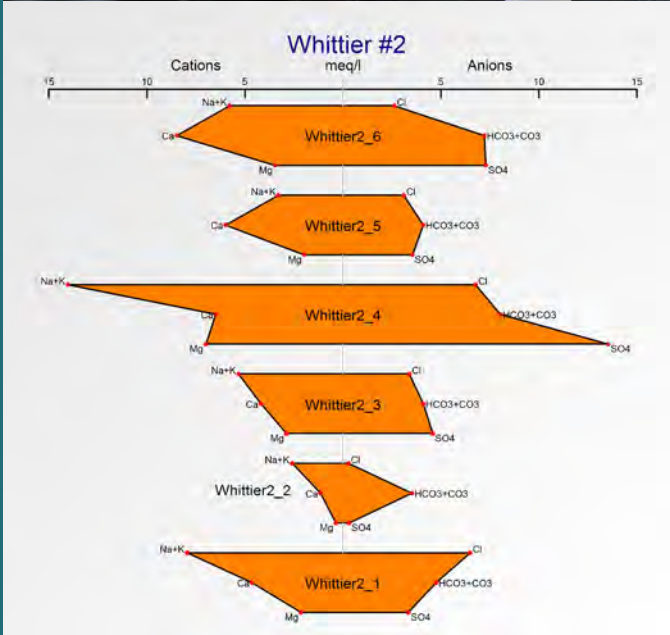
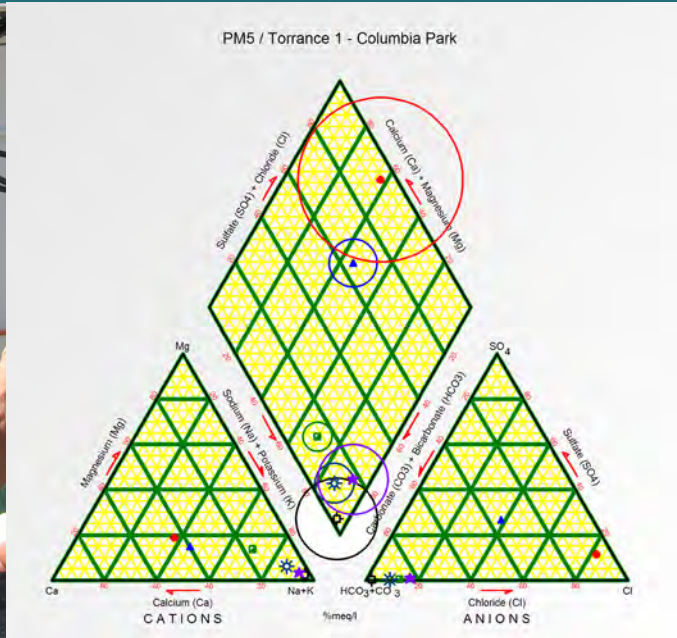
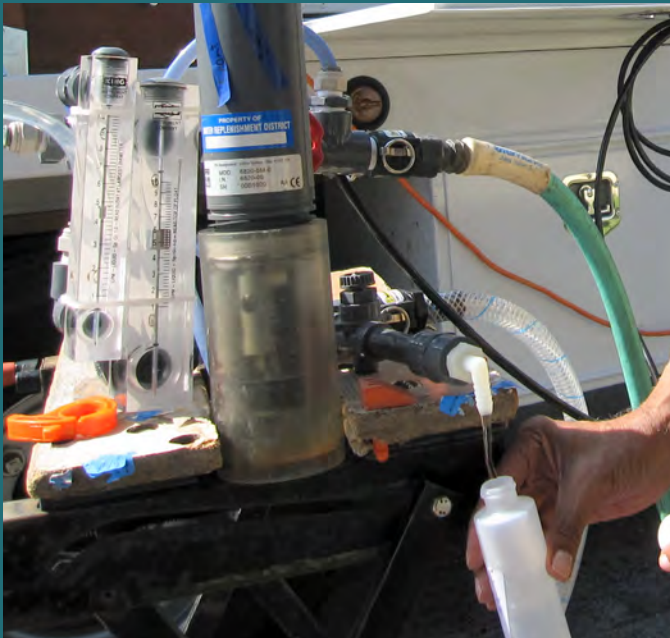


Water Replenishment District of Southern California



REGIONAL GROUNDWATER MONITORING REPORT WATER YEAR 2012-2013

Central and West Coast Basins
Los Angeles County, California

April 2014



**Water Replenishment District
Of Southern California**

**REGIONAL GROUNDWATER MONITORING REPORT
CENTRAL BASIN AND WEST COAST BASIN
LOS ANGELES COUNTY, CALIFORNIA
WATER YEAR 2012-2013**

APRIL 2014



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Executive Summary

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

WRD has been monitoring the CBWCB for over 50 years, and this year's annual report presents the most comprehensive information to date as a result of WRD's network of aquifer-specific monitoring wells and in-depth water quality analysis. The Regional Groundwater Monitoring Program (RGWMP) currently consists of a network of more than 300 monitoring wells at over 50 locations throughout the District. To that end, WRD has a dedicated Board and staff that engage in year-round activities to closely monitor groundwater conditions. The District performs extensive collection, analysis, and reporting of groundwater data to ensure proper resource management. The publication of this Regional Groundwater Monitoring Report (RGWMR) is one result of those efforts, which presents information on groundwater levels and groundwater quality for the previous water year which runs from October 1 through September 30 of each year. This current report is for water year 2012-13. Detailed information is presented in the body of the report with a summary below:

Groundwater Levels

Water levels did not change significantly over most of the coastal area of the West Coast Basin during water year 2012-13, increased up to 11 feet in the Carson/Dominguez Gap areas, and decreased up to 14 feet in the Inglewood/Gardena area. On average, West Coast Basin water levels increased about 2 feet. Groundwater levels decreased over most of the

Central Basin during water year 2012-13. Water levels decreased up to 20 feet and on average about 12.5 feet in the unconfined Montebello Forebay, and remained stable or decreased up to 4 feet across the unconfined Los Angeles Forebay. Groundwater levels over most of the Central Basin Pressure Area decreased 5 to 10 feet during water year 2012-13 with minor areas outside this range. The average decrease in water levels over the Central Basin was 7.5 feet. This general decrease was due to below normal precipitation and below normal replenishment water resulting in 68,000 acre-feet (AF) of groundwater removed from storage from the CBWCB.

Groundwater Quality

Annually, WRD collects nearly 600 groundwater samples from its monitoring well network and analyzes them for over 100 water quality constituents to produce nearly 60,000 individual data points to help track the water quality in the basins. By analyzing and reviewing the results on a regular basis, any new or growing water quality concerns can be identified and managed effectively.

The reporting of this monitoring and analysis include data tables, water quality maps, and graphs of trends which are presented in Chapters 3 and 4 of this report. Overall, the groundwater in the CBWCB continues to be of high quality, suitable for potable and non-potable uses, and continues to meet our high standards. There are localized areas of marginal to poor water quality that go untapped or may require treatment prior to use. The source of the poor water quality in these areas can be from natural or human causes. WRD will continue to focus on these areas to monitor trends and look for ways to mitigate any contamination that makes the groundwater unsuitable for use.

Analysis for this report uses water quality maps and trend graphs to focus on 10 key water quality constituents to represent overall groundwater quality in the basins, including total dissolved solids (TDS), iron, manganese, nitrate, chloride, trichloroethylene (TCE), tetrachloroethylene (PCE), arsenic, perchlorate, and hexavalent chromium. TDS, where elevated, is typically present along with chloride as an indicator of historical seawater intrusion or older marine sediments. The most prevalent water quality issue in the CBWCB

is manganese, a naturally-occurring element that at high concentrations may impact the aesthetics of groundwater and can require treatment prior to delivery as drinking water. Elevated, naturally-occurring arsenic impacts a number of CBWCB wells. TCE, PCE, and perchlorate that can leak into groundwater from industrial and commercial facilities, have also impacted wells in the District and are closely monitored. Emerging contaminants of concern (COCs) including hexavalent chromium, 1,4-dioxane, and 1,2,3-trichloropropane have new drinking water standards in development by regulators and WRD has begun baseline screening and analysis of these COCs to assess the potential threat to CBWCB groundwater.

Consistent with WRD's mission to provide, protect, and preserve high quality groundwater, and as required by the State's Recycled Water Policy, a Salt and Nutrient Management Plan (SNMP) is being developed and a Basin Plan Amendment will be subsequently adopted to ensure the long-term viability of groundwater in the CBWCB. Through the RGWMP, 65 key WRD nested monitoring wells were selected to track salt and nutrient water quality trends throughout the District and in the most critical areas of the basins, including areas near water supply wells and groundwater recharge projects that utilize recycled water (i.e. the seawater intrusion barriers and the Montebello Forebay Spreading Grounds). Overall, the data show that salt and nutrient concentrations in groundwater are stable and in some locations improving due to past and current groundwater management practices. Based on the existing water quality of the CBWCB and the future groundwater quality as estimated and presented in the SNMP, existing and planned implementation measures appear adequate to manage salt and nutrient loading on a sustainable basis.

Upcoming Activities and Challenges Ahead

WRD remains committed to its statutory charge to protect and preserve groundwater resources in the CBWCB. To that end, WRD will be completing the expansion of its groundwater monitoring well network and will continue to perform other projects and programs to meet this charge. One of the biggest challenges currently facing the District is the rising cost and unreliability of imported water for groundwater replenishment. The

District seeks to eliminate this reliance on imported water for replenishment and looks to expand local sources including storm water and recycled water. This initiative is our Water Independence Now (WIN) program,

designed to ensure reliable sources of replenishment water to keep the groundwater basins useable and of high quality for all the groundwater users in the WRD service area.

WRD will continue to use the data generated by the RGWMP along with WRD's geographic information system (GIS) capabilities to address current and potential upcoming issues related to water quality and groundwater replenishment in the CBWCB. WRD staff will be working on refining the hydrogeologic conceptual model of the CBWCB 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 to be proactively involved in the oversight of the most significant contaminated sites that threaten CBWCB groundwater resources and will continue to fund the Safe Drinking Water Program to address impacted groundwater. WRD will continue efforts under its Groundwater Contamination Prevention Program in order to minimize or eliminate threats to groundwater supplies. This includes continued administration of the Central and West Coast Basin Groundwater Contamination Forum, which consists of key stakeholders that are focused on expediting the investigation and cleanup of high-priority contaminated groundwater sites within the District. Currently, there is a list of 46 high-priority sites across the CBWCB.

On November 4, 2009, the State Legislature amended the Water Code with SBx7-6, which mandates a statewide groundwater elevation monitoring program to track seasonal and long-term trends in groundwater elevations in California's groundwater basins. In accordance with this amendment to the Water Code, the California Department of Water Resources (DWR) developed the California Statewide Groundwater Elevation Monitoring (CASGEM) program. In October 2011, WRD was assigned as the Designated Monitoring Entity (DME) responsible for collecting and reporting CBWCB groundwater level data to CASGEM. Through the RGWMP, WRD will continue to collect CBWCB groundwater level data, track seasonal and long-term trends, and provide data to the CASGEM program.

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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GLOSSARY OF ACRONYMS

AWTF	Advanced Water Treatment Facility
AWWA	American Water Works Association
BGS	Below Ground Surface
CASGEM	California Statewide Groundwater Elevation Monitoring
CDPH	California Department of Public Health (formerly California Department of Health Services)
CEQA	California Environmental Quality Act
COC	Contaminant of Concern
CSDLAC	County Sanitation Districts of Los Angeles County
CBWCB	Central Basin and West Coast Basin
DME	Designated Monitoring Entity
DWR	California Department of Water Resources
ESR	Engineering Survey and Report
GIS	Geographic Information System
GPS	Global Positioning System
GRIP	Groundwater Reliability Improvement Program
LACDPW	Los Angeles County Department of Public Works
LARWQCB	Los Angeles Regional Water Quality Control Board
LAX	Los Angeles International Airport
MCL	Maximum Contaminant Level
mg/L	Milligram per Liter
µg/L	Microgram per Liter
MWD	Metropolitan Water District of Southern California
NDMA	N-Nitrosodimethylamine
NL	Notification Level
OEHHA	Office of Environmental Health Hazard Assessment
PCE	Perchloroethylene or Tetrachloroethylene
PHG	Public Health Goal
Policy	Recycled Water Policy
RGWMP	Regional Groundwater Monitoring Program
RGWMR	Regional Groundwater Monitoring Report
RL	Response Level

GLOSSARY OF ACRONYMS (continued)

SMCL	Secondary Maximum Contaminant Level
SNMP	Salt and Nutrient Management Plan
S/N	Salt/Nutrient
SWRCB	State Water Resources Control Board
TCE	Trichloroethylene
TDS	Total Dissolved Solids
TIWRP	Terminal Island Water Reclamation Plant/Advanced Water Treatment Facility
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
VOC	Volatile Organic Compounds
WBMWD	West Basin Municipal Water District
WIN	Water Independence Now
WQO	Water Quality Objective
WRD	Water Replenishment District of Southern California
WRF	Water Recycling Facility
WRP	Water Reclamation Plant
WY	Water Year (October 1–September 30)

SECTION 1

INTRODUCTION

The Water Replenishment District of Southern California (WRD or the District) manages groundwater replenishment and water quality activities for the Central Basin and West Coast Basin (CBWCB) 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 CBWCB.

As part of accomplishing this mission, WRD maintains a thorough and current understanding of groundwater conditions in the CBWCB 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 groundwater 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 CBWCB 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 groundwater 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 (RGWMP) is an important District program which tracks groundwater levels and groundwater quality in the CBWCB to ensure the usability of this groundwater reservoir.

Prior to 1995, WRD relied heavily upon groundwater 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 basin conditions. However, these data were collected primarily from production wells, which are typically screened across multiple aquifers to maximize water inflow. The result is a mixing of the waters from the different aquifers connected by a single well casing, causing an averaging of water levels and water quality.

In order to obtain more accurate data for specific aquifers from which to infer localized water level and water quality conditions, depth-specific (nested) monitoring wells that tap discrete aquifer zones are necessary. **Figure 1.2** illustrates the capabilities of nested monitoring wells to assess individual aquifers compared to typical production wells.

Data are generally provided for a water year, which occurs from October 1 to the following September 30. During water year 1994-95, WRD and the United States Geological Survey (USGS) began a cooperative study to improve the understanding of the geohydrology and geochemistry of the CBWCB. The initial study was documented in USGS Water Resources Investigations Report 03-4065, *Geohydrology, Geochemistry and Ground-Water Simulation-Optimization of the Central Basin and West Coast Basin, Los Angeles County, California* (Reichard et al. 2003). This study is the nucleus of the ongoing 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 CBWCB. The study focused on new data collection through drilling and construction of nested groundwater monitoring wells and conducting depth-specific water quality monitoring.

Figure 1.3 shows the locations of wells in the resultant WRD nested monitoring well network. Currently, WRD has over 300 wells at more than 55 locations. A listing and depth details for the WRD wells are presented in **Table 1.1**. WRD and the USGS are currently expanding the nested monitoring well network. Two new wells are scheduled to be

completed in the upcoming year. These wells will fill current data gap areas and address significant groundwater management issues.

An Annual Report on the Results of Water Quality Monitoring (Annual Report) was published by WRD each year for water years 1972-73 through 1994-95, 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 for the monitoring of groundwater quality in the Montebello Forebay. The Regional Groundwater Monitoring Program was designed to serve as an expanded, more representative basinwide monitoring program for the CBWCB. This Regional Groundwater Monitoring Report is published in lieu of the previous *Annual Reports*.

