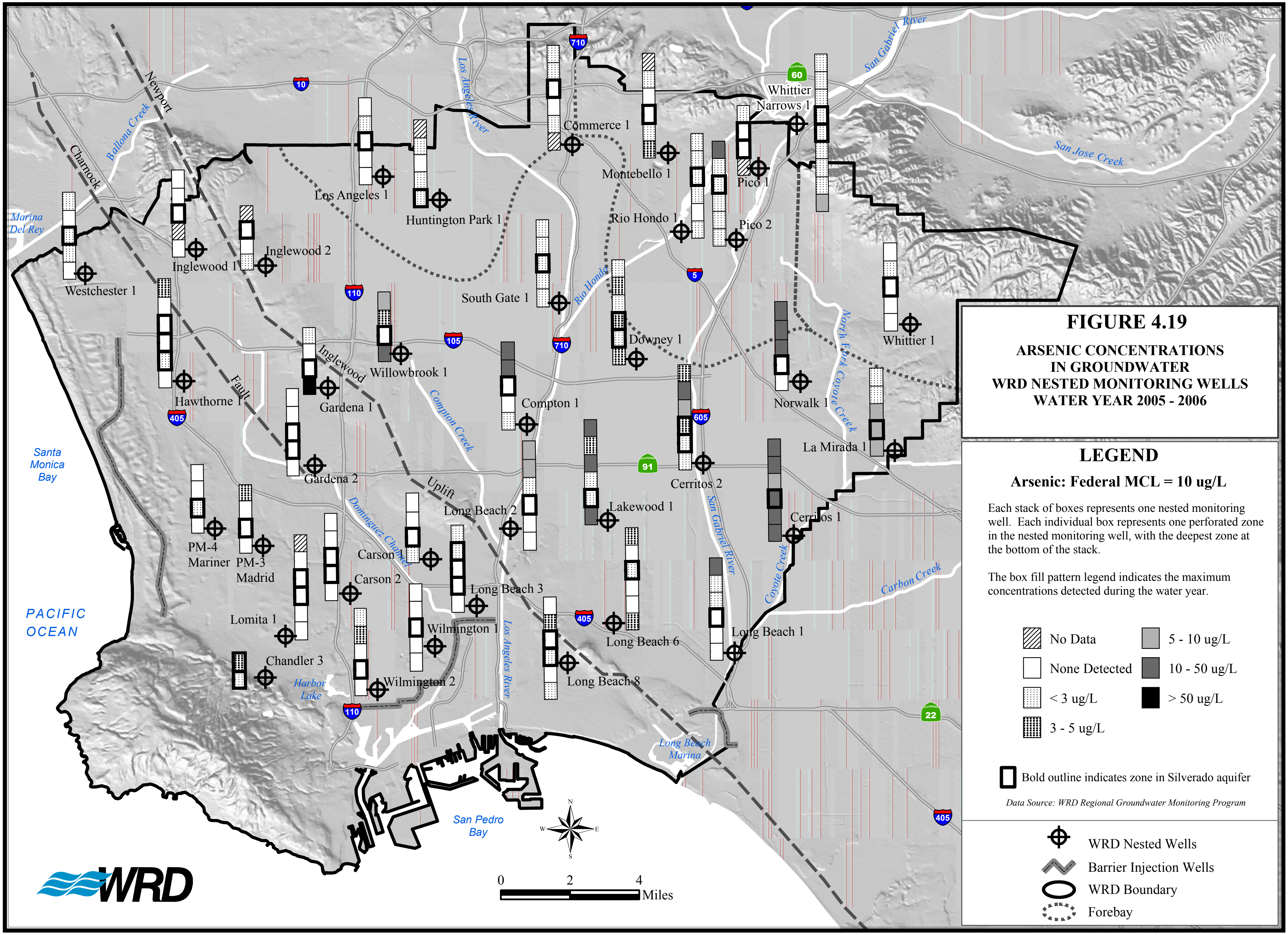


FIGURE 4.19

ARSENIC CONCENTRATIONS IN GROUNDWATER WRD NESTED MONITORING WELLS WATER YEAR 2005 - 2006

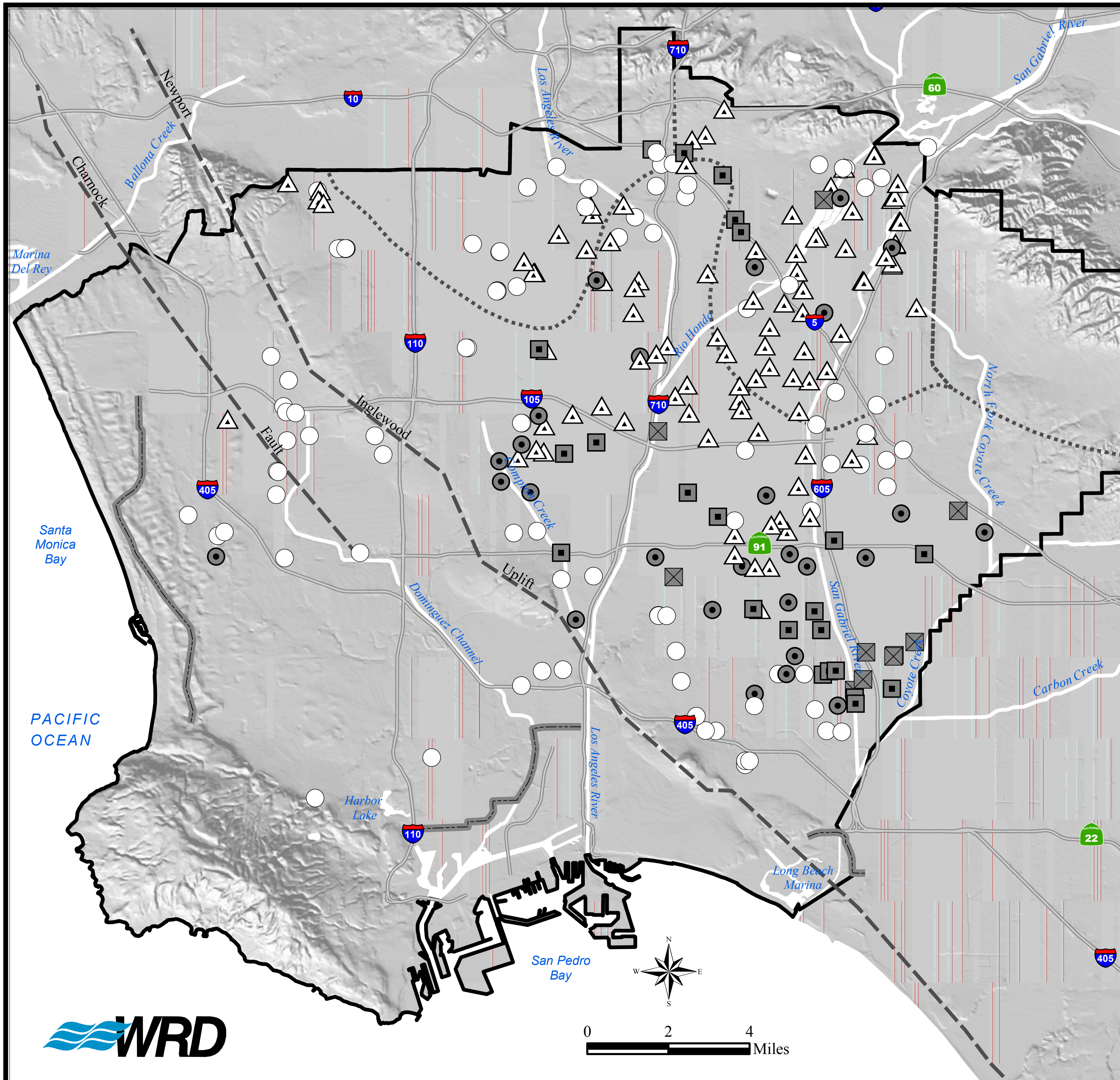


FIGURE 4.20

ARSENIC CONCENTRATIONS IN GROUNDWATER FROM PRODUCTION WELLS

LEGEND

Arsenic: Federal MCL = 10 ug/L

- None Detected