1.2 CONCEPTUAL HYDROGEOLOGIC MODEL

As described above, the RGWMP changes the focus of groundwater monitoring efforts in the CBWCB from production wells 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 basins and the names of water-bearing zones are 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 CBWCB 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 modified versions of cross-sections presented in

Bulletin 104 based on data collected as part of the RGWMP, and illustrate a simplified aquifer system in the CBWCB. The main potable production aquifers are shown, including the deeper Lynwood, Silverado, and Sunnyside aquifers of the lower Pleistocene San Pedro Formation. Other shallower aquifers, which locally produce potable water, include the Gage and Gardena aquifers of the upper Pleistocene Lakewood Formation. Also shown on the geologic sections are the aquitards separating aquifers. Throughout this report the aquifers shown on the geologic sections are referred to as discrete groundwater zones. Many references are made to the Silverado Aquifer, which is typically the main producing aquifer in the CBWCB. Substantial production can come from the Lynwood and Sunnyside aquifers as well.

1.3 GIS DEVELOPMENT AND IMPLEMENTATION

WRD uses a sophisticated Geographic Information System (GIS) as a tool for CBWCB 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 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 and Interactive Well Search Tool, which was made available to the public for access to CBWCB

groundwater information. WRD's internet-based GIS can be accessed through our GIS website at <http://gis.wrd.org>. The website 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 maps or 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 CBWCB for water year 2012-13, and discusses the status of the RGWMP. Section 1 provides an overview of WRD and its RGWMP. Section 2 discusses groundwater levels for water year 2012-13. Section 3 presents water quality data for the WRD nested monitoring wells, basinwide production wells, and replenishment water. Section 4 summarizes salt and nutrient management in the CBWCB and presents water quality trends for TDS and chloride. Section 5 presents the findings from the evaluation of data in this report. Section 6 describes future regional groundwater monitoring and related activities. Section 7 lists the references used in this report. Tables and figures are presented at the end of the report. WRD Regional Groundwater Monitoring Reports can be viewed online and downloaded in PDF format from the WRD website at <http://www.wrd.org>.

SECTION 2

GROUNDWATER LEVELS

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

WRD tracks groundwater levels throughout the year by measuring the depth to water in monitoring wells and production wells located throughout the CBWCB. **Table 2.1** presents manual groundwater level measurements collected from the District's nested monitoring wells during water year 2012-13. In order to capture the daily and seasonal variations in water levels, WRD has installed automatic data-logging equipment in numerous wells to collect water levels daily. WRD also obtains water level data from cooperating entities such as area pumpers, DWR, and LACDPW, who collect water levels from their wells. These data are entered into WRD's GIS water level database for archiving and analysis.

From the water level database, a groundwater elevation contour map, change in groundwater level map, and groundwater elevation hydrographs for key wells were prepared to illustrate the current and historical groundwater conditions in the basins. These are presented and explained in the following sections.

2.1 GROUNDWATER ELEVATION CONTOURS

Figure 2.1 is a contour map showing the groundwater elevations measured across the CBWCB in the deeper, main producing aquifers. The levels were measured at the end of the water year during Fall 2013. The Fall Contour Map shows that in the Central Basin, the

highest water levels are in the Montebello Forebay; water levels decrease to the south and west towards the Long Beach area, the Newport-Inglewood Uplift, and the Los Angeles Forebay.

In the West Coast Basin, water levels are highest along the West Coast Basin Seawater Intrusion Barrier, and decrease to the east where they are at their lowest elevation in the City of Gardena between the Charnock Fault and Newport-Inglewood Uplift, both of which are geologic structural features that partially restrict groundwater flow.

2.2 CHANGES IN GROUNDWATER LEVELS

The results of groundwater level changes observed over the water year are illustrated in **Figure 2.2**, which is a groundwater level change map. Groundwater levels decreased over most of the Central Basin during water year 2012-13. Water levels decreased up to 20 feet and on average about 12.5 feet in the unconfined Montebello Forebay, and decreased up to 4 feet across the unconfined Los Angeles Forebay and about 5 to 10 feet in the western Central Basin Pressure Area. Groundwater levels decreased up to 12 feet in the Long Beach pressure area. Groundwater levels over most of the Central Basin Pressure Area decreased 5 to 10 feet over water-year 2012-12. Groundwater levels decreased up to 20 feet in the eastern Central Basin Pressure Area. On average, groundwater levels decreased approximately 7.5 feet over the entire central basin.

Water levels did not change significantly over most of the coastal area of the West Coast Basin during water year 2012-13. However, water levels increased up to 11 feet in the Carson and Dominguez Gap areas, but decreased a maximum of 14 feet in the Inglewood/Gardena area. The average increase in groundwater levels over the entire West Coast Basin is estimated to be approximately 2 feet.

With groundwater levels increasing slightly in the West Coast Basin and decreasing significantly in the larger Central Basin, an overall decrease in groundwater in storage is expected. It is estimated (ESR, 2014) that 68,000 acre-feet of groundwater was removed

from storage in the CBWCB over water-year 2012-13.

2.3 GROUNDWATER LEVEL HYDROGRAPHS

WRD also uses hydrographs to track the changes in water levels in wells over time. Hydrographs reveal the seasonal fluctuations of water levels caused by variations in natural and artificial recharge, and the effects of pumping and other basin discharge. Historical hydrographs of water level data going back to the 1930s and 1940s in the Montebello Forebay, Los Angeles Forebay, Central Basin Pressure Area, and West Coast Basin are presented in the annual WRD Engineering Survey and Report (ESR). The ESR hydrographs illustrate the general history of groundwater conditions in the CBWCB and results show: 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 reversal in this downward trend due to initiation of groundwater management policies. Water levels increased 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 been in closer balance to withdrawals.

Hydrographs for WRD nested monitoring wells that track water level changes through time from individual aquifer zones provide WRD with detailed, aquifer-specific water level information. The data for these annual hydrographs are collected from WRD's network of nested monitoring wells. **Figures 2.3 through 2.14** are historical hydrographs of 12 key WRD nested monitoring wells, including three in the Montebello Forebay, one in the Los Angeles Forebay, four in the Central Basin Pressure Area, and four in the West Coast Basin, respectively. These hydrographs illustrate there can be distinct groundwater elevation differences, up to 90 feet, between individual aquifers at a nested well location. The differences in elevation are influenced by variable discharge (i.e. pumping from wells) and recharge (i.e. injection, percolation, or underflow) and the degree of hydraulic communication between aquifers. These hydrographs are particularly useful in identifying the zones that are in the main flow system and the zones that show the greatest depth and

seasonal fluctuations in groundwater levels during the water year. The evaluation of **Figures 2.3 through 2.14** are presented in the following sections.

2.4 GROUNDWATER LEVELS IN THE MONTEBELLO FOREBAY

Figure 2.3 is a hydrograph for WRD's Rio Hondo #1 key nested monitoring well located in the Montebello Forebay at the Rio Hondo Spreading Grounds. There are six individual wells (zones) that are screened in the following aquifers (from shallowest to deepest): Gardena, Lynwood, Silverado, and Sunnyside (3 deepest zones), with depths ranging from 140 to 1,130 feet below ground surface (BGS). Because this well is located in the Montebello Forebay, where the aquifers are in general hydraulic communication with each other, water level responses in all of the aquifers are similar and seasonal highs and lows are in response to recharge and pumping. Groundwater elevations are lowest in Zone 4, the Silverado Aquifer, suggesting that this aquifer is the most heavily pumped in the area. Water levels in Zone 4 decreased about 10 feet over the past water year and are near the lowest level recorded in the past 15 years.

Figure 2.4 is a hydrograph for WRD's Pico #2 key nested monitoring well located in the Montebello Forebay adjacent to the San Gabriel River and south of the San Gabriel River Spreading Grounds. There are six individual wells (zones) that are screened in the following aquifers (from shallowest to deepest): Gaspur, Lynwood, Silverado, and Sunnyside (3 deepest zones), with depths ranging from 100 to 1,200 feet BGS. Groundwater elevations are lowest in Zones 1 and 2, both in the Sunnyside Aquifer, suggesting that this aquifer is the most heavily pumped in the area. Water levels in Zones 1 and 2 decreased about 14 feet over the past water year and by about 23 feet over the past 14 years.

Figure 2.5 is a hydrograph for WRD's Norwalk #2 key nested monitoring well located in the Montebello Forebay, 3.5 miles south of the San Gabriel River Spreading Grounds. There are six individual wells (zones) that are screened in the following aquifers (from shallowest to deepest): Exposition, Gardena, Lynwood, Silverado, and Sunnyside

(2 deepest zones), with depths ranging from 236 to 1,480 feet BGS. This is the third key well representing the Montebello Forebay and unlike Rio Hondo #1 and Pico #2, water level responses are less pronounced in response to the seasonal discharge and recharge influences with seasonal swings of around 20 feet compared to the over 30-foot seasonal swings at Rio Hondo #1 and Pico #2. Groundwater elevations are lowest in Zone 3, the Silverado Aquifer, suggesting that this aquifer is the most heavily pumped in the area. Water levels in Zone 3 decreased over the past water year by about 10 feet.

2.5 GROUNDWATER LEVELS IN THE LOS ANGELES FOREBAY

Figure 2.6 is the key 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. There are five individual wells (zones) that are screened in the following aquifers (from shallowest to deepest): Gaspar, Exposition, Gage, Jefferson, and Silverado, with depths ranging from 114 to 910 feet BGS. Only four of the zones are shown on the hydrograph because the shallowest well (screened from 114 to 134 feet BGS in the Gaspar Aquifer) is dry and perforated above the water table, and therefore no water elevations are shown on the graph. There is a large separation in water levels between Zone 4 and the three deeper zones, suggesting the presence of a low permeability aquitard(s) above Zone 3 that hydraulically isolates the Exposition Aquifer from the deeper aquifers. Water levels in the deepest two zones, the Jefferson and Silverado Aquifers, are generally similar and decreased by about 6 feet over the past water year. In general, water levels in the Los Angeles Forebay have remained relatively stable over the past 15 years.

2.6 GROUNDWATER LEVELS IN THE CENTRAL BASIN PRESSURE AREA

Figure 2.7 is a hydrograph for WRD's South Gate #1 nested monitoring well, which is located in the north-central portion of the Central Basin Pressure Area, just outside the Montebello and Los Angeles Forebays. There are five individual wells (zones) that are screened, from shallowest to deepest, in the Exposition, Lynwood, Silverado, and Sunnyside Aquifers, and the Pico Formation, with depths ranging from 220 to 1,460 feet

BGS. Water levels in Zones 1 through 4 generally behave similarly and respond to seasonal discharge and recharge. The upper zone has shallower water levels, shows little seasonal response, and is isolated from the aquifers below by an aquitard, resulting in the observed hydraulic separation. South Gate #1 water levels decreased about 8 feet in the deeper aquifers over water year 2012-13, and have generally declined about 14 feet over the past 14 years.

Figure 2.8 is a hydrograph for WRD's Willowbrook #1 nested monitoring well, which is located in the Central Basin Pressure Area, about 7 miles southwest of the Montebello Forebay. There are four individual wells (zones) that are screened in the Gage, Lynwood, Silverado, and Sunnyside Aquifers, with depths ranging from 200 to 905 feet BGS. Water levels in Zone 1 show the greatest response to seasonal influences. The upper three zones have generally shallower water levels than Zone 1 and the Zones 3 and 4 track very closely. These trends suggest some aquifer separation (aquitards) between Zones 1 and 2 and between Zones 2 and 3. Zones 3 and 4 likely have little hydraulic separation. Willowbrook #1 water levels decreased from 2 to 6 feet over water year 2012-13, and have generally declined 20 feet over the past 14 years.

In another region of the Central Basin Pressure Area, **Figure 2.9** is the historical water level hydrograph for key nested monitoring well Long Beach #6 located in the southern portion of the Central Basin Pressure Area, on Spring Street near the Long Beach Airport. There are six individual wells (zones) that are screened in the following (from shallowest to deepest): Gage, Lynwood, Silverado, and Sunnyside (two zones) Aquifers, and Pico Formation with depths ranging from 220 to 1,510 feet BGS. Because this portion of the Central Basin Pressure Area has multiple confined aquifers separated by substantial aquitards and experiences heavy seasonal pumping cycles, water level fluctuations can be larger than in other areas. For example, water levels in Zones 4 and 5, representing the Lynwood and Silverado Aquifers, have varied over 110 feet through a seasonal cycle, from a high of 5 feet below sea level in April 2006 to lows of greater than 120 feet below sea level in recent years. Water levels in the other zones also generally show significant seasonal variation, with typical seasonal lows in the late Summer and Fall and highs in

Spring. Seasonal pumping cycles have changed in recent years and many production wells in the area near the Long Beach #6 monitoring well pump groundwater year-round when imported surface water is unavailable or expensive. When year-round pumping takes place, the typical Fall water level rebound does not occur and groundwater levels can remain at the low levels seen during water year 2008-09. In contrast, between November 2010 and September 2011, the City of Long Beach did not pump groundwater for many of these months, which resulted in a nearly year-long rebound of groundwater levels. **Figure 2.9** shows the decrease that occurred in all zones of Long Beach #6 over the past water year with water levels in Zones 4 and 5 decreasing 8 to 10 feet from the previous water year.

Seal Beach #1 was added as a key nested monitoring well due to its proximity inland of the Alamitos Gap Seawater Intrusion Barrier. It is a relatively new well location, constructed in 2010. The limited historical groundwater elevations for Seal Beach #1 are shown on **Figure 2.10**. There are seven individual wells (zones) that are screened in the following aquifers (from shallowest to deepest): Gaspur, Gage, Lynwood, Silverado, and Sunnyside (3 zones), with depths ranging from 60 to 1,365 feet BGS. Zone 4 is the Silverado aquifer and is the deepest responding unit at this Seal Beach location. Zone 5 responds similarly to Zone 4, but draws down less than Zone 4 during heavily pumped periods. Zones 1, 2, and 3 overlay on the hydrograph and have water levels approximately 10 or more feet above Zone 5 and show similar seasonal response. Zones 6 and 7 show a smaller seasonal response than the five lower zones, with groundwater elevations at or slightly below sea level suggesting partial isolation from the lower aquifer systems. Groundwater levels in Zone 4 dropped 7 feet over water year 2012-13.

2.7 GROUNDWATER LEVELS IN THE WEST COAST BASIN

Figure 2.11 is a hydrograph for WRD's PM-4 Mariner nested monitoring well, which is located in the City of Torrance, in the coastal area inland from the West Coast Basin Seawater Intrusion Barrier. There are four individual wells (zones) that are screened in the following aquifers (from shallowest to deepest): Lynwood (2 zones), Silverado, and Sunnyside, with depths ranging from 200 to 710 feet BGS. All four zones respond similarly

to seasonal fluctuations. Water levels in Zone 1 (Sunnyside) are deepest, separated from Zone 2 (Silverado) which is several feet higher. Water levels in Zones 3 and 4 (Lynwood and Gage) are both about 2 feet above those in Zone 2. Water levels did not change significantly at PM-4 Mariner in water year 2012-13 and have been generally stable, increasing 2 to 4 feet over the past 15 years.

Figure 2.12 is a hydrograph for WRD's Carson #1 nested monitoring well, which is located in the inland region of the West Coast Basin, about 1.5 miles northwest of the intersection of the 405 Freeway and Alameda Street. There are four individual wells (zones) that are screened in the following aquifers (from shallowest to deepest): Gage, Lynwood, Silverado, and Sunnyside, with depths ranging from 250 to 1,110 feet BGS. Water levels in Zone 1 track very similar to Zone 2 throughout the year, and Zone 3 tracks similar to Zone 4. Groundwater elevations currently differ by about 35 feet between the upper and lower zones, which suggest the presence of a low permeability aquitard(s) between them that hydraulically isolate the shallow aquifers from the deeper ones. Water levels in Zones 1 and 2 increased about 6 feet over the past water year and have generally increased 30 feet over the past 13 years. Water levels in Zones 3 and 4 both have been relatively stable over the past water year, but have generally increased 10 to 12 feet over the past 14 years.

Manhattan Beach #1 is a relatively new WRD nested monitoring well (constructed in 2011) and was designated as a key nested monitoring well due to its proximity one half mile inland of the West Coast Basin Seawater Intrusion Barrier. **Figure 2.13** is a hydrograph for Manhattan Beach #1, which consists of seven individual wells (zones) that are screened in the following aquifers (from shallowest to deepest): Gage, Lynwood, Silverado (2 zones), Sunnyside, and Pico Formation (2 zones), with depths ranging from 180 to 1,990 feet BGS. Zone 3, screened in the Sunnyside Aquifer and has the deepest water levels, up to 30 feet lower than Zones 1, 2, 4, and 5 which generally track together and within 5 feet of each other. Water levels in Zones 6 and 7 are six to eight feet above Zones 1, 2, 4, and 5. Seasonal fluctuations are not pronounced at the Manhattan Beach #1 location and groundwater levels have increased about 2 feet over the past water year.

Figure 2.14 is a hydrograph for WRD's Wilmington #2 key nested monitoring well, which is located in the West Coast Basin, inland of the Dominguez Gap Seawater Intrusion Barrier. There are five individual wells (zones) that are screened, from shallowest to deepest, in the Gage, Lynwood (2 zones), Silverado, and Sunnyside Aquifers with depths ranging from 120 to 970 feet BGS. Water levels in Zones 1 through 4 are generally deeper and behave similarly to seasonal influences. The upper zone has shallower water levels, shows less seasonal response, and is isolated from the aquifers below by a pressure area aquitard resulting in the observed hydraulic separation. Wilmington #2 water levels increased about 5 feet in the deeper aquifers over water year 2012-13, and have generally increased about 20 feet over the past 15 years.

SECTION 3

GROUNDWATER AND REPLENISHMENT WATER QUALITY

This section discusses the vertical and horizontal distribution of water quality constituents in the CBWCB based on data from WRD's nested monitoring wells, purveyors' production wells, and source waters used for CBWCB groundwater replenishment. The regional groundwater quality maps included herein depict constituents of interest in the nested monitoring wells and production wells.

Comparison of water quality results to various regulatory standards are made throughout this section. A brief discussion describing the regulatory standards used in the report follows. A Primary Maximum Contaminant Level (MCL) is an enforceable drinking water standard that the California Department of Public Health (CDPH) establishes after health effects, a risk assessment, detection capability, treatability, and economic feasibility are considered. A Secondary Maximum Contaminant Level (SMCL) is established for constituents that impact aesthetics of the water, such as taste, odor, and color, and do not impact health. Various other criteria are used in discussing water quality. 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 Notification Level (NL) and Response Level (RL) are non-enforceable health-based advisory levels established by the CDPH based on preliminary reviews of health effects studies for which enforceable levels have not been established. NLs and RLs replaced State Action Levels effective January 1, 2005 per California Health and Safety Code Section 116455. 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 MCLs and/or PHGs are established.

3.1 QUALITY OF GROUNDWATER

The focus of this section is groundwater quality from samples collected from WRD nested monitoring wells and purveyors' production wells. Section 1 of this report described the value of data from aquifer-specific nested monitoring wells and these data provide the most valuable insight into CBWCB groundwater quality. Semi-annual groundwater samples from WRD nested wells were collected and submitted to a State-certified laboratory for analytical testing for general water quality constituents and known or suspected natural and man-made contaminants. **Table 3.1** presents water quality analytical results from WRD nested monitoring wells in the Central Basin during water year 2012-13. **Table 3.2** presents water quality analytical results from WRD nested monitoring wells in the West Coast Basin during water year 2012-13. Supplementing the data from the nested monitoring well network, data for CBWCB production wells were obtained from the CDPH based on results submitted over the past three years by purveyors for their Title 22 compliance.

Water quality maps for nested monitoring wells and production wells are presented herein for ten water quality constituents and emerging contaminants of concern (COCs). The ten constituents include total dissolved solids (TDS), iron, manganese, nitrate, chloride, trichloroethylene (TCE), tetrachloroethylene (PCE), arsenic, perchlorate, and hexavalent chromium. The maps illustrate areal and vertical differences in water quality between the different aquifers and compare the aquifer-specific water quality data from WRDs nested monitoring wells to the averaged water quality data collected from purveyors' production wells.

3.1.1 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 SMCL for TDS ranges from 500 milligrams per liter (mg/L), which is the recommended level, to an upper level of 1,000 mg/L, and to 1,500 mg/L, which is the level allowed for short-term use. WRD uses the 1,000 mg/L upper level SMCL for water quality comparisons and analyses.

WRD nested monitoring well data for water year 2012-13 indicate relatively low TDS concentrations for groundwater in the deeper producing aquifers of the Central Basin (**Figure 3.1**). In the Central Basin, 29 out of 32 (91%) WRD nested monitoring wells screened in the Silverado Aquifer had TDS concentrations below the SMCL of 1,000 mg/L and 27 out of 32 (84%) were below 500 mg/L. In contrast, West Coast Basin nested monitoring well data show generally higher TDS concentrations. Thirteen out of 19 (68%) nested wells screened in the Silverado Aquifer had TDS concentrations below 1,000 mg/L, and 8 out of 19 (42%) wells were below 500 mg/L. Elevated TDS concentrations in the West Coast Basin were observed along the coast from Redondo Beach to Los Angeles International Airport (LAX), in the Inglewood area, and the Dominguez Gap area.

Figure 3.2 presents CDPH water quality data for TDS in production wells across the CBWCB for the period spanning water years 2010-13. In the Central Basin, TDS was detected below the Upper Level SMCL in 234 out of 236 wells (99%) and 183 wells (78%) were below 500 mg/L.

Data from West Coast Basin production wells indicate that most drinking water wells had TDS concentrations below 1000 mg/L. TDS detected was below the Upper Level SMCL in 29 out of 32 wells (91%). Ten wells (30%) were below 500 mg/L. Production wells with higher levels of TDS are generally located near the coast within the West Coast Basin, while further inland production wells generally had lower TDS concentrations. The elevated TDS levels may be caused by seawater intrusion, connate brines, or possibly oil field brines.

3.1.2 Iron

Iron occurs naturally in groundwater. Sources for iron in groundwater are both natural and man-made. Iron is leached from sediments in subsurface aquifers and steel pipes used for construction of water wells and distribution systems. Sufficient concentrations of iron in water can affect the water's suitability for domestic or industrial purposes. Some industrial processes cannot tolerate more than 0.1 mg/L. The SMCL for iron in drinking water is

0.3 mg/L. High concentrations of iron in water can stain plumbing fixtures and clothing, encrust well screens, clog pipes, and may impart a salty taste. While these problems are recognized, iron is considered an essential nutrient, important for human health, and does not pose significant health effects except in special cases.

Nested monitoring well data do not indicate iron to be a widespread water quality problem in groundwater in the CBWCB. **Figure 3.3** shows iron data in WRD nested monitoring well locations for water year 2012-13. In the Central Basin, iron was below the SMCL in Silverado zones in 29 out of the 32 (91%) nested well locations. In zones above or below the Silverado Aquifer, iron was detected above the SMCL in only 4 out of the 32 (13%) Central Basin nested well locations.

In the West Coast Basin, iron was detected below the SMCL in the Silverado zones in 17 out of 19 nested well locations (90%). Ten well locations had iron concentrations above the SMCL in zones above or below the Silverado Aquifer.

Figure 3.4 presents CDPH water quality data for iron in production wells across the CBWCB for the period spanning water years 2010-13. In the Central Basin, 213 of 238 (89%) production wells have iron concentrations in groundwater below the SMCL. In the West Coast Basin, 23 production wells out of 32 (72%) have iron concentrations below the SMCL.

3.1.3 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. While manganese is considered an essential nutrient for human health at low levels, an SMCL of 50 micrograms per liter ($\mu\text{g/L}$) is established for manganese due to aesthetics.

Manganese concentrations in the WRD nested monitoring wells (**Figure 3.5**) exhibit widespread vertical and horizontal variations across the CBWCB. In the southern portion

of the Central Basin, elevated manganese typically occurs in shallower aquifers above the Silverado producing zones. In the northern portion of the Central Basin, manganese is present in shallow zones, the Silverado zones, and the deeper zones. Ten out of 32 (31%) nested monitoring well locations in the Central Basin had a zone with manganese concentrations exceeding the SMCL in the Silverado Aquifer. In the West Coast Basin, manganese was detected above the SMCL in the Silverado zones at 11 out of 19 (58%) nested well locations.

Figure 3.6 presents CDPH water quality data for manganese in production wells across the CBWCB for the period spanning water years 2010-13. In the Central Basin, data show a number of wells having elevated manganese concentrations, but 192 out of 237 production wells (81%) had concentrations below the SMCL. The production wells with elevated manganese levels are not limited to a specific area but tend to be widespread. 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 SMCL or not detected at all. In the West Coast Basin, 15 out of 33 production wells (45%) had concentrations of manganese above the SMCL.

3.1.4 Chloride

Chloride at elevated levels causes water to taste salty and it is the characteristic constituent used to identify seawater intrusion. The recommended SMCL for chloride is 250 mg/L with an upper SMCL of 500 mg/L, and a short term SMCL of 600 mg/l. **Figure 3.7** presents water quality data for chloride in WRD nested monitoring wells in the CBWCB during water year 2012-13. In the Central Basin, the Silverado zones of the nested monitoring well locations generally contain low chloride concentrations. Only one Central Basin nested well screened in the Silverado Aquifer exceeded the upper level SMCL. In the West Coast Basin, chloride concentrations exceeded the upper SMCL limit in the Silverado zones in 8 of the 19 (42%) nested well locations, primarily in areas where seawater intrusion could be the source, or from sources yet to be identified. Numerous nested wells in the West Coast Basin show chloride impacts above and below the Silverado Aquifer.

Figure 3.8 presents CDPH water quality data for chloride in production wells in the CBWCB for the period spanning water years 2010-13. Chloride was not detected above the SMCL in any of the Central Basin production wells. In the West Coast Basin, two production wells, both located on the west side of the basin, had chloride concentrations above the upper SMCL.

3.1.5 Nitrate

MCLs were established by CDPH for two forms of nitrogen in drinking water: nitrate and nitrite. Nitrate (measured as Nitrate) has an MCL of 45 mg/L, which corresponds to 10 mg/L of nitrate as nitrogen. Nitrite (measured as nitrogen) has an MCL of 1 mg/L. The combined total of the nitrate and nitrite, measured as total nitrogen, has an MCL of 10 mg/L. These constituents are regulated because they present possible acute health risks and can cause anoxia in infants. When consumed in excess of the MCLs, 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 can be introduced into groundwater from agricultural practices such as fertilization of crops or lawns and leaching of animal wastes. Low concentrations of nitrogen compounds, including nitrate and nitrite, are present in treated recycled water below regulatory and permitted limits and may be a source of nitrate loading to groundwater. Typically, organic nitrogen and ammonia are the initial byproducts of the decomposition of human or animal wastes. Upon oxidation, the organic nitrogen and ammonia are converted first to nitrite and then nitrate ions in the subsurface. A portion of the nitrate and nitrite are converted to nitrogen gas and hence, are returned to the atmosphere.

Figure 3.9 presents nitrate (as nitrogen) water quality data for nested monitoring wells in the CBWCB during water year 2012-13. In the Central Basin, nitrate does not exceed the MCL in the Silverado zone of any nested monitoring well location. Nitrate detections above the MCL were limited to the shallowest zones at 2 of the 32 (6%) nested well

locations. Nested monitoring wells in the immediate vicinity of the Montebello and Los Angeles Forebays typically contain nitrate in upper zones. Some wells downgradient from the Montebello Forebay have middle zones with nitrate detections below the MCL. Nested wells further downgradient from the forebays generally do not have detectable concentrations of nitrate. The detectable but relatively low concentrations of nitrate at and near the forebays may be due to the use of local water and/or recycled water for groundwater recharge at the spreading grounds. The generally widespread shallow occurrences of nitrate throughout the Central Basin may be attributed to local surface recharge impacted by historical agricultural activities.

In the West Coast Basin nested monitoring wells, nitrate was present above the MCL in the shallowest zones of 2 out of the 19 (11%) nested monitoring well locations. Nitrate does not exceed the MCL in the Silverado aquifer. Similar to the Central Basin, shallow occurrences of nitrate in the West Coast Basin may be attributable to local surface recharge impacted by agricultural activities prior to extensive land development.

Figure 3.10 presents CDPH water quality data for nitrate in production wells across the CBWCB for the period spanning water years 2010-13. One Central Basin production well, specifically located in the Los Angeles Forebay, contained nitrate above the MCL. The nitrate MCL was not exceeded in any production well in the West Coast Basin during water years 2010-13.

3.1.6 Trichloroethylene (TCE)

TCE is a solvent used in metal degreasing, textile processing, and dry cleaning. In addition to its multiple acute health effects, it is also classified as a probable human carcinogen. The MCL for TCE in drinking water is 5 µg/L. If present in water, it can be removed easily by common treatment processes, including air stripping or granular activated carbon.

TCE (**Figure 3.11**) was detected below the MCL in 29 out of 32 (91%) WRD nested monitoring well locations in the Central Basin. In the West Coast Basin, TCE detected was below the MCL in 18 out of 19 (95%) nested monitoring wells. No CBWCB nested well

had a detectable TCE concentration in the Silverado Aquifer.

Figure 3.12 presents CDPH water quality data for TCE in production wells across the CBWCB for the period spanning water years 2010-13. In the Central Basin, TCE was not detected in 193 of 246 (78%) of the production wells that were tested in the Central Basin. Of the 53 production wells that had detectable TCE levels, 16 wells had concentrations above the MCL. Wells impacted by TCE are generally located in the northern portion of the Central Basin, within or near the Montebello and Los Angeles Forebays. In the West Coast Basin, TCE was not detected in any West Coast Basin production well during water years 2010-13.

3.1.7 Tetrachloroethylene (PCE)

PCE (also known as tetrachloroethylene, perc, perclene, and perchlor) is a solvent used commonly in the dry cleaning industry, as well as in metal degreasing and textile processing. Like TCE, PCE is a probable human carcinogen. The MCL for PCE in drinking water is 5 µg/L. Like TCE, PCE can be easily removed from water using common treatment processes.

During water year 2012-13, PCE (**Figure 3.13**) was detected at 9 out of 32 (28%) nested well locations. Two detections, both below the MCL, were in a Silverado zone. PCE was detected above the MCL at one nested well location below the Silverado zone in the Central Basin. PCE was not detected in any nested wells in the West Coast Basin during water year 2012-13.