- < 3 ug/L
- 3 - 5 ug/L
- 5 - 10 ug/L
- > 10 ug/L

Symbol represents the maximum concentration reported from October 2003 - September 2006

Data Source: CA Department of Health Services

- Barrier Injection Wells
- WRD Boundary
- Forebay

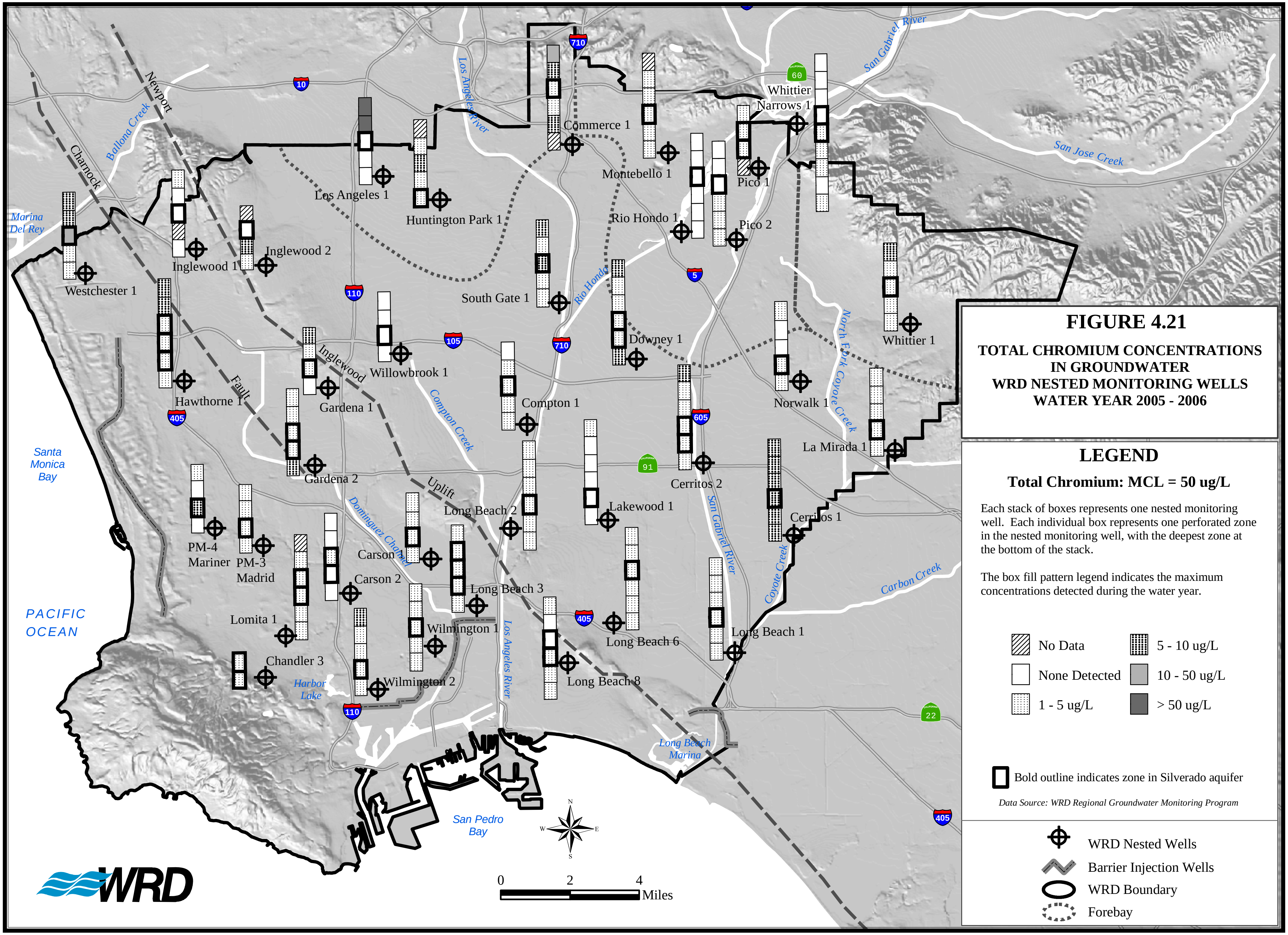
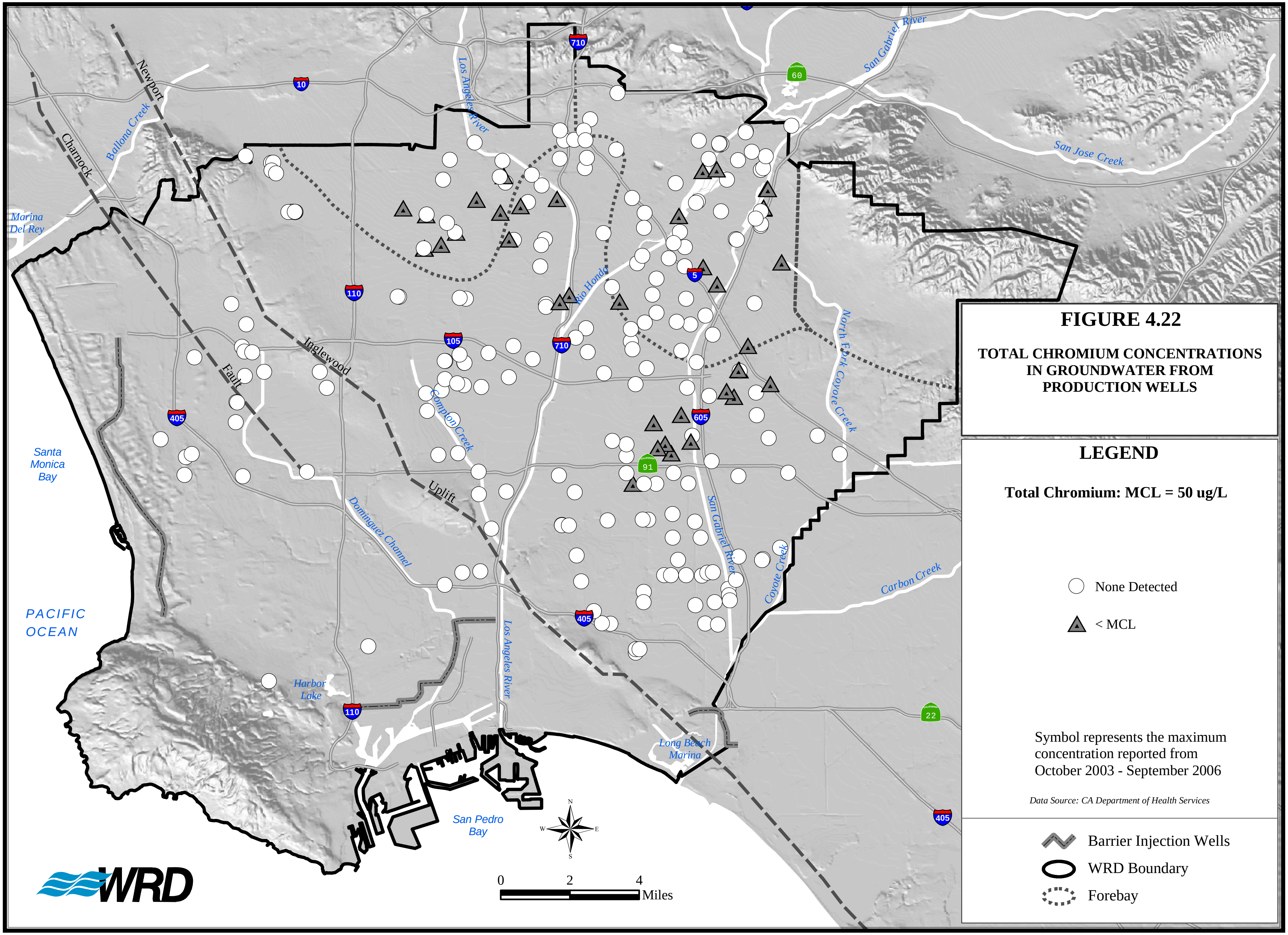


FIGURE 4.21

TOTAL CHROMIUM CONCENTRATIONS IN GROUNDWATER WRD NESTED MONITORING WELLS WATER YEAR 2005 - 2006

FIGURE 4.22

TOTAL CHROMIUM CONCENTRATIONS IN GROUNDWATER FROM PRODUCTION WELLS



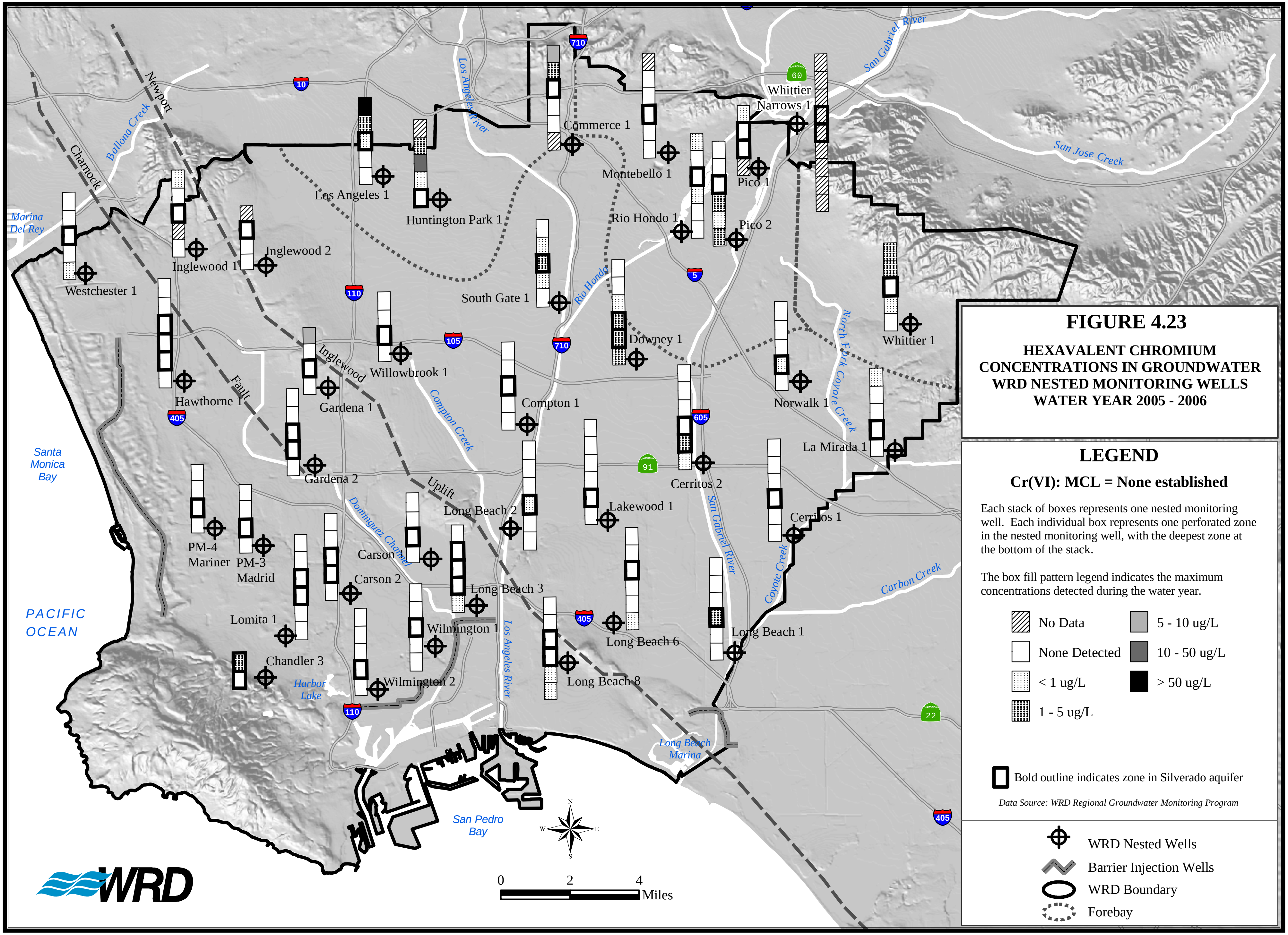


FIGURE 4.23
HEXAVALENT CHROMIUM CONCENTRATIONS IN GROUNDWATER WRD NESTED MONITORING WELLS WATER YEAR 2005 - 2006
LEGEND
Cr(VI): MCL = None established
Each stack of boxes represents one nested monitoring well. Each individual box represents one perforated zone in the nested monitoring well, with the 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 ug/L
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
WRD Nested Wells
Barrier Injection Wells
WRD Boundary
Forebay
Westchester 1
Inglewood 1
Inglewood 2
Los Angeles 1
Huntington Park 1
Commerce 1
Montebello 1
Rio Hondo 1
Whittier Narrows 1
Pico 1
Pico 2
Whittier 1
South Gate 1
Downey 1
Willowbrook 1
Hawthorne 1
Gardena 1
Gardena 2
Compton 1
Norwalk 1
La Mirada 1
Cerritos 2
Cerritos 1
Lakewood 1
Long Beach 2
Long Beach 3
Long Beach 6
Long Beach 8
Long Beach 1
PM-4 Mariner
PM-3 Madrid
Carson 1
Carson 2
Lomita 1
Chandler 3
Wilmington 1
Wilmington 2
Newport
Inglewood
Fault
Charnock
Uplift
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
Marina Del Rey
Santa Monica Bay
PACIFIC OCEAN
Harbor Lake
San Pedro Bay
Long Beach Marina
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405
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22
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Miles
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S
E
W
WRD