Figure 3.14 presents CDPH water quality data for PCE in production wells across the CBWCB for years 2010-13. In the Central Basin, PCE was not detected in 191 out of the 246 (78%) production wells that were tested. Of the 55 production wells that had detectable PCE levels, 16 wells had concentrations above the MCL. Production wells with detectable PCE concentrations are primarily located within the vicinity of the Los Angeles and Montebello Forebays and extend southwestward and southward into the Central Basin Pressure Area. PCE was not detected in any West Coast Basin production wells.

3.1.8 Arsenic

Arsenic is an element that occurs naturally in the earth's crust and accordingly, there are natural sources of arsenic, including weathering and erosion of rocks, deposition of arsenic in water bodies, and uptake of the metal by animals and plants. Consumption of food and water are the major sources of arsenic exposure for the majority of U.S. citizens. Over 90% of commercial arsenic is used as a wood preservative in the form of chromate copper arsenate to prevent dry rot, fungi, molds, termites, and other pests. People may also be exposed from industrial applications, such as semiconductor manufacturing, petroleum refining, animal feed additives, and herbicides. Arsenic is classified as a known human carcinogen by the United States Environmental Protection Agency (USEPA), and also causes other health effects, such as high blood pressure and diabetes. The CDPH established an MCL of 10 µg/L for arsenic.

Figure 3.15 presents water quality data for arsenic in WRD nested monitoring wells during water year 2012-13. Arsenic concentrations greater than the MCL in the Central Basin were detected at 10 out of 32 (31%) nested well locations and three (9%) Central Basin wells had arsenic concentrations that exceeded the MCL in the Silverado Aquifer. In the West Coast Basin, arsenic was detected above the MCL at 8 out of 19 (42%) nested monitoring well locations, five (26%) were in a Silverado zone.

Figure 3.16 presents CDPH water quality data for arsenic in production wells across the CBWCB for the period spanning water years 2010-13. Eleven out of 236 (5%) production wells in the Central Basin contained arsenic concentrations above the MCL. Arsenic did not exceed the MCL in any of the West Coast Basin production wells.

3.1.9 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. Under certain conditions, perchlorate is also reported to occur naturally in groundwater (Trumpolt, 1995). When ingested, it can inhibit the proper uptake of iodide by the thyroid gland, which causes a decrease in

hormones for normal growth and development and normal metabolism. In October 2007, the CDPH established an MCL of 6 µg/L for perchlorate.

Figure 3.17 presents perchlorate water quality data for WRD nested monitoring wells during water year 2012-13. In the Central Basin, perchlorate was detected at 16 nested monitoring well locations; six of these detections were in the Silverado zone, all below the MCL. In the West Coast Basin, perchlorate was detected in six nested monitoring wells, with two nested wells containing concentrations above the MCL. Perchlorate was not detected in the Silverado zone of any nested monitoring well location in the West Coast Basin.

Figure 3.18 presents CDPH water quality data for perchlorate in production wells across the CBWCB for the period spanning water years 2010-13. In the Central Basin, 14 out of 247 (6%) production wells had detectable perchlorate, with three production wells containing perchlorate above the MCL. Perchlorate was not detected in any West Coast Basin production wells that were sampled.

3.1.10 Hexavalent Chromium

Hexavalent chromium or chromium-6 and trivalent chromium or chromium-3 are two forms of the metal chromium that can occur naturally in groundwater. Together, these forms of chromium are designated “total chromium”. The MCL for total chromium is 50 µg/L. Both forms of chromium occur naturally in groundwater and are also introduced to soil and groundwater through disposal practices from commercial and industrial operations. Only hexavalent chromium is considered to pose health risks. It has been known to increase cancer risk when inhaled and recently shown to increase cancer risk if ingested. The federal government and California currently regulate total chromium, chromium-3 and chromium-6 combined, with MCLs of 100 micrograms per liter (µg/L) and 50 µg/L, respectively.

On August 23, 2013, California Department of Public Health (CDPH) proposed an MCL of 10 µg/L for chromium-6. According to CDPH, the completion of the rulemaking

process may take up to 12 months after the proposal. In the absence of any major delays, an enforceable MCL is anticipated to be established in 2014. Once the rulemaking process for chromium-6 is completed, California will be the first in the nation to regulate hexavalent chromium in drinking water. As a result of the recent regulatory activities, WRD conducted basinwide baseline sampling for hexavalent chromium to assess the general distribution and potential threat of both the natural and commercial/industrial occurrence and distribution of this emerging chemical of concern.

Figure 3.19 shows hexavalent chromium concentrations in WRD nested monitoring wells in the CBWCB. In the Central Basin, 29 out of 32 (91%) nested well locations had no detectable hexavalent chromium or detections less than 5 µg/L in all zones. Concentrations greater than 5 µg/L were limited to shallow zones at three nested well locations in or near the Los Angeles Forebay. In the West Coast Basin, hexavalent chromium was detected at less than 5 µg/L or below the detection limit in 18 out of 19 (95%) nested monitoring well locations. Only one nested well location in the West Coast Basin had hexavalent chromium detected between 5 and 10 µg/L, in the shallowest zone.

Figure 3.20 shows hexavalent chromium in CBWCB production wells from limited sampling conducted during water years 2010-13. In the Central Basin, hexavalent chromium was not detected in 52 of the 66 (79%) production wells that were tested. Of the 14 Central Basin production wells that had detectable hexavalent chromium levels, 10 wells had concentrations between the detection limit and 5 µg/L, and four wells were between 5 and 10 µg/L. Hexavalent chromium was not detected in any of the 10 production wells tested in the West Coast Basin.

3.2 QUALITY OF REPLENISHMENT WATER

This section discusses water quality data for key water quality constituents in CBWCB replenishment water and local surface water. Although numerous constituents are monitored, the constituents discussed and reported here are the ones found to be most prevalent at elevated levels or are of current regulatory interest. The data are classified

according to their sources. The key water quality parameters of this discussion are the same as those discussed for the WRD nested monitoring wells: TDS, iron, manganese, nitrate, chloride, TCE, PCE, arsenic, perchlorate, and hexavalent chromium. Monitoring 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.

3.2.1 Quality of Imported Water

Surface water is imported by the Metropolitan Water District of Southern California (MWD) to the CBWCB from the Colorado River and from Northern California via the State Water Project for potable supply and for groundwater recharge in the CBWCB. Currently, treated imported water and advanced treated recycled water are injected the three seawater intrusion barriers. Treated imported water meets all drinking water standards and thus, is suitable for direct injection. Average water quality data for treated imported water are presented in **Table 3.3**. Untreated imported water (“raw water”) is used for recharge at the Montebello Forebay Spreading Grounds.

In 2011, the average TDS concentration of untreated Colorado River water was 571 mg/L and the average TDS concentration of untreated water from the State Water Project was 278 mg/L.

Average concentrations of nitrate were below detection limits in untreated Colorado River water and the average nitrate concentration in water from the State Water Project was 0.5 mg/L. Recently and historically, both Colorado River and State Water Project nitrate concentrations have remained far below the MCL.

The average iron and manganese concentrations in untreated Colorado River water were below the detection limit. The average iron concentration in water from the State Water Project was below the detection limit and the manganese concentration was 23 µg/L, which is below the SMCL of 50 µg/L. Both Colorado River and State Water Project iron and manganese concentrations have historically been below the SMCL.

The average chloride concentrations in water from the Colorado River and State Water Project have not changed significantly over the past several years. State Water Project and Colorado River chloride concentrations have historically been below the SMCL of 500 mg/L for chloride.

According to the Metropolitan Water District of Southern California (MWD), TCE and PCE, perchlorate, and hexavalent chromium have not been detected in water from the Colorado River or State Water Project during calendar year 2012.

3.2.2 Quality of Recycled Water

Recycled water is used for groundwater recharge in the CBWCB through spreading grounds percolation and seawater barrier injection. In the Montebello Forebay, tertiary-treated recycled water from the County Sanitation Districts of Los Angeles County (CSDLAC) 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 to recharge underlying aquifers. The effluent from these WRPs is carefully controlled and monitored, as required by permits and other regulations, and typically shows little water quality variation over time. Average water quality data for the effluent from these WRPs is shown in **Table 3.3**. All constituents listed have remained stable over recent water years. Furthermore, TCE, PCE, and perchlorate have either not been detected or have been detected well below their respective MCLs in recycled water from the four WRPs.

Currently, both treated imported water and advanced treated recycled water produced by the West Basin Municipal Water District (WBMWD) Edward C. Little Water Recycling Facility (WRF) are injected at the West Coast Basin Barrier to prevent the intrusion of seawater and replenish the groundwater basin. Treatment processes at the Edward C. Little WRF includes microfiltration, reverse osmosis, ultraviolet light, advanced oxidation with hydrogen peroxide, ozone, and chemical stabilization. The advanced treated recycled water complies with all drinking water standards and thus, is suitable for direct injection. The Edward C. Little WRF was recently expanded and it is expected that advanced treated

recycled water will fully replace imported water for injection at the West Coast Basin Barrier in the near future. **Table 3.3** presents average water quality data for the advanced treated recycled water produced by the Edward C. Little WRF.

The Alamitos Gap Seawater Intrusion Barrier currently receives both treated imported water and advanced treated recycled water produced by WRD's Leo J. Vander Lans Advanced Water Treatment Facility (Vander Lans AWTF) for injection. The Vander Lans AWTF treats disinfected tertiary effluent from the CSDLAC Long Beach Water Reclamation Plant using microfiltration, reverse osmosis, and ultraviolet light. The advanced treated recycled water meets drinking water quality standards and other stringent regulations for direct injection into the subsurface. The Vander Lans AWTF is currently being expanded (and advanced oxidation through the use of peroxide will be added to the treatment train) and it is expected that advanced treated recycled water will fully replace imported water for injection at the Alamitos Gap Seawater Intrusion Barrier by late 2014. **Table 3.3** presents average water quality data for the advanced treated recycled water produced by the Vander Lans AWTF.

The City of Los Angeles Terminal Island Water Reclamation Plant/Advanced Water Treatment Facility (TIWRP) produces advanced treated recycled water using microfiltration, reverse osmosis, and disinfection with chlorine for injection at the Dominguez Gap Seawater Intrusion Barrier. This water meets drinking water quality standards and other stringent regulations for injection into the subsurface. The TIWRP will be expanded (and ozonation will be added to the treatment train) and it is anticipated that by water year 2018-19, advanced treated recycled water will fully replace imported water for injection. **Table 3.3** presents average water quality data for the advanced treated recycled water produced by the TIWRP.

3.2.3 Quality of Stormwater

Stormwater infiltrates the subsurface to varying degrees throughout the CBWCB. It is also intentionally diverted from the major storm channels and used for groundwater recharge along with imported and recycled water at the Montebello Forebay Spreading Grounds.

Routine stormwater quality analyses are performed by LACDPW and other entities. Average stormwater quality data provided by LACDPW for water year 2012-13 are presented on **Table 3.3**. The average TDS, manganese, nitrate, chloride, arsenic, TCE, PCE, and perchlorate concentrations in stormwater are relatively low. Metals, including iron and lead, exceeded drinking water standards. However, due to the elevated turbidity of the stormwater samples, it is possible that sediment suspended in the samples were dissolved by the nitric acid used as a preservative, and caused skewing of the data.

3.3 MINERAL CHARACTERISTICS OF GROUNDWATER IN THE CBWCB

Major minerals data obtained from the WRD nested monitoring wells were used to characterize groundwater of discrete vertical zones (**Table 3.4**). Research by the USGS led to 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 results that do not fall into one of the three major groups and are thus classified separately as Group D.

Groundwater from Group A likely represents recent recharge water containing a significant percentage of imported water. Group B represents older native groundwater replenished by natural local recharge. Group C represents groundwater impacted by seawater intrusion or connate saline brines. **Table 3.4** lists the groundwater group for each WRD nested monitoring well. Comparison of groundwater groups with well locations indicates that, in general, Group A groundwater is found at and immediately downgradient from the Montebello Forebay Spreading Grounds in all but the deepest zones. Group B groundwater is found farther down the flow path within the Central Basin and inland of the West Coast Basin Seawater Intrusion Barrier. Group C groundwater is generally found near the coastlines or in deeper zones. Several wells, grouped as “Other” on **Table 3.4**, exhibit a chemical character range different from Groups A, B, or C and indicate unique waters not characteristic of the dominant flow systems in the basins. The USGS is conducting ongoing

research on trace element isotopes in water from these wells to identify their hydrogeologic source(s).

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

SECTION 4

SALT AND NUTRIENTS IN GROUNDWATER

In February 2009, the State Water Resources Control Board (SWRCB) adopted Resolution No. 2009-0011, which established a statewide Recycled Water Policy (Policy). This Policy encourages increased use of recycled water and local stormwater for groundwater recharge across the State. It also requires local entities to develop a Salt and Nutrient Management Plan (SNMP) for each groundwater basin in California by May 2014 to monitor groundwater quality and any impact due to increased recycled water and stormwater recharge. Once the SNMP is approved by the Regional Water Quality Control Board, a Basin Plan Amendment will be subsequently adopted and an SNMP monitoring program will be implemented.

A SNMP Workplan was jointly prepared by the CBWCB stakeholders and approved by the LARWQCB in December 2011. The CBWCB stakeholders are currently preparing the draft SNMP and it is anticipated to be submitted to the LARWQCB for their review by April 2014. Additional information regarding the CBWCB SNMP can be found at <http://www.wrd.saltnutrient.com>.

The objective of the SNMP is to manage salts and nutrients from all sources "... on a basin-wide or watershed-wide basis in a manner that ensures attainment of water quality objectives and protection of beneficial uses." Future groundwater quality and assimilative capacity were calculated based on predicted salt and nutrient loading through 2025 in the CBWCB. Accordingly, current and proposed projects through 2025 were identified and used to develop strategies to manage salt and nutrient loading. Ultimately, the SNMP will include the following:

- Stormwater and Recycled Water Use/Recharge Goals and Objectives,
- Characterization of the Hydrogeologic Conceptual Model/Water Quality,
- Estimation of Current and Future Salt and Nutrient Loading,
- A Basin-Wide Water Quality Monitoring Plan,
- Estimation of Salt and Nutrient Assimilative Capacity,
- An Anti-degradation Analysis,

- Implementation Measures to Manage Salt and Nutrient Loading, and
- California Environmental Quality Act (CEQA) Analysis of the SNMP.

The RGWMP was used to develop the SNMP monitoring program. The groundwater data evaluated in the annual RGWMRs provide an additional annual assessment of salt and nutrients in groundwater. In addition to the water quality maps generated and discussed in Section 3, historical trend graphs at key monitoring well locations, as described in the following sections, were used to assess salt and nutrient concentrations in groundwater.

4.1 SALT AND NUTRIENT MONITORING LOCATIONS

The RGWMP is a comprehensive program that was developed to monitor the health of the CBWCB. As discussed in the SNMP, TDS, chloride, and nitrate were identified as the most appropriate indicators of salt and nutrients in the CBWCB. These constituents, as well as other constituents of concern identified in the SNMP, are monitored in the WRD nested monitoring wells along with production wells located throughout the CBWCB.

As part of the SNMP monitoring program, 12 key monitoring well locations in the CBWCB were selected to evaluate past and current salt and nutrient concentrations in groundwater with respect to applicable water quality objectives (WQOs). As established in the Basin Plan, the WQO for TDS in the Central Basin and West Coast Basin is 700 mg/L and 800 mg/L, respectively; the WQO for chloride in the Central Basin and West Coast Basin is 150 mg/L and 250 mg/L, respectively; and the MCL/WQO in both basins for nitrate is 10 mg/L.

In accordance with the Recycled Water Policy, the 12 existing nested well locations are in the most critical areas of the basins, particularly their proximity to water supply wells and groundwater recharge projects that utilize recycled water, including the seawater intrusion barriers (Alamitos Gap Barrier, Dominguez Gap Barrier, and West Coast Basin Barrier) and the Montebello Forebay Spreading Grounds. There are three nested well locations in the Montebello Forebay, one in the Los Angeles Forebay, four in the Central Basin

Pressure Area, and four in the West Coast Basin. Monitoring locations in the Montebello and Los Angeles Forebays target groundwater where connectivity with adjacent surface waters is expected.

The twelve key nested well locations are shown on Figure 1.3. These locations include 65 individual monitoring zones, screened in specific CBWCB aquifers. The depths and aquifer designation for these key monitoring wells are provided in Table 1.1. WRD is the entity, designated by the SWRCB, responsible for collecting TDS, chloride, and nitrate samples (on a semi-annual basis) from these nested wells and as part of the SNMP monitoring program, will be submitting these data to SWRCB's online GeoTracker database.

4.2 SALT AND NUTRIENT MONITORING RESULTS AND EVALUATION

Concentrations of salt and nutrients have been and continue to be closely monitored in all WRD nested monitoring wells and purveyors' production wells and results are discussed in Section 3. Concentrations of TDS (**Figure 3.1**), chloride (**Figure 3.7**), and nitrate (**Figure 3.9**) for all WRD nested wells sampled during water year 2012-13 are shown on maps and summarized along with other monitored constituents identified in **Tables 3.1** and **3.2**. TDS, chloride, and nitrate concentrations in production wells, sampled during water years 2010-13 are presented on maps (**Figures 3.2., 3.8, and 3.10** respectively). Trends for TDS and chloride concentrations at the 12 key well locations discussed in Section 4.1 are plotted on graphs and compared to SMCLs and WQOs (**Figures 4.1** through **4.12**). Nitrate generally has not been detected in the monitoring wells or has been detected significantly below the MCL/WQO and thus, trend graphs were not prepared, but nitrate will continue to be monitored and reported in Section 3 of the RGWMRs.

In the Montebello Forebay, TDS and chloride concentration trends for the key well locations Rio Hondo #1, Pico #2, and Norwalk #2 are presented on **Figures 4.1** through **4.3**, respectively. TDS and chloride concentrations have historically been and remain below the SMCLs and WQOs. Several middle zones at Rio Hondo #1 and Pico #2 show slight increasing trends for TDS and chloride, while concentrations in shallow zones fluctuate

more and have decreased historically. Otherwise, trends do not indicate significant increasing salt concentrations in the Montebello Forebay.

In the Los Angeles Forebay, the key well is Huntington Park #1 (4 zones) and TDS and chloride concentration trend graphs are shown on **Figure 4.4**. The deeper two zones of this well show stable trends for TDS and chloride below the SMCLs and WQOs. The upper two zones may indicate slight increases in TDS and chloride concentrations over the past four or five years, but are still below the SMCL. In the upper two zones chloride concentrations are below the WQO, but TDS concentrations exceed the WQO of 700 mg/L.

In the Central Basin Pressure Area, key wells include South Gate #1 (5 zones), Willowbrook #1 (4 zones), Long Beach #6 (6 zones), and Seal Beach #1 (7 zones) and TDS and chloride trends are shown on **Figures 4.5 through 4.8**, respectively. At South Gate #1, the four deeper zones show TDS and chloride concentrations at relatively consistent values below the SMCL and WQO. TDS and chloride concentrations in South Gate #1 Zone 5 have increased somewhat since initial sampling but are relatively stable and are generally below both the WQO and SMCL. At all 4 zones Willowbrook #1 and the upper four zones at Long Beach #6, TDS and chloride concentrations are below the SMCL and WQO. In the two deepest zones of Long Beach #6, TDS is typically detected at the WQO of 700 mg/L, while chloride concentrations remain significantly below the SMCL and WQO. At Seal Beach #1, the deeper six zones are all below the TDS and chloride WQOs and SMCLs. Zone 7, the shallowest zone, indicates TDS and chloride concentrations above the WQOs and SMCLs.

In the West Coast Basin, key wells include PM-4 Mariner (4 zones), Carson #1 (4 zones), Manhattan Beach #1 (7 zones) and Wilmington #2 (5 zones) and TDS and chloride trends are presented on **Figures 4.9 through 4.12**, respectively. At PM-4 Mariner Zones 1, 3, and 4 show TDS and chloride at relatively consistent concentrations below the SMCL and WQO. However in zone 2 at PM-4 Mariner Zone 2 shows, TDS and chloride concentrations are well above the SMCL and WQO and have steadily increased since monitoring began around 1997. This is attributed to historical seawater intrusion prior to the construction of West Coast Basin Seawater. At the Carson #1, the three deeper zones

show TDS and chloride concentrations relatively stable below the SMCL and WQO. In zone 4 at Carson #1 TDS and chloride concentrations in Carson #1 Zone 4 are decreasing and below the SMCL and WQO. At Manhattan Beach #1, groundwater in this area indicates impacts from seawater intrusion. While this well was only recently constructed and thus only sampled three times over the past two years, TDS in 5 of the 7 zones exceed the WQO and SMCL and four zones exceed the chloride WQO and SMCL. Additional sampling at Manhattan Beach #1 should allow for concentration trends to be more clearly identified. At Wilmington #2, TDS in Zones 1 and 3 have historically been below the WQO and SMCL, while Zone 2 has been consistently above the WQO and SMCL. TDS and chloride in Zone 4 were initially was above the WQO and SMCL, but have steadily decreased since and are now below the WQO and SMCL, due to the implementation measures discussed in Section 4.3. TDS and chloride in Zone 5 are much higher than the WQO and SMCL; however, they have steadily decreased and are currently at concentrations less than 50% of those observed during the first years of sampling.

4.3 IMPLEMENTATION MEASURES TO MANAGE SALT AND NUTRIENT LOADING

As summarized in the previous section, overall TDS and chloride concentrations generally are not increasing at the 12 key nested monitoring locations in the CBWCB. While a few individual zones show increasing trends, a comparable number show decreasing trends. Notably, TDS and chloride concentrations in the two shallowest zones at nested well location Rio Hondo #1 and the three shallowest zones at Pico #2, each of which is beneath and adjacent to the Montebello Forebay recharge basins, fluctuate somewhat but show decreasing trends since 1998. At the key well location in the Los Angeles Forebay, the shallow zones have variable TDS concentrations at and just above the WQO, but deeper zones do not show increasing TDS levels. In the Central Basin Pressure Area, TDS and chloride concentrations in the shallowest zone at key well location South Gate #1 are increasing, but the four lower zones are stable. The loading caused by shallow zone increases are possibly due to localized surface infiltration rather than artificial replenishment. Key nested monitoring well locations near the coast, including PM-4

Mariner, Manhattan Beach #1, and Seal Beach #1, had zones that show increasing TDS and chloride concentration trends, that can be attributed to historical seawater intrusion.

As discussed in the SNMP, TDS and chloride concentrations in the Central Basin are not expected to exceed WQOs in the future and current and proposed projects in the basin are not expected to increase salt and nutrient concentrations above the available assimilative capacity. Some of these projects in the Central Basin include the increased use of advanced treated recycled water for injection at the Alamitos Gap Seawater Intrusion Barrier and the increased use of recycled water at the Montebello Forebay Spreading Grounds through the implementation of the Groundwater Reliability Improvement Project (GRIP).

In the West Coast Basin, average TDS and chloride concentrations for the entire basin exceed WQOs due to historical seawater intrusion. However, these concentrations are decreasing and are anticipated to achieve WQOs in the future due to implementation measures such as the increased use of advanced treated recycled water for injection at the West Coast Basin and Dominguez Gap Seawater Intrusion Barriers and the continued operation of the desalters.

Nitrate concentrations in the CBWCB remain low and are not expected to increase above the MCL/WQO in the future. Overall, the data show that salt and nutrient concentrations in groundwater are stable as a result of past and current groundwater management practices. Based on the existing water quality of the CBWCB and the future groundwater quality as estimated from the SNMP analysis, existing and planned implementation measures appear adequate to manage salt and nutrient loading on a sustainable basis.

SECTION 5

SUMMARY OF FINDINGS

This Regional Groundwater Monitoring Report was prepared by WRD to provide a comprehensive review of groundwater conditions in the CBWCB during water year 2012-13. 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 CBWCB. Artificial replenishment water sources used by WRD include imported water supplied by the MWD, tertiary-treated recycled water produced by the CSDLAC, and advanced treated recycled water produced by WBMWD, the City of Los Angeles, and WRD.
- Groundwater levels (heads) are monitored continuously in the CBWCB throughout the year. The WRD nested monitoring wells show clear, significant differences in groundwater elevations between the various aquifers. The water level differences in these nested wells reflect both hydrogeologic and pumping conditions in the CBWCB. Vertical head differences between 1 and 90 feet occur between zones above and within the producing aquifers. The greatest head differences between aquifers tend to occur in the southern area (Long Beach) of the Central Basin and the inland, eastern areas (Gardena and Carson) of the West Coast Basin, while the smallest differences occur in the recharge area of the Montebello Forebay, and the southern area (Torrance) of the West Coast Basin which has merged aquifers.
- Hydrographs and groundwater elevations measured in basinwide nested monitoring wells and key production wells indicate overall decreases across most of the Central Basin during water year 2012-13. Water levels decreased a maximum of 20 feet and on average 12.5 feet in the unconfined Montebello Forebay, and remained stable or decreased a maximum of 5 feet across the unconfined Los Angeles Forebay and western portion of the Central Basin Pressure Area. Groundwater levels across most of the Central Basin Pressure Area generally decreased 5 to 10 feet during water year 2012-13. In the West Coast Basin, water levels did not change significantly over most

of the coastal areas during water year 2012-13; there were increases up to 11 feet in the Carson/Dominguez Gap areas, and decreases to a maximum of 14 feet in the Inglewood/Gardena areas. West Coast Basin water levels increased an average of 2 feet. The average decrease in water levels in the Central Basin was 7.5 feet.

- Based on data obtained from WRD nested monitoring wells during water year 2012-13, the water quality of key constituents in groundwater differs both vertically between aquifers and horizontally across the CBWCB.
- TDS concentrations in WRD nested monitoring wells and purveyor production wells located in the Central Basin are relatively low, while those in the West Coast Basin are elevated in certain portions, primarily the coastal areas from Redondo Beach to LAX and the Inglewood and Dominguez Gap areas. The elevated TDS concentrations may be caused by seawater intrusion, connate brines, or possibly oil field brines.
- The SMCL for iron is 0.3 mg/L. Iron generally is present at low levels in most WRD nested monitoring wells. In the Central Basin, concentrations were below the SMCL in the Silverado Aquifer at 29 of 32 (91%) nested well locations. In the West Coast Basin, iron concentrations were below the SMCL in the Silverado Aquifer at 17 of 19 (90%) nested well locations. Iron was detected below the SMCL in 213 of 238 (89%) production wells in the Central Basin and 23 out of 32 (72%) production wells in the West Coast Basin.
- The SMCL for manganese is 50 µg/L. Manganese is a naturally-occurring groundwater contaminant and negatively impacts a number of wells in the CBWCB. Manganese concentrations exceed the SMCL in the Silverado Aquifer at 10 out of 32 (31%) nested monitoring well locations in the Central Basin and at 11 out of 19 (58%) nested well locations in the West Coast Basin. Manganese concentrations exceed the SMCL in 45 out of 237 (19%) production wells in the Central Basin and 15 out of 33 (45%) production wells sampled in the West Coast Basin.
- Chloride concentrations are reasonably low in Central Basin monitoring wells and production wells, and in wells within the inland areas of the West Coast Basin. Some coastal areas of the West Coast Basin are impacted by seawater intrusion and thus, have high chloride levels in groundwater.
- The MCL/WQO for nitrate is 10 mg/L. Nitrate concentrations in WRD nested

monitoring wells in the CBWCB are generally below the MCL. The few nested wells that have nitrate concentrations approaching or exceeding the MCL tend to be limited to the uppermost zone at a given location and are likely due to localized surface recharge. Nitrate concentrations above the MCL were not observed in the Silverado Aquifer. CDPH data indicates that one Central Basin production well had nitrate levels over the MCL. No West Coast Basin production wells contained nitrate at concentrations greater than the MCL.

- The MCL for TCE in drinking water is 5 µg/L. TCE was below the MCL in 29 out of 32 (91%) nested monitoring well locations in the Central Basin and 18 out of 19 (95%) nested well locations in the West Coast Basin. CDPH data indicate that TCE was detected in 53 production wells in the Central Basin during the period spanning water years 2010-13; 16 out of the 53 (30%) detections exceed the MCL. In the West Coast Basin, TCE was not detected in any production wells.
- The MCL for PCE in drinking water is 5 µg/L. PCE was not detected above the MCL in the Silverado zone at any nested monitoring well location in the Central Basin or West Coast Basin. CDPH data indicate that PCE was detected in 55 production wells in the Central Basin during the period spanning water years 2010-13; 16 out of the 55 (29%) detections exceed the MCL. PCE was not detected in any of the West Coast Basin production wells.
- The MCL for arsenic, a naturally-occurring mineral, in drinking water is 10 µg/L. Arsenic concentrations greater than the MCL were found at 10 out of 32 (31%) nested monitoring well locations in the Central Basin and 8 out of 19 (42%) nested well locations in the West Coast Basin. During the water year 2010-13 period, 11 out of 236 (5%) production wells tested in the Central Basin had arsenic concentrations above the MCL. Arsenic was not detected above the MCL in any West Coast Basin production wells.
- The MCL for perchlorate in drinking water is 6 µg/L. In the Central Basin, perchlorate was detected at 16 nested monitoring well locations at concentrations below the MCL; six of the detections were in the Silverado zone. In the West Coast Basin, perchlorate was detected at six nested monitoring well locations, with two nested wells above the MCL. Perchlorate was not detected in the Silverado zone of any nested monitoring

well location in the West Coast Basin. Fourteen out of 247 (6%) production wells sampled had detectable perchlorate in the Central Basin; three production wells had perchlorate concentrations above the MCL. Perchlorate was not detected in any of the West Coast Basin production wells.

- Hexavalent chromium can occur naturally in groundwater and/or be introduced through industrial and commercial activities. It is an emerging contaminant of concern in groundwater and the State of California is in the process of establishing an MCL for hexavalent chromium. In anticipation of this new regulatory limit, WRD collected and analyzed basinwide groundwater samples from its nested monitoring well network for hexavalent chromium. Relatively low hexavalent chromium concentrations (below 5 µg/L) were detected at many of the nested monitoring wells. Concentrations above 5 µg/L were limited to the shallowest zones at three Central Basin and one West Coast Basin nested well location(s). Production wells sampled in the CBWCB during the water year 2010-13 period contained no detectable hexavalent chromium in 52 out of 66 (79%) wells. Fourteen Central Basin production wells had detectable hexavalent chromium, 10 of which had concentrations between the detection limit and 5 µg/L, and four wells had concentrations between 5 and 10 µg/L. Hexavalent chromium was not detected in any of the 10 production wells tested in the West Coast Basin.
- The water quality of key constituents in untreated imported water recharged at the Montebello Forebay Spreading Grounds and treated imported water injected at the seawater barriers remains in compliance with regulatory limits. Average TDS, hardness, iron, and manganese concentrations in imported water used for recharge do not exceed their respective MCLs. Meanwhile, TCE and PCE were not detected in the untreated water from the Colorado River or State Water Project, but perchlorate was detected below the MCL in untreated Colorado River water and was not detected in untreated water from the State Water Project.
- The water quality of key constituents in recycled water used for recharge at the Montebello Forebay Spreading Grounds and injection at the seawater intrusion barriers remains in compliance to regulatory limits and is monitored regularly to ensure its safe use.
- Stormwater samples are collected and analyzed for various water quality parameters

by the LACDPW and other entities in the CBWCB. Available data from LACDPW for water year 2012-13 show that average TDS and other constituent concentrations in stormwater are lower than most other sources of replenishment water and other constituent concentrations confirm that stormwater is a good replenishment source.