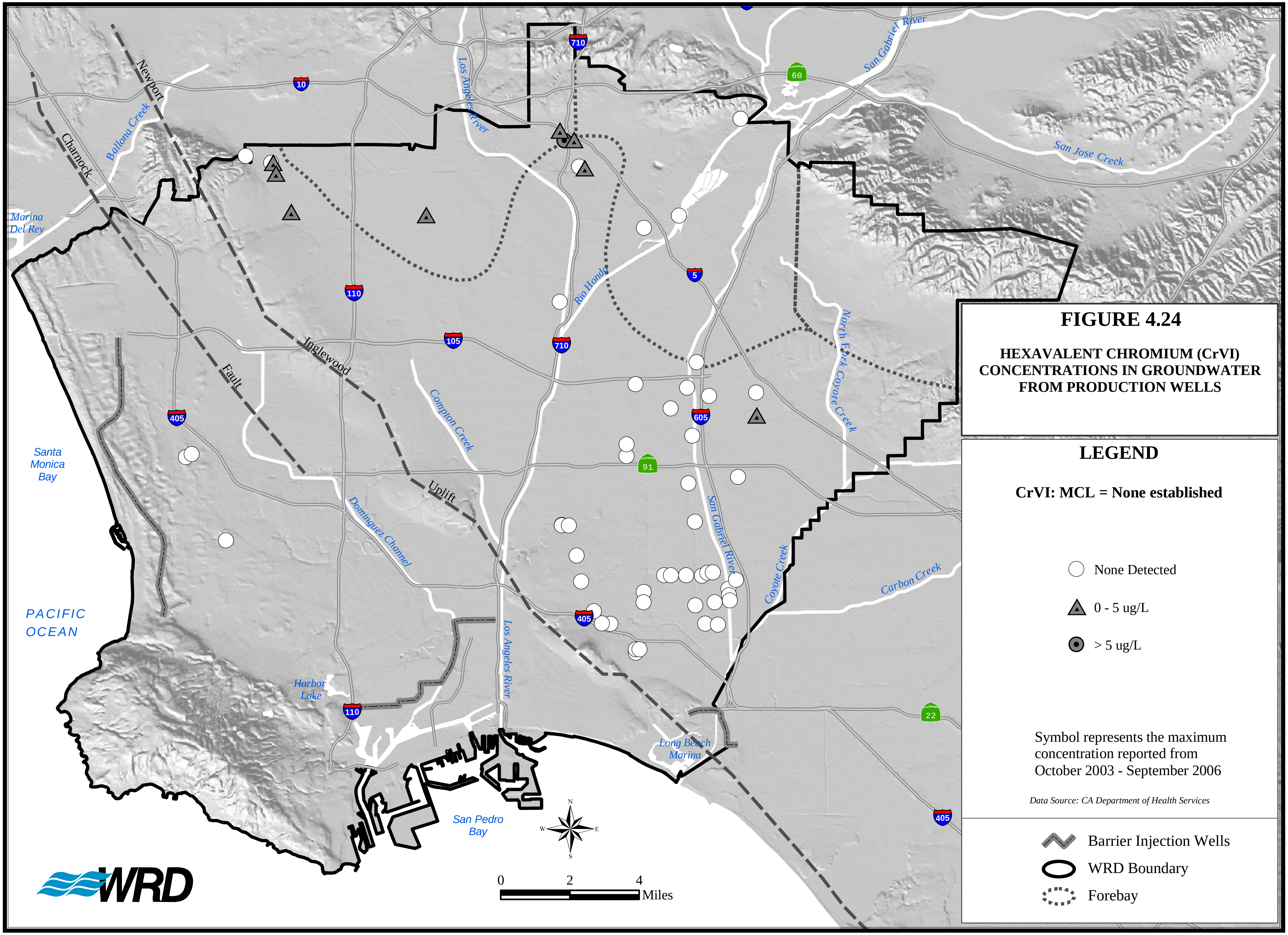

FIGURE 4.24

HEXAVALENT CHROMIUM (CrVI) CONCENTRATIONS IN GROUNDWATER FROM PRODUCTION WELLS

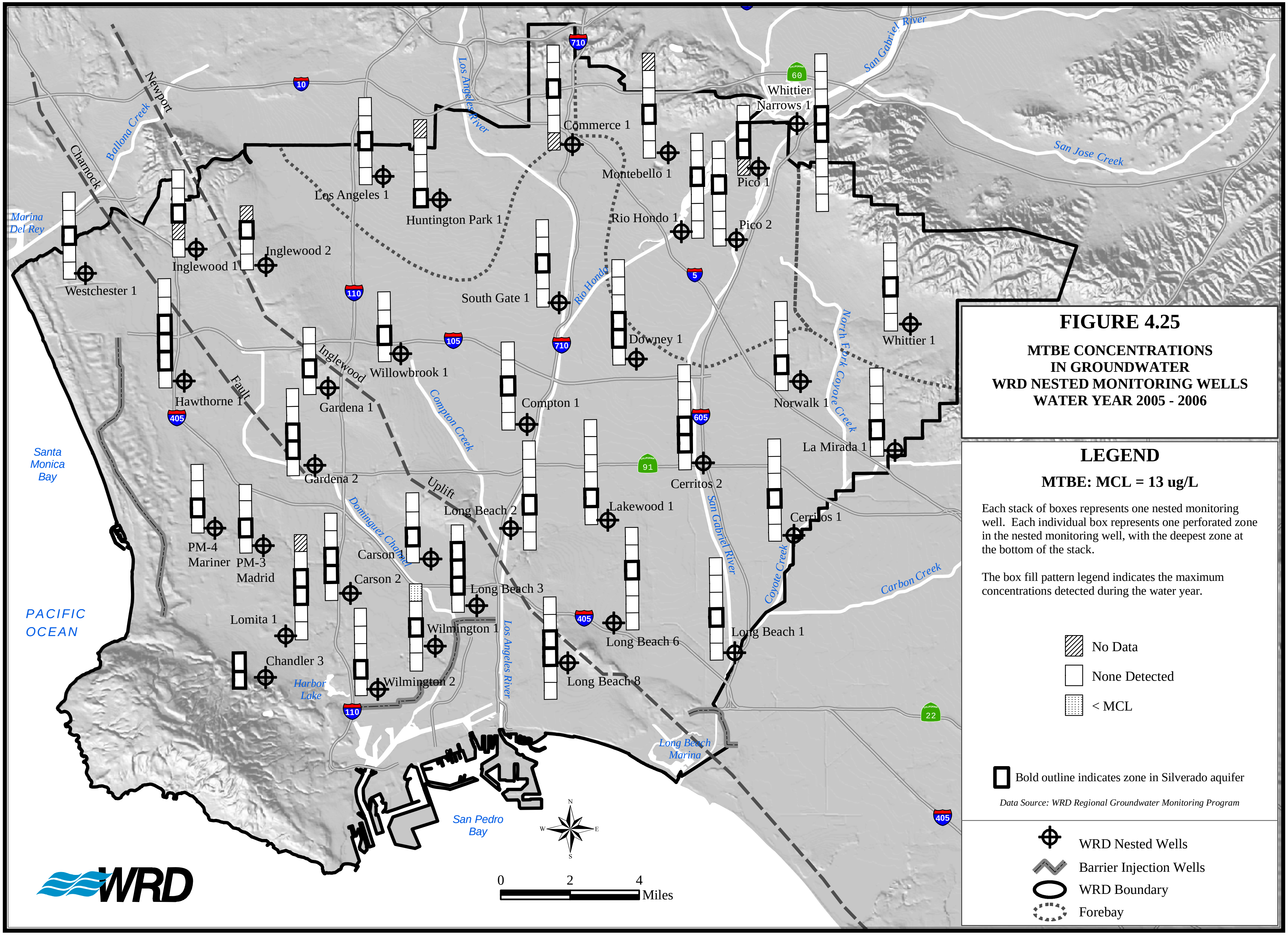

FIGURE 4.25
MTBE CONCENTRATIONS
IN GROUNDWATER
WRD NESTED MONITORING WELLS
WATER YEAR 2005 - 2006
LEGEND
MTBE: MCL = 13 ug/L
Each stack of boxes represents one nested monitoring well. Each individual box represents one perforated zone in the nested monitoring well, with the deepest zone at the bottom 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
WRD Nested Wells
Barrier Injection Wells
WRD Boundary
Forebay
Westchester 1
Inglewood 1
Inglewood 2
Los Angeles 1
Huntington Park 1
Commerce 1
Montebello 1
Whittier Narrows 1
Pico 1
Pico 2
Rio Hondo 1
South Gate 1
Downey 1
Whittier 1
Hawthorne 1
Gardena 1
Willowbrook 1
Compton 1
Norwalk 1
La Mirada 1
Cerritos 2
Cerritos 1
Gardena 2
Lakewood 1
Long Beach 2
PM-4 Mariner
PM-3 Madrid
Carson 1
Carson 2
Long Beach 3
Lomita 1
Wilmington 1
Long Beach 6
Long Beach 1
Chandler 3
Wilmington 2
Long Beach 8
Newport
Inglewood
Fault
Charnock
Uplift
Ballona Creek
Marina Del Rey
Santa Monica Bay
PACIFIC OCEAN
Los Angeles River
Rio Hondo
Compton Creek
Dominguez Channel
San Gabriel River
San Jose Creek
North Fork Coyote Creek
Coyote Creek
Carbon Creek
Harbor Lake
San Pedro Bay
Long Beach Marina
0 2 4 Miles
WRD

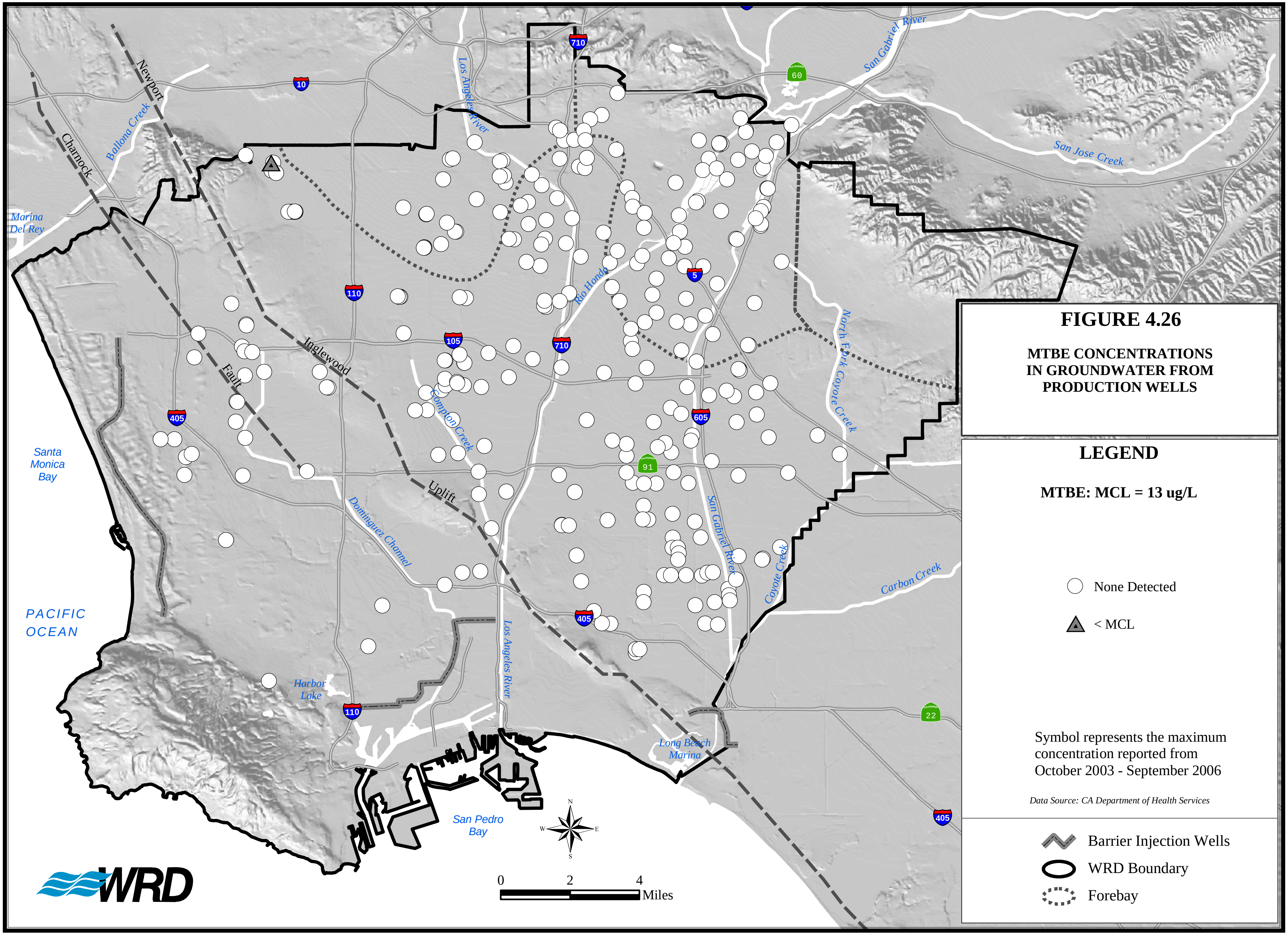

FIGURE 4.26
MTBE CONCENTRATIONS
IN GROUNDWATER FROM
PRODUCTION WELLS
LEGEND
MTBE: MCL = 13 ug/L
None Detected
< MCL
Symbol represents the maximum
concentration reported from
October 2003 - September 2006
Data Source: CA Department of Health Services
Barrier Injection Wells
WRD Boundary
Forebay
PACIFIC
OCEAN
Santa
Monica
Bay
Marina
Del Rey
San Pedro
Bay
Long Beach
Marina
Harbor
Lake
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
10
60
710
110
105
5
605
91
405
22
0
2
4
Miles
WRD