- A total of 65 WRD nested groundwater monitoring wells at 12 locations throughout the CBWCB were designated for salt and nutrient (specifically, TDS, chloride, and nitrate) sampling and reporting as part of the SNMP monitoring program. Based on water quality maps and trend graphs that were evaluated in this report, overall TDS and chloride concentrations generally are not increasing at the 12 key nested monitoring locations and nitrate concentrations remain well below the MCL. In the Central Basin, average TDS and chloride concentrations do not exceed WQOs. In the West Coast Basin, average TDS and chloride concentrations exceed WQOs due to historical seawater intrusion. However, these concentrations are decreasing and are anticipated to achieve WQOs in the future due to past and current groundwater management practices.
- As shown by the data presented herein, groundwater in the CBWCB is of generally good quality and is suitable for use by the pumpers in the District, the stakeholders, and the public. Groundwater from localized areas with marginal to poor water quality can still be utilized but 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 current water year 2013-14 are listed below.

- WRD will continue to maximize recycled water use at the Montebello Forebay Spreading Grounds without exceeding regulatory limits; recycled water is a high quality, reliable, and relatively low-cost replenishment water source. Due to the scarcity of discounted imported replenishment water deliveries from MWD, WRD developed the Water Independence Now (WIN) initiative, which includes increasing the safe use of recycled water for groundwater recharge and reducing reliance on imported water supplies.
- WRD will continue to maximize recycled water use at the West Coast Basin Seawater Intrusion Barrier and will promote maximum permitted recycled water injection at the Dominguez Gap and Alamitos Gap Seawater Intrusion Barriers. Extensive groundwater monitoring of these major recycled water projects will continue to be performed by WRD to comply with permit conditions and applicable regulatory requirements and to track subsurface movement of the recycled water.
- WRD will continue to monitor the quality of replenishment water sources to ensure the CBWCB are being recharged with high-quality water.
- WRD continues refining the regional understanding of groundwater occurrence, movement, and quality. Water levels will continue to be recorded using automatic dataloggers to monitor groundwater elevation differences throughout the year. Conductivity sensors are being utilized at selected nested monitoring wells to track water quality changes and supplement the automated water level data. Telemetry technology is being tested to send real-time water level data to WRD from remote locations with a goal of automatically posting the information onto the WRD website.

- WRD is currently expanding its network of nested monitoring wells to get a better understanding of groundwater levels and quality. Two new wells have been completed in the past year, and three additional wells are scheduled to be completed over the next year. Each year, WRD evaluates the need to fill data gaps in water level data, water quality data, and the hydrogeologic conceptual model with additional geologic data provided from drilling, construction, and monitoring of the nested wells.
- WRD will continue to sample groundwater from nested monitoring wells, and analyze the samples for general water quality constituents. In addition, the focus will continue on constituents of interest to WRD, the pumpers, and other stakeholders, such as TCE, PCE, arsenic, perchlorate, and hexavalent chromium. Emerging chemicals of concern which have not been comprehensively monitored in the past could include 1,2,3-trichloropropane, pesticides, n-nitrosodimethylamine (NDMA), 1,4-dioxane, pharmaceuticals and personal care products, and other emerging chemicals of concern.
- WRD will be working on refining the hydrogeologic conceptual model of the CBWCB using data from the RGWMP and other data to improve the framework for understanding the dynamics of the groundwater system and use as a planning tool.
- WRD will continue efforts under its Groundwater Contamination Prevention Program in order to minimize or eliminate threats to groundwater supplies. The Groundwater Contamination Prevention Program includes several ongoing efforts, including the Central Basin and West Coast Basin Groundwater Contamination Forum with key stakeholders that include the Environmental Protection Agency, California Department of Toxic Substances Control, Los Angeles Regional Water Quality Control Board, California Department of Public Health, United States Geological Survey, and various cities and other water purveyors. Stakeholders meet regularly and share data on contaminated groundwater sites within the District. WRD acts as the meeting coordinator and data repository/distributor, helping stakeholders to characterize the extent of contamination to identify pathways for contaminants in shallow aquifers to reach deeper drinking water aquifers and develop optimal methods for remediating contaminated groundwater. With input from the Forum members, WRD has developed a list of high-priority contaminated groundwater sites within the District. The list currently includes 46 sites located throughout the CBWCB.

- WRD will continue to be proactively involved in the oversight of the most significant contaminated sites that threaten CBWCB groundwater resources including the ongoing regional perchlorate investigation in the Los Angeles Forebay, the Omega Chemical Superfund Site in the eastern portion of the Central Basin, and others.
- WRD will continue to fund the Safe Drinking Water Program to address VOC impacted groundwater, especially by PCE and TCE in the CBWCB.
- Consistent with WRD's mission to provide, protect, and preserve high quality groundwater and as required by the State's Recycled Water Policy, a Salt and Nutrient Management Plan (SNMP) is being developed by the CBWCB stakeholders and a draft is anticipated to be submitted to LARWQCB in April 2014. Once the SNMP is approved by LARWQCB, a Basin Plan Amendment will be subsequently adopted and the SNMP monitoring program will be implemented. Based on the existing water quality of the CBWCB and results from the SNMP analysis, salt and nutrient loading to groundwater has not been shown to be a concern and salt and nutrient concentrations overall in groundwater are either stable or improving due to past and current groundwater management practices. Existing and planned implementation measures are protective of groundwater quality and beneficial uses and the increased use of recycled water in the CBWCB is consistent with the goals of the Recycled Water Policy and necessary to ensure a sustainable water supply.
- On November 4, 2009 the State Legislature amended the Water Code with SBx7-6, mandating a statewide groundwater elevation monitoring program to track seasonal and long-term trends in California's groundwater basins. In accordance with this amendment DWR developed the California Statewide Groundwater Elevation Monitoring (CASGEM) program. In October 2011, WRD was designated the agency responsible for collecting and reporting CBWCB groundwater level data to CASGEM. Through the RGWMP, WRD will continue to collect CBWCB groundwater level data, track seasonal and long-term trends and provide the data to the CASGEM program.
- WRD will continue to use the data generated by the Regional Groundwater Monitoring Program along with WRD's GIS capabilities to address current and potential water quality issues and groundwater replenishment in the CBWCB.

SECTION 7

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TABLES

TABLE 1.1
CONSTRUCTION INFORMATION FOR WRD NESTED MONITORING WELLS

Page 1 of 7

Well Name	Zone	WRD ID Number	Depth of Well (feet)	Top of Perforation (feet)	Bottom of Perforation (feet)	Aquifer Designation
Bell #1	1	102041	1750	1730	1750	Pico Formation
	2	102042	1215	1195	1215	Sunnyside
	3	102043	985	965	985	Silverado
	4	102044	635	615	635	Silverado
	5	102045	440	420	440	Hollydale
	6	102046	270	250	270	Gage
Bell Gardens #1	1	101954	1795	1775	1795	Sunnyside
	2	101955	1410	1390	1410	Sunnyside
	3	101956	1110	1090	1110	Sunnyside
	4	101957	875	855	875	Silverado
	5	101958	575	555	575	Lynwood
	6	101959	390	370	390	Gage
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
Carson #3	1	102075	1800	1600	1620	Pico Formation
	2	102076	1240	1220	1240	Sunnyside
	3	102077	1100	1080	1100	Sunnyside
	4	102078	890	870	890	Silverado
	5	102079	640	620	640	Silverado
	6	102080	380	360	380	Lynwood
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

TABLE 1.1
CONSTRUCTION INFORMATION FOR WRD NESTED MONITORING WELLS

Page 2 of 7

Well Name	Zone	WRD ID Number	Depth of Well (feet)	Top of Perforation (feet)	Bottom of Perforation (feet)	Aquifer Designation
Compton #1	1	101809	1410	1370	1390	Sunnyside
	2	101810	1170	1150	1170	Sunnyside
	3	101811	820	800	820	Silverado
	4	101812	480	460	480	Hollydale
	5	101813	325	305	325	Gage
Compton #2	1	101948	1495	1475	1495	Sunnyside
	2	101949	850	830	850	Sunnyside
	3	101950	605	585	605	Silverado
	4	101951	400	380	400	Hollydale
	5	101952	315	295	315	Gage
	6	101953	170	150	170	Exposition
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	Gaspar
Gardena #1	1	100020	990	970	990	Sunnyside
	2	100021	465	445	465	Silverado
	3	100022	365	345	365	Lynwood
	4	100023	140	120	140	Gage
Gardena #2	1	101804	1335	1275	1335	Sunnyside
	2	101805	790	770	790	Silverado
	3	101806	630	610	630	Silverado
	4	101807	360	340	360	Lynwood
	5	101808	255	235	255	Gardena
Hawthorne #1	1	100887	990	910	950	Sunnyside
	2	100888	730	710	730	Silverado
	3	100889	540	520	540	Silverado
	4	100890	420	400	420	Silverado
	5	100891	260	240	260	Lynwood
	6	100892	130	110	130	Gage
Huntington Park #1	1	100005	910	890	910	Silverado
	2	100006	710	690	710	Jefferson
	3	100007	440	420	440	Gage
	4	100008	295	275	295	Exposition
	5	100009	134	114	134	Gaspar
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

TABLE 1.1
CONSTRUCTION INFORMATION FOR WRD NESTED MONITORING WELLS

Page 3 of 7

Well Name	Zone	WRD ID Number	Depth of Well (feet)	Top of Perforation (feet)	Bottom of Perforation (feet)	Aquifer Designation
Inglewood #3	1	102138	1940	1900	1940	Gage/Lynwood
	2	102139	1460	1440	1460	Lynwood/Silverado
	3	102140	1275	1255	1275	Silverado
	4	102141	910	890	910	Pico Formation
	5	102142	560	540	560	Pico Formation
	6	102143	390	370	390	Pico Formation
	7	102144	265	245	265	Pico Formation
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
Lakewood #2	1	102151	2000	1960	2000	Not Interpreted
	2	102152	1760	1740	1760	Not Interpreted
	3	102153	1320	1300	1320	Not Interpreted
	4	102154	1015	995	1015	Silverado
	5	102155	710	690	710	Lynwood
	6	102156	575	555	575	Jefferson
	7	102157	275	255	275	Gage
	8	102158	120	110	120	Artesia
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	Gaspar
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

TABLE 1.1
CONSTRUCTION INFORMATION FOR WRD NESTED MONITORING WELLS

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Well Name	Zone	WRD ID Number	Depth of Well (feet)	Top of Perforation (feet)	Bottom of Perforation (feet)	Aquifer Designation
Long Beach #4	1	101759	1380	1200	1220	Pico Formation
	2	101760	820	800	820	Sunnyside
Long Beach #6	1	101792	1530	1490	1510	Pico Formation
	2	101793	950	930	950	Sunnyside
	3	101794	760	740	760	Sunnyside
	4	101795	500	480	500	Silverado
	5	101796	400	380	400	Lynwood
	6	101797	240	220	240	Gage
Long Beach #8	1	101819	1495	1435	1455	Pico Formation
	2	101820	1040	1020	1040	Sunnyside
	3	101821	800	780	800	Silverado
	4	101822	655	635	655	Silverado
	5	101823	435	415	435	Lynwood
	6	101824	185	165	185	Gage
Los Angeles #1	1	100926	1370	1350	1370	Pico Formation
	2	100927	1100	1080	1100	Sunnyside
	3	100928	940	920	940	Silverado
	4	100929	660	640	660	Lynwood
	5	100930	370	350	370	Gage
Los Angeles #2	1	102003	1370	1330	1370	Pico Formation
	2	102004	730	710	730	Sunnyside
	3	102005	525	505	525	Sunnyside
	4	102006	430	410	430	Silverado
	5	102007	265	245	265	Lynwood
	6	102008	155	135	155	Exposition
Los Angeles #3	1	102069	1570	1210	1230	Sunnyside
	2	102070	895	875	895	Silverado
	3	102071	725	705	725	Lynwood
	4	102072	570	550	570	Hollydale
	5	102073	350	330	350	Gage
	6	102074	210	190	210	Expo
Los Angeles #4	1	102131	1780	1740	1780	Gage
	2	102132	1230	1190	1230	Lynwood
	3	102133	740	720	740	Silverado
	4	102134	510	490	510	Sunnyside
	5	102135	375	355	375	Pico Formation
	6	102136	255	235	255	Pico Formation
Manhattan Beach #1	1	102081	1990	1950	1990	Pico Formation
	2	102082	1590	1570	1590	Pico Formation
	3	102083	1270	1250	1270	Sunnyside
	4	102084	885	865	885	Silverado
	5	102085	660	640	660	Silverado
	6	102086	340	320	340	Lynwood
	7	102087	200	180	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
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
Norwalk #2	1	101942	1480	1460	1480	Sunnyside
	2	101943	1280	1260	1280	Sunnyside
	3	101944	980	960	980	Silverado
	4	101945	820	800	820	Lynwood
	5	101946	500	480	500	Gardena
	6	101947	256	236	256	Exposition
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	605	555	595	Sunnyside
	2	100043	510	460	500	Silverado
	3	100044	290	240	280	Lynwood
	4	100045	210	160	200	Lynwood
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	720	670	710	Sunnyside
	2	100039	550	500	540	Silverado
	3	100040	390	340	380	Lynwood
	4	100041	250	200	240	Lynwood
PM-5 Columbia Park	1	102047	1480	1360	1380	Pico Formation
	2	102048	960	940	960	Pico Formation
	3	102049	790	770	790	Sunnyside
	4	102050	600	580	600	Sunnyside
	5	102051	340	320	340	Silverado
	6	102052	160	140	160	Gage

TABLE 1.1
CONSTRUCTION INFORMATION FOR WRD NESTED MONITORING WELLS

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Well Name	Zone	WRD ID Number	Depth of Well (feet)	Top of Perforation (feet)	Bottom of Perforation (feet)	Aquifer Designation
PM-6 Madrona Marsh	1	102053	1235	1195	1235	Pico Formation
	2	102054	925	905	925	Sunnyside
	3	102055	790	770	790	Sunnyside
	4	102056	550	530	550	Silverado
	5	102057	410	390	410	Lynwood
	6	102058	260	240	260	Gage
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
Seal Beach #1	1	102062	1485	1345	1365	Sunnyside
	2	102063	1180	1160	1180	Sunnyside
	3	102064	1040	1020	1040	Sunnyside
	4	102065	795	775	795	Silverado
	5	102066	625	605	625	Lynwood
	6	102067	235	215	235	Gage
	7	102068	70	60	70	Gaspur
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 #2	1	101936	1390	1370	1390	Sunnyside
	2	101937	1110	1090	1110	Sunnyside
	3	101938	675	655	675	Silverado
	4	101939	445	425	445	Silverado
	5	101940	335	315	335	Lynwood
	6	101941	170	150	170	Gardena

TABLE 1.1
CONSTRUCTION INFORMATION FOR WRD NESTED MONITORING WELLS

Well Name	Zone	WRD ID Number	Depth of Well (feet)	Top of Perforation (feet)	Bottom of Perforation (feet)	Aquifer Designation
Whittier Narrows #1	1	100046	810	749	769	Sunnyside
	2	100047	810	609.5	629	Sunnyside
	3	100048	810	462.5	482.5	Sunnyside
	4	100049	810	392.5	402	Silverado
	5	100050	810	334	343.5	Silverado
	6	100051	810	272.5	282.5	Lynwood
	7	100052	810	233.5	243	Jefferson
	8	100053	810	163	173	Gardena
	9	100054	810	95	104.5	Gaspur
Whittier Narrows #2	1	100055	720	659.3	678.4	Pico Formation
	2	100056	720	579.1	598.2	Pico Formation
	3	100057	720	469.0	488.2	Pico Formation
	4	100058	720	418.6	428.2	Pico Formation
	5	100059	720	328.7	338.3	Pico Formation
	6	100060	720	263.2	273.3	Not Interpreted
	7	100061	720	213.7	223.3	Not Interpreted
	8	100062	720	135.7	145.3	Not Interpreted
	9	100063	720	90.8	100.3	Gardena
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
GROUNDWATER ELEVATIONS, WATER YEAR 2012-2013

	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6	ZONE 7	ZONE 8	ZONE 9
Bell #1 Reference Point Elevation: 147.39									
Depth of Well	1730-1750	1195-1215	965-985	615-635	420-440	250-270			
Aquifer Name	Pico Formation	Sunnyside	Silverado	Silverado	Hollydale	Gage			
12/21/2012	-13.66	-24.04	-6.09	-7.69	-1.39	19.57			
3/12/2013	-12.61	-18.24	-7.31	-9.66	-4.01	19.06			
6/17/2013	-20.54	-22.20	-15.71	-16.44	-10.21	16.30			
9/17/2013	-26.96	-38.70	-19.68	-20.54	-12.60	14.40			
Bell Gardens #1 Reference Point Elevation: 119.24									
Depth of Well	1775-1795	1390-1410	1090-1110	855-875	555-575	370-390			
Aquifer Name	Sunnyside	Sunnyside	Sunnyside	Silverado	Lynwood	Gage			
12/21/2012	14.18	13.44	13.74	18.08	21.89	20.12			
3/12/2013	13.53	11.84	12.34	17.04	20.55	19.39			
3/21/2013	12.95	10.75	11.33	16.39	20.24	18.74			
6/18/2013	5.92	3.80	4.96	10.69	13.24	12.00			
9/12/2013	-1.40	-2.36	-1.01	5.63	8.67	7.64			
Carson #1 Reference Point Elevation: 24.16									
Depth of Well	990-1010	740-760	460-480	250-270					
Aquifer Name	Sunnyside	Silverado	Lynwood	Gage					
10/15/2012	-51.04	-49.30	-16.48	-14.67					
11/16/2012	-51.60	-50.35	-16.75	-15.00					
12/19/2012	-52.16	-50.70	-16.52	-14.78					
1/30/2013	-47.91	-46.86	-16.44	-14.78					
2/27/2013	-50.41	-48.93	-15.89	-14.29					
2/28/2013	-50.00	-48.68	-15.94	-14.37					
3/6/2013	-50.99	-48.64	-15.99	-14.35					
3/19/2013	-51.52	-50.11	-16.40	-14.61					
3/28/2013	-51.28	-49.73	-16.38	-14.67					
4/29/2013	-51.25	-49.94	-16.15	-14.45					
5/28/2013	-50.73	-49.38	-15.94	-14.38					
6/12/2013	-50.91	-49.53	-16.07	-14.49					
7/30/2013	-49.12	-47.71	-15.97	-14.41					
8/27/2013	-43.34	-41.83	-15.28	-13.89					
9/11/2013	-42.04	-40.70	-15.06	-13.70					
9/25/2013	-42.04	-40.54	-14.94	-13.62					
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				
12/19/2012	-39.21	-34.14	-33.73	-30.11	-27.58				
3/12/2013	-37.63	-32.67	-32.34	-28.94	-26.58				
6/10/2013	-38.13	-33.46	-32.94	-29.40	-26.96				
8/28/2013	-35.60	-29.94	-29.73	-26.84	-24.79				
9/13/2013	-34.41	-29.41	-29.15	-26.30	-24.21				
Carson #3 Reference Point Elevation: 18.36									
Depth of Well	1600-1620	1220-1240	1080-1100	870-890	620-640	360-380			
Aquifer Name	Pico Formation	Sunnyside	Sunnyside	Silverado	Silverado	Lynwood			
12/17/2012	-36.13	-42.28	-44.76	-46.23	-46.07	-19.12			
3/12/2013	-35.93	-40.62	-42.73	-43.67	-43.32	-18.51			
6/10/2013	-35.68	-41.09	-43.64	-45.38	-45.21	-18.79			
9/13/2013	-35.54	-39.69	-41.68	-41.22	-41.16	-18.02			
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			
10/30/2012	-31.56	-36.31	-32.20	16.04	18.91	18.87			
12/13/2012	-23.60	-29.03	-21.43	18.52	21.17	21.19			
3/14/2013	-23.78	-33.45	-24.19	19.84	22.15	22.16			
3/18/2013	-23.45	-33.69	-24.02	19.83	22.15	22.17			
6/25/2013	-47.28	-56.36	-41.59	12.46	17.86	17.82			
7/3/2013	-45.98	-53.88	-41.87	13.94	17.32	17.28			
7/5/2013	-45.98	-53.25	-42.04	13.84	17.28	17.24			
9/9/2013	-47.76	-53.38	-39.28	13.97	16.78	16.77			

**TABLE 2.1
GROUNDWATER ELEVATIONS, WATER YEAR 2012-2013**

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	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6	ZONE 7	ZONE 8	ZONE 9
Cerritos #2 Reference Point Elevation: 76.82									
Depth of Well	1350-1370	915-935	740-760	490-510	350-370	150-170			
Aquifer Name	Sunnyside	Silverado	Silverado	Jefferson	Gage	Gaspur			
10/30/2012	-15.38	-26.29	-27.63	-4.03	22.64	30.73			
12/13/2012	-10.27	-21.13	-18.98	1.80	24.43	31.40			
1/17/2013	-8.90	-20.68	-18.13	3.73	25.10	31.85			
3/18/2013	-11.24	-22.55	-22.69	0.40	24.58	31.72			
6/25/2013	-21.83	-38.84	-30.99	-5.99	22.05	30.18			
7/2/2013	-22.99	-39.43	-36.82	-8.42	21.43	29.99			
9/9/2013	-24.33	-40.69	-37.88	-10.08	20.41	29.23			
Chandler #3 Reference Point Elevation: 153.20									
Depth of Well	341-363	165-192							
Aquifer Name	Gage/Lyn/Sil	Gage/Lyn/Sil							
12/12/2012	-17.21	-17.00							
03/21/2013	-17.14	-16.82							
06/21/2013	-18.57	-18.29							
09/16/2013	-18.50	-18.50							
Commerce #1 Reference Point Elevation: 159.60									
Depth of Well	1330-1390	940-960	760-780	570-590	325-345	205-225			
Aquifer Name	Pico Formation	Sunnyside	Sunnyside	Silverado	Hollydale	Expo/Gage			
12/21/2012	43.73	42.46	39.05	7.93	9.78	42.42			
3/12/2013	43.52	42.59	39.05	7.10	9.08	42.20			
6/17/2013	42.22	37.52	33.85	-1.08	1.69	41.04			
9/12/2013	40.35	32.30	28.19	-5.70	-1.53	40.15			
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				
12/13/2012	-38.92	-38.68	-20.36	-17.60	-4.42				
3/11/2013	-51.64	-51.31	-21.44	-17.43	-3.97				
6/11/2013	-62.38	-62.04	-26.78	-24.58	-11.91				
9/9/2013	-66.65	-66.35	-32.53	-30.10	-16.78				
Compton #2 Reference Point Elevation: 75.11									
Depth of Well	1479-1495	830-850	585-605	380-400	295-315	150-170			
Aquifer Name	Sunnyside	Sunnyside	Silverado	Hollydale	Gage	Exposition			
12/14/2012	-14.49	-39.10	-34.52	-34.08	-29.40	-24.09			
1/15/2013	-12.93	-37.23	-34.38	-34.10	-31.22	-25.18			
3/15/2013	-12.78	-38.92	-35.24	-34.88	-30.80	-24.44			
6/11/2013	-17.07	-42.70	-37.93	-36.88	-31.40	-25.10			
9/13/2013	-22.73	-50.62	-41.79	-40.88	-35.85	-28.52			
Downey #1 Reference Point Elevation: 97.21									
Depth of Well	1479-1495	830-850	585-605	380-400	295-315	150-170			
Aquifer Name	Sunnyside	Silverado	Silverado	Hollydale	Gage	Gaspur			
12/21/2012	3.79	4.87	9.90	12.39	35.46	38.98			
3/19/2013	1.57	3.17	7.42	10.49	35.08	38.76			
6/11/2013	-4.19	-2.61	-1.54	2.46	32.92	38.06			
9/9/2013	-11.14	-8.14	-6.09	-4.40	31.35	37.13			
Gardena #1 Reference Point Elevation: 82.20									
Depth of Well	970-990	445-465	345-365	120-140					
Aquifer Name	Sunnyside	Silverado	Lynwood	Gage					
12/15/2012	-56.68	-114.14	-92.10	-12.34					
3/15/2013	-55.07	-110.78	-88.84	-12.00					
6/15/2013	-54.05	-130.29	-94.79	-11.94					
9/15/2013	-54.91	-111.46	-90.69	-12.11					

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	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6	ZONE 7	ZONE 8	ZONE 9
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				
12/18/2012	-43.56	-56.46	-56.71	-24.17	-11.31				
3/18/2013	-42.28	-50.65	-50.58	-22.74	-11.06				
6/17/2013	-42.15	-56.18	-56.46	-24.41	-11.71				
9/17/2013	-42.04	-53.90	-54.26	-23.79	-11.81				
Hawthorne #1 Reference Point Elevation: 86.35									
Depth of Well	910-950	710-730	520-540	400-420	240-260	110-130			
Aquifer Name	Sunnyside	Silverado	Silverado	Silverado	Lynwood	Gage			
12/18/2012	-57.90	-16.38	-15.19	-15.00	-10.58	1.54			
3/18/2013	-50.24	-14.78	-13.77	-13.53	-8.56	1.28			
6/12/2013	-55.65	-15.97	-14.86	-14.64	-9.34	1.34			
7/16/2013	-59.25	-17.08	-15.65	-15.44	-10.13	1.20			
9/10/2013	-63.25	-17.31	-16.20	-15.97	-10.27	1.16			
Huntington Park #1 Reference Point Elevation: 177.08									
Depth of Well	890-910	690-710	420-440	275-295	114-134				
Aquifer Name	Silverado	Jefferson	Gage	Exposition	Gaspur				
10/19/2012	-24.22	-28.16	-17.48	14.13	Dry				
11/15/2012	-23.24	-26.88	-16.87	14.17	Dry				
12/21/2012	-22.42	-25.31	-15.45	15.05	Dry				
3/19/2013	-25.00	-29.70	-17.09	14.68	Dry				
6/17/2013	-27.64	-30.21	-19.31	14.08	Dry				
9/12/2013	-30.12	-35.13	-20.97	13.45	Dry				
Inglewood #1 Reference Point Elevation: 113.36									
Depth of Well	1380-1400		430-450	280-300	150-170				
Aquifer Name	Pico Formation	Abandoned	Silverado	Lynwood	Gage				
10/24/2012	-33.58	n/a	-32.17	4.16	8.96				
12/18/2012	-33.14	n/a	-30.85	4.25	9.15				
3/18/2013	-32.74	n/a	-26.97	4.81	9.00				
6/13/2013	-33.44	n/a	-28.75	4.08	8.88				
7/16/2013	-32.95	n/a	-29.74	3.81	8.81				
9/10/2013	-32.62	n/a	-31.08	3.57	8.71				
Inglewood #2 Reference Point Elevation: 217.33									
Depth of Well	800-840	450-470	330-350	225-245					
Aquifer Name	Pico Formation	Sunnyside	Silverado	Lynwood					
12/18/2012	-24.77	-17.08	-4.87	-1.46					
3/14/2013	-24.47	-17.11	-5.02	-1.48					
6/13/2013	-24.21	-17.00	-5.02	-1.60					
9/10/2013	-24.12	-16.92	-4.90	-1.47					
Inglewood #3 Reference Point Elevation: 73.00									
Depth of Well	1900-1940	1440-1460	1255-1275	890-910	540-560	370-390	245-265		
Aquifer Name	Pico Formation	Pico Formation	Pico Formation	Pico Formation	Silverado	Lyn/Sil	Gage/Lyn		
12/18/2012	-25.79	-38.53	-57.59	-60.11	-59.10	-12.51	3.66		
1/8/2013	-25.75	-38.69	-57.50	-53.91	-54.61	-9.04	3.80		
3/14/2013	-25.50	-38.58	-55.85	-47.85	-48.53	-7.69	4.10		
6/13/2013	-26.66	-37.84	-54.15	-66.52	-60.13	-12.43	3.70		
9/10/2013	-25.92	-37.39	-55.01	-79.26	-70.23	-14.85	3.30		
Lakewood #1 Reference Point Elevation: 53.41									
Depth of Well	989-1009	640-660	450-470	280-300	140-160	70-90			
Aquifer Name	Sunnyside	Silverado	Lynwood	Gage	Artesia	Bellflower			
12/15/2012	-28.57	-26.00	-24.30	-9.14	6.59	27.30			
3/19/2013	-59.36	-32.35	-29.73	-10.24	6.34	27.47			
6/15/2013	-134.42	-43.00	-41.00	-18.59	-0.35	26.49			
9/15/2013	-90.22	-41.68	-39.47	-21.60	-2.71	25.31			

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GROUNDWATER ELEVATIONS, WATER YEAR 2012-2013