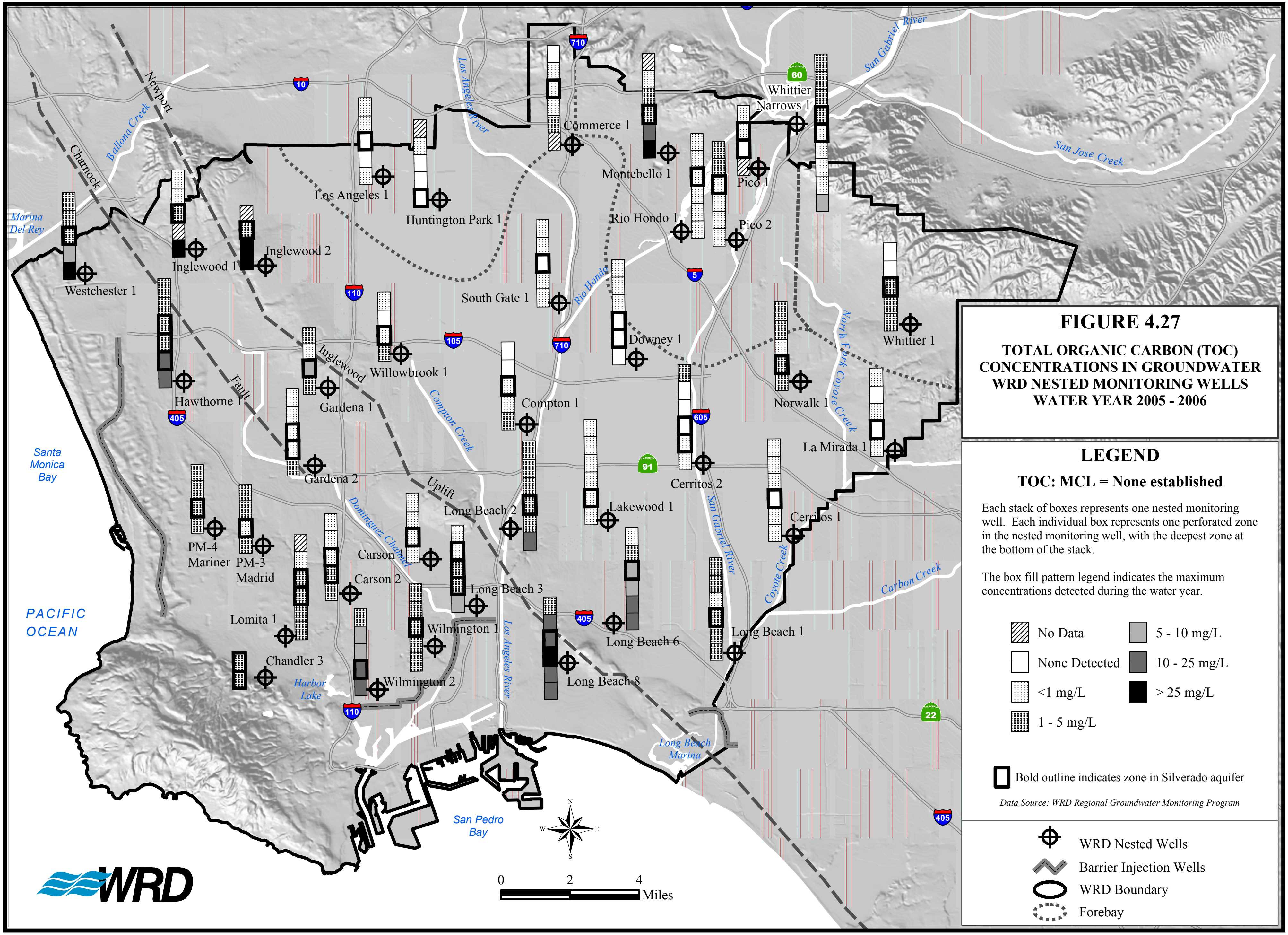

FIGURE 4.27

TOTAL ORGANIC CARBON (TOC) CONCENTRATIONS IN GROUNDWATER WRD NESTED MONITORING WELLS WATER YEAR 2005 - 2006

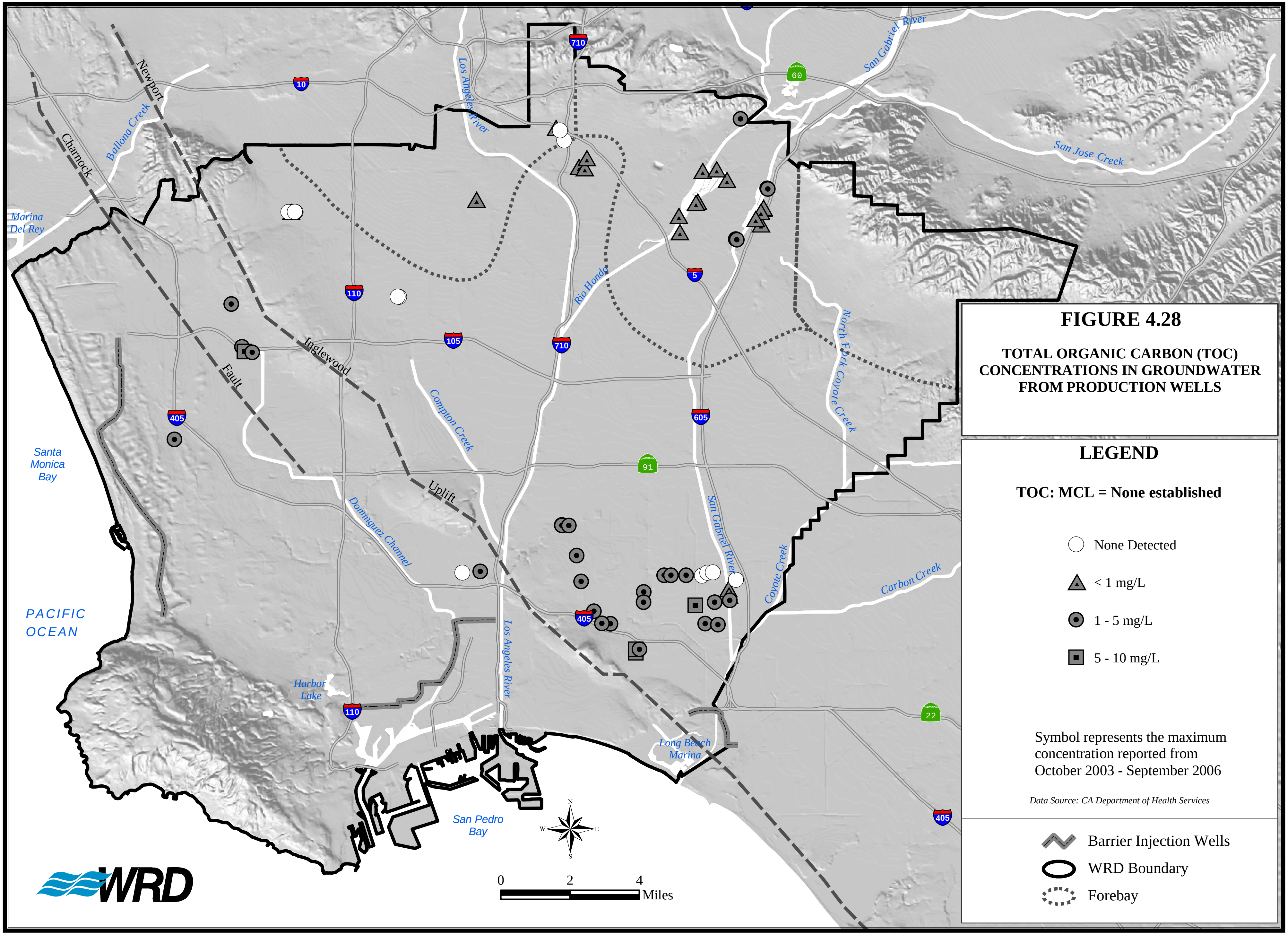
FIGURE 4.28
TOTAL ORGANIC CARBON (TOC) CONCENTRATIONS IN GROUNDWATER FROM PRODUCTION WELLS
LEGEND
TOC: MCL = None established
None Detected
< 1 mg/L
1 - 5 mg/L
5 - 10 mg/L
Symbol represents the maximum concentration reported from October 2003 - September 2006
Data Source: CA Department of Health Services
Barrier Injection Wells
WRD Boundary
Forebay
PACIFIC OCEAN
Santa Monica Bay
Marina Del Rey
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
Newport
Inglewood
Fault
Uplift
Charnock
Fault
0
2
4
Miles
N
S
E
W
WRD
10
60
110
105
710
5
605
405
91
22

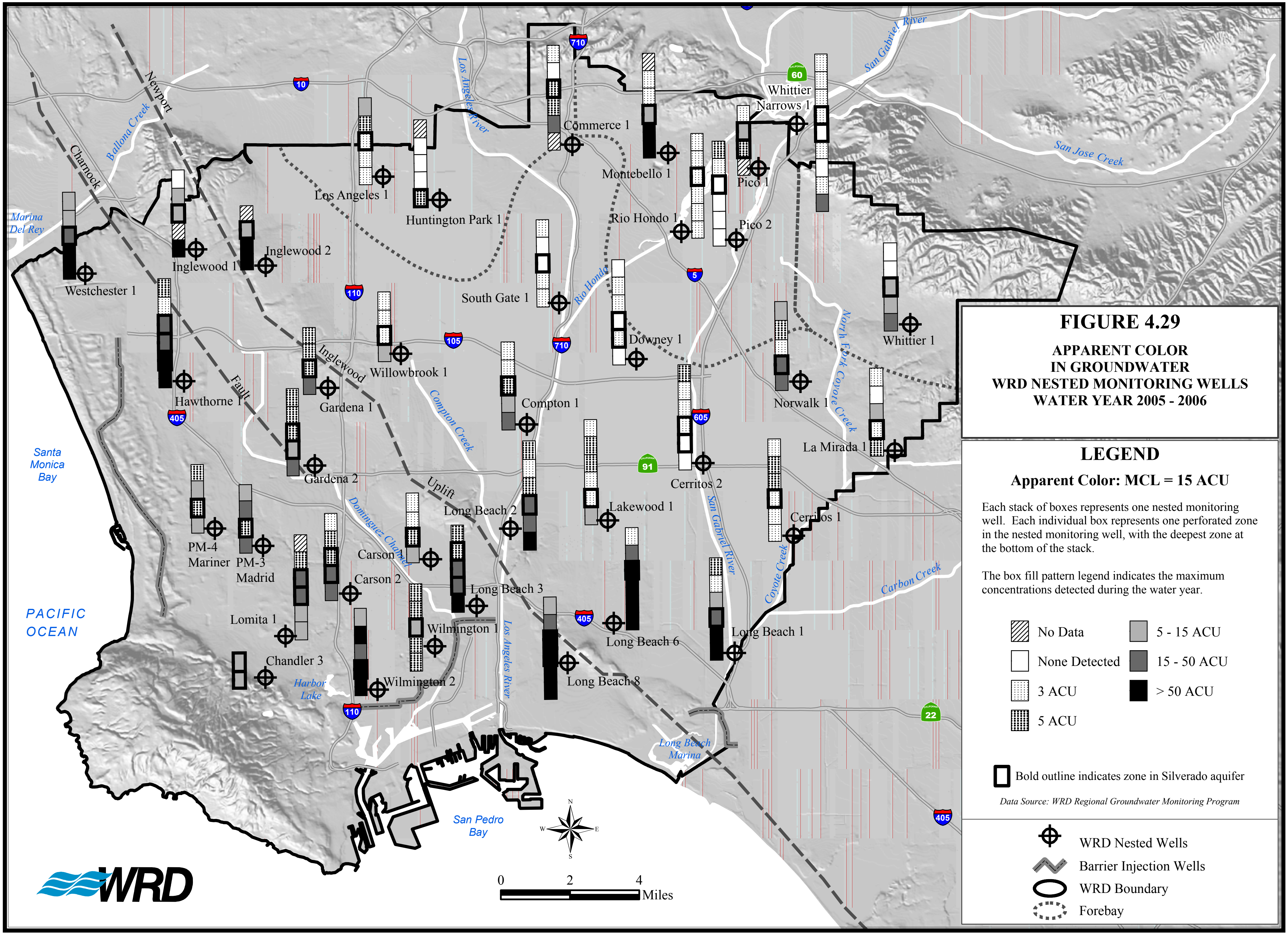

FIGURE 4.29

APPARENT COLOR IN GROUNDWATER WRD NESTED MONITORING WELLS WATER YEAR 2005 - 2006

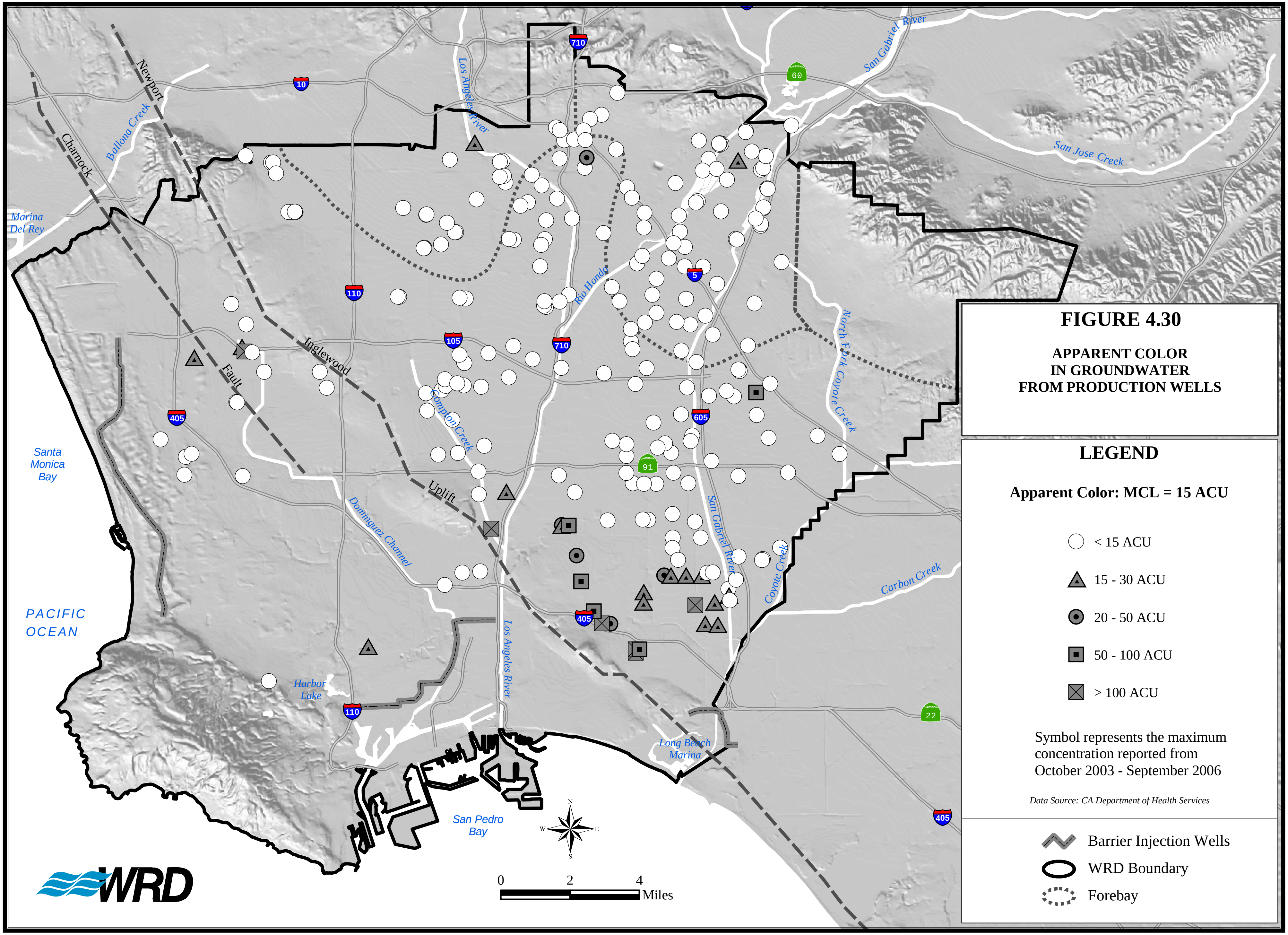
FIGURE 4.30
APPARENT COLOR
IN GROUNDWATER
FROM PRODUCTION WELLS
LEGEND
Apparent Color: MCL = 15 ACU
< 15 ACU
15 - 30 ACU
20 - 50 ACU
50 - 100 ACU
> 100 ACU
Symbol represents the maximum concentration reported from October 2003 - September 2006
Data Source: CA Department of Health Services
Barrier Injection 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
0 2 4 Miles
WRD

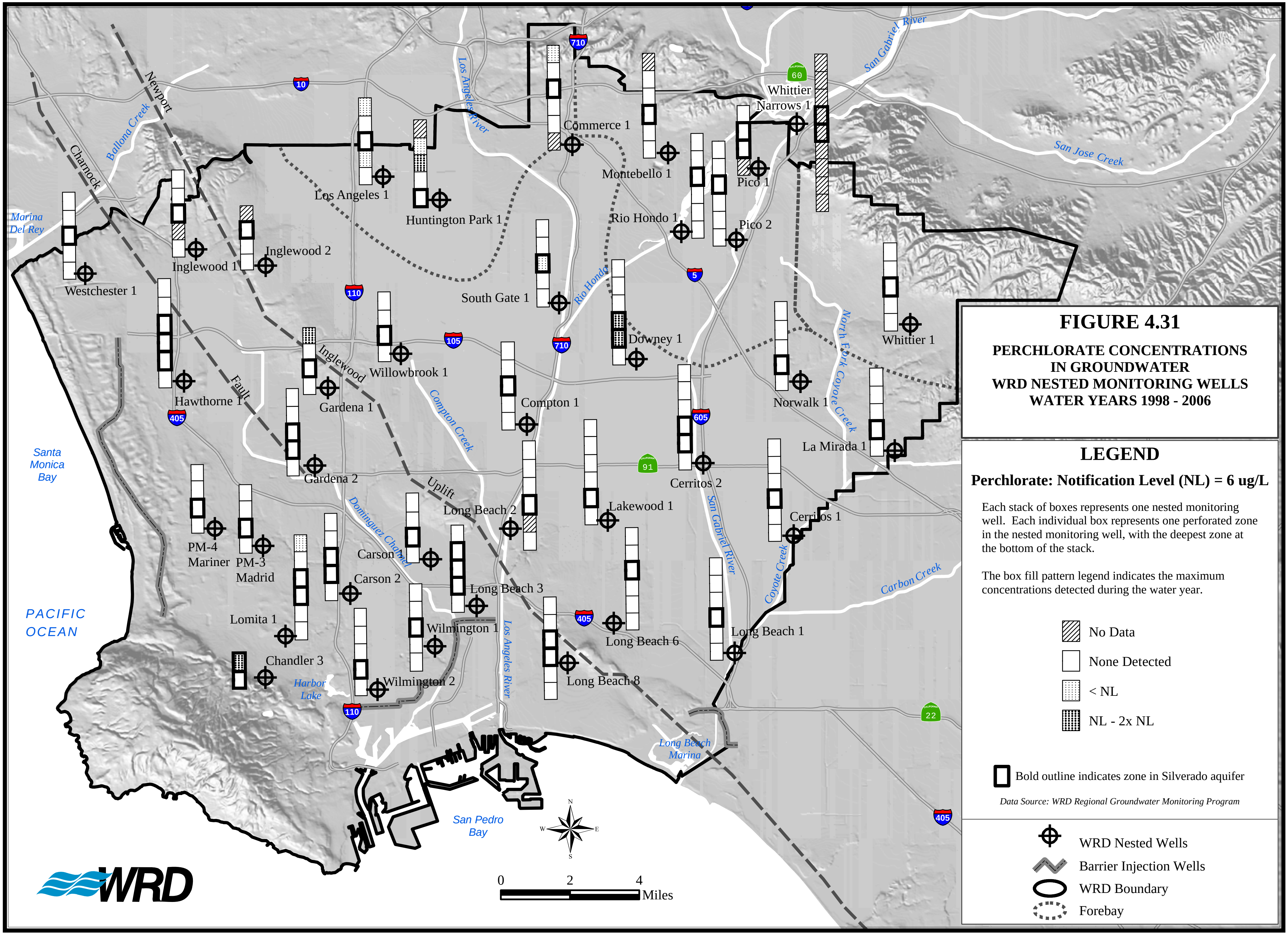

FIGURE 4.31

PERCHLORATE CONCENTRATIONS IN GROUNDWATER WRD NESTED MONITORING WELLS WATER YEARS 1998 - 2006

"To provide, protect and preserve high quality groundwater through innovative, cost-effective and environmentally sensitive basin management practices for the benefit of residents and businesses of the Central and West Coast Basins"

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