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	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6	ZONE 7	ZONE 8	ZONE 9
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				
10/30/2012	-14.02	-11.66	-24.50	-39.22	-10.75				
12/18/2012	-4.50	-2.86	-11.90	-22.85	-0.88				
3/18/2013	-4.62	-0.86	-9.73	-22.60	-1.05				
6/25/2013	-18.52	-14.46	-34.29	-53.08	-17.54				
9/3/2013	-27.90	-23.34	-45.56	-59.03	-22.08				
9/12/2013	-28.74	-24.16	-44.52	-59.03	-22.41				
Lomita #1 Reference Point Elevation: 76.91									
Depth of Well	1240-1260	700-720	550-570	400-420	220-240	100-120			
Aquifer Name	Sunnyside	Sunnyside	Silverado	Silverado	Gage	Gage			
12/19/2012	-31.07	-20.67	-17.56	-18.07	-16.58	-16.79			
3/19/2013	-29.43	-19.79	-17.03	-17.67	-16.19	-16.34			
6/12/2013	-30.45	-20.61	-17.47	-18.24	-16.48	-16.68			
9/5/2013	-28.49	-20.38	-17.30	-17.84	-16.84	-16.47			
9/16/2013	-29.39	-19.89	-18.34	-19.00	-16.38	-17.06			
Long Beach #1 Reference Point Elevation: 31.16									
Depth of Well	1430-1450	1230-1250	970-990	599-619	400-420	155-175			
Aquifer Name	Sunnyside	Sunnyside	Silverado	Lynwood	Jefferson	Gage			
10/31/2012	-16.83	-18.35	-35.95	-26.08	-22.72	-8.51			
12/12/2012	-10.04	-11.65	-36.07	-25.42	-22.34	-3.35			
3/18/2013	-18.69	-21.31	-54.52	-27.88	-24.33	-6.18			
6/25/2013	-30.64	-33.96	-68.12	-41.29	-38.39	-12.13			
9/12/2013	-35.21	-37.95	-72.39	-40.47	-36.76	-13.08			
Long Beach #2 Reference Point Elevation: 44.35									
Depth of Well	970-990	720-740	450-470	280-300	160-180	95-115			
Aquifer Name	Sunnyside	Sunnyside	Silverado	Lynwood	Gage	Gaspar			
12/17/2012	-54.79	-37.87	-34.61	-8.98	1.29	3.29			
12/27/2012	-58.06	-38.15	-34.09	-8.67	1.50	3.54			
3/18/2013	-77.51	-42.14	-35.69	-9.55	1.02	3.16			
6/12/2013	-87.71	-45.15	-38.30	-11.39	0.08	2.51			
9/19/2013	-81.97	-49.06	-40.59	-13.38	-1.11	1.67			
Long Beach #3 Reference Point Elevation: 27.68									
Depth of Well	1350-1390	997-1017	670-690	530-550	410-430				
Aquifer Name	Sunnyside	Silverado	Silverado	Silverado	Lynwood				
12/17/2012	-36.19	-49.36	-49.36	-49.70	-2.88				
3/18/2013	-35.77	-49.45	-49.44	-49.85	-5.27				
6/12/2013	-35.99	-48.52	-48.53	-48.99	-2.75				
9/12/2013	-34.82	-38.03	-38.00	-38.52	-2.41				
Long Beach #4 Reference Point Elevation: 9.52									
Depth of Well	1200-1220	800-820							
Aquifer Name	Pico Formation	Sunnyside							
12/19/2012	-35.96	-19.25							
03/18/2013	-35.1	-18.05							
06/12/2013	-35.13	-16.51							
09/13/2013	-32.97	-14.84							
Long Beach #6 Reference Point Elevation: 32.53									
Depth of Well	1490-1510	930-950	740-760	480-500	380-400	220-240			
Aquifer Name	Pico Formation	Sunnyside	Sunnyside	Silverado	Lynwood	Gage			
10/19/2012	-37.19	-40.81	-40.67	-50.77	-50.75	-31.82			
11/1/2012	-32.20	-32.43	-33.27	-40.48	-40.46	-29.58			
11/15/2012	-27.40	-27.47	-27.20	-32.62	-32.62	-28.02			
12/12/2012	-23.08	-29.47	-30.09	-60.55	-60.89	-28.98			
3/15/2013	-33.57	-47.73	-48.77	-100.73	-100.82	-31.18			
6/26/2013	-47.46	-67.02	-68.31	-112.62	-112.66	-37.05			
9/9/2013	-52.35	-66.85	-67.57	-108.77	-108.85	-37.07			

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	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6	ZONE 7	ZONE 8	ZONE 9
Long Beach #8 Reference Point Elevation: 18.24									
Depth of Well	1435-1455	1020-1040	780-800	635-655	415-435	165-185			
Aquifer Name	Pico Formation	Sunnyside	Silverado	Silverado	Lynwood	Gage			
11/1/2012	-16.44	-33.66	-45.91	-43.77	-43.31	1.33			
12/12/2012	-16.40	-33.80	-46.80	-44.40	-43.99	1.29			
3/15/2013	-16.47	-33.73	-45.57	-43.30	-42.87	1.34			
6/26/2013	-16.42	-33.90	-45.42	-43.15	-42.73	1.37			
9/9/2013	-16.33	-33.47	-37.86	-36.08	-35.81	1.49			
Los Angeles #1 Reference Point Elevation: 173.63									
Depth of Well	1350-1370	1080-1100	920-940	640-660	350-370				
Aquifer Name	Pico Formation	Sunnyside	Silverado	Lynwood	Gage				
12/14/2012	-21.49	-17.98	-18.97	-20.13	-13.01				
3/19/2013	-21.60	-18.58	-19.78	-21.95	-12.75				
6/11/2013	-22.44	-20.32	-21.27	-23.19	-13.59				
9/17/2013	-27.55	-22.19	-22.95	-25.18	-14.52				
9/19/2013	-27.64	-22.23	-23.12	-25.27	-14.58				
Los Angeles #2 Reference Point Elevation: 218.59									
Depth of Well	1330-1370	710-730	505-525	410-430	245-265	135-155			
Aquifer Name	Pico Formation	Sunnyside	Sunnyside	Silverado	Lynwood	Exposition			
12/17/2012	47.79	0.37	-0.04	-12.51	-20.43	Dry			
3/15/2013	46.58	-0.02	-0.45	-12.74	-20.25	Dry			
6/11/2013	47.34	-0.54	-0.96	-13.66	-21.11	Dry			
9/17/2013	47.17	-1.66	-2.14	-14.95	-22.36	Dry			
Los Angeles #3 Reference Point Elevation: 145.71									
Depth of Well	1210-1230	875-895	705-715	550-570	330-350	190-210			
Aquifer Name	Sunnyside	Silverado	Lynwood	Hollydale	Gage	Exposition			
12/14/2012	-10.90	-2.68	-6.83	-12.19	-10.34	7.86			
3/19/2013	-10.61	-2.70	-7.11	-14.22	-10.72	8.08			
6/11/2013	-11.26	-3.27	-8.01	-15.51	-11.88	8.28			
9/17/2013	-14.57	-4.28	-9.37	-16.07	-12.12	8.36			
Los Angeles #4 Reference Point Elevation: 141.00									
Depth of Well	1740-1780	1190-1210	720-740	490-510	355-375	235-255			
Aquifer Name	Pico Formation	Pico Formation	Sunnyside	Silverado	Lynwood	Gage			
12/17/2012	-12.37	-28.26	-25.42	-20.50	-19.92	-9.95			
1/9/2013	-11.68	-29.37	-25.68	-20.22	-19.65	-9.70			
3/15/2013	-11.68	-30.70	-26.59	-21.57	-20.38	-9.52			
6/11/2013	-12.98	-34.30	-29.81	-23.28	-21.94	-10.14			
9/17/2013	-16.72	-44.89	-37.95	-25.92	-23.68	-10.58			
Manhattan Beach #1 Reference Point Elevation: 129.12									
Depth of Well	1950-1990	1570-1590	1250-1270	865-885	640-660	320-340	180-200		
Aquifer Name	Pico Formation	Pico Formation	Sunnyside	Silverado	Silverado	Lynwood	Gage		
12/13/2012	-0.71	-3.03	-35.19	-4.89	-2.88	7.12	10.32		
1/29/2013	-1.10	-3.28	-35.42	-4.88	-3.31	6.14	9.52		
3/12/2013	-0.84	-3.00	-35.07	-4.59	-2.84	6.60	9.92		
6/10/2013	-0.81	-3.06	-34.73	-4.68	-3.28	6.27	9.90		
9/10/2013	-0.34	-2.62	-34.19	-5.23	-2.36	8.47	10.14		
Montebello #1 Reference Point Elevation: 192.60									
Depth of Well	960-980	690-710	500-520	370-390	210-230	90-110			
Aquifer Name	Pico Formation	Sunnyside	Silverado	Lynwood	Gage	Exposition			
12/21/2012	91.93	87.36	86.69	83.28	81.28	Dry			
3/21/2013	92.16	87.56	86.89	83.19	80.75	Dry			
6/26/2013	85.25	77.85	77.12	74.06	76.23	Dry			
9/11/2013	62.80	69.30	68.47	65.45	70.66	Dry			

**TABLE 2.1
GROUNDWATER ELEVATIONS, WATER YEAR 2012-2013**

	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6	ZONE 7	ZONE 8	ZONE 9
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				
10/30/2012	36.42	-8.26	13.09	1.31	5.44				
12/18/2012	37.16	-0.54	17.34	4.17	4.66				
1/4/2013	37.56	-0.95	18.02	4.54	5.19				
3/14/2013	38.44	-3.40	17.59	4.00	4.83				
6/25/2013	34.40	-14.34	10.63	-2.34	0.66				
9/9/2013	29.73	-20.90	4.67	-4.48	-1.48				
9/11/2013	29.50	-21.15	4.46	-4.70	-1.67				
Norwalk #2 Reference Point Elevation: 114.73									
Depth of Well	1460-1480	1260-1280	960-980	800-820	480-500	236-256			
Aquifer Name	Sunnyside	Sunnyside	Silverado	Lynwood	Gardena	Exposition			
11/1/2012	17.15	17.19	10.06	12.03	17.94	26.35			
12/18/2012	19.57	19.59	15.52	16.90	21.53	28.46			
3/12/2013	20.39	20.39	13.56	15.30	21.00	27.64			
6/25/2013	14.27	14.28	3.88	6.09	10.83	21.63			
9/9/2013	8.38	8.47	-2.17	0.08	8.98	19.13			
Pico #1 Reference Point Elevation: 181.06									
Depth of Well	860-900	460-480	380-400	170-190					
Aquifer Name	Pico Formation	Silverado	Silverado	Gardena					
12/18/2012	131.22	114.79	111.73	114.46					
3/15/2013	135.02	120.59	123.98	120.73					
6/15/2013	128.84	112.07	110.95	109.46					
9/15/2013	120.11	87.73	86.63	97.04					
Pico #2 Reference Point Elevation: 149.60									
Depth of Well	1180-1200	830-850	560-580	320-340	235-255	100-120			
Aquifer Name	Sunnyside	Sunnyside	Sunnyside	Silverado	Lynwood	Gaspar			
12/19/2012	72.29	68.91	73.28	86.10	86.95	92.00			
3/15/2013	71.54	69.97	75.01	88.68	89.18	94.42			
6/15/2013	62.37	59.45	66.21	84.56	85.50	91.47			
9/15/2013	51.34	50.63	58.97	79.82	80.11	87.03			
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					
12/19/2012	-12.74	-10.11	-10.01	-10.01					
3/19/2013	-12.52	-10.08	-9.99	-9.97					
6/12/2013	-13.02	-10.29	-10.22	-10.22					
9/16/2013	-12.47	-10.00	-9.91	-9.90					
PM-4 Mariner Reference Point Elevation: 100.59									
Depth of Well	670-710	500-540	340-380	200-240					
Aquifer Name	Sunnyside	Silverado	Lynwood	Lynwood					
10/19/2012	-5.44	-2.85	0.35	0.41					
11/16/2012	-5.43	-2.74	0.45	0.50					
12/19/2012	-4.98	-3.27	-0.10	-0.04					
3/15/2013	-5.32	-3.24	-0.10	-0.02					
6/21/2013	-5.92	-3.59	-0.41	-0.35					
9/16/2013	-5.45	-3.29	-0.01	0.05					
PM-5 Columbia Park Reference Point Elevation: 76.72									
Depth of Well	1195-1235	905-925	770-790	530-550	390-410	240-260			
Aquifer Name	Pico Formation	Pico Formation	Sunnyside	Sunnyside	Silverado	Gage			
12/19/2012	-36.35	-45.85	-10.08	-7.86	-2.82	-2.59			
3/15/2013	-36.00	-42.24	-10.76	-8.80	-2.95	-2.71			
6/12/2013	-35.75	-44.11	-11.52	-9.40	-3.18	-2.97			
9/16/2013	-35.51	-43.21	-11.38	-8.79	-2.99	-2.68			

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TABLE 2.1
GROUNDWATER ELEVATIONS, WATER YEAR 2012-2013

	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6	ZONE 7	ZONE 8	ZONE 9
PM-6 Madrona Marsh Reference Point Elevation: 80.88									
Depth of Well	1195-1235	905-925	770-790	530-550	390-410	240-260			
Aquifer Name	Pico Formation	Sunnyside	Sunnyside	Silverado	Lynwood	Gage			
12/17/2012	-35.29	-12.27	-11.01	-3.67	-2.52	-2.02			
3/12/2013	-33.30	-11.79	-10.76	-3.47	-2.45	-1.97			
6/10/2013	-33.83	-12.14	-11.13	-3.67	-2.57	-2.04			
9/10/2013	-33.12	-11.47	-10.67	-3.40	-2.30	-1.82			
Rio Hondo #1 Reference Point Elevation: 146.89									
Depth of Well	1110-1130	910-930	710-730	430-450	280-300	140-160			
Aquifer Name	Sunnyside	Sunnyside	Sunnyside	Silverado	Lynwood	Gardena			
10/19/2012	67.60	63.65	62.85	50.49	59.66	63.62			
11/15/2012	66.95	64.17	63.35	51.48	58.89	62.49			
12/19/2012	69.92	68.62	67.87	55.97	60.01	62.93			
3/11/2013	70.53	68.74	67.96	55.69	60.53	63.79			
6/14/2013	61.19	57.55	56.74	49.33	56.25	59.38			
9/9/2013	51.69	45.81	44.97	40.94	49.90	53.71			
9/10/2013	51.45	46.19	45.36	40.79	49.68	53.51			
Seal Beach #1 Reference Point Elevation: 9.51									
Depth of Well	1345-1365	1160-1180	1020-1040	775-795	605-625	215-235	60-70		
Aquifer Name	Sunnyside	Sunnyside	Sunnyside	Silverado	Lynwood	Gage	Gaspar		
11/1/2012	-16.98	-17.04	-17.06	-36.99	-29.17	-2.93	0.91		
12/13/2012	-9.95	-9.98	-9.98	-32.74	-26.29	-0.56	2.42		
3/15/2013	-17.08	-17.50	-17.05	-43.37	-28.37	-0.09	3.2		
6/25/2013	-28.40	-28.73	-28.52	-57.40	-40.81	-8.21	-0.03		
9/9/2013	-33.81	-34.01	-33.90	-62.94	-41.40	-8.37	-0.23		
South Gate #1 Reference Point Elevation: 102.73									
Depth of Well	1440-1460	1320-1340	910-930	565-585	220-240				
Aquifer Name	Pico Formation	Sunnyside	Silverado	Lynwood	Exposition				
12/21/2012	1.92	4.01	8.16	6.59	42.26				
3/18/2013	-0.60	1.30	6.18	3.74	41.95				
6/18/2013	-7.06	-5.24	-1.77	-4.74	40.53				
9/25/2013	-9.42	-8.74	-4.93	-6.13	39.36				
Westchester #1 Reference Point Elevation: 124.27									
Depth of Well	740-760	560-580	455-475	310-330	215-235				
Aquifer Name	Pico Formation	Sunnyside	Silverado	Lynwood	Gage				
12/18/2012	0.22	8.22	8.51	8.60	8.67				
3/14/2013	0.32	8.16	8.43	8.47	8.53				
6/13/2013	-0.10	8.15	8.37	8.40	8.51				
9/10/2013	-0.98	8.07	8.35	8.32	8.42				
Whittier #1 Reference Point Elevation: 217.88									
Depth of Well	1180-1200	920-940	600-620	450-470	200-220				
Aquifer Name	Sunnyside	Sunnyside	Silverado	Lynwood	Gage				
10/30/2012	121.78	121.38	115.08	113.48	199.73				
12/18/2012	121.63	121.63	114.58	112.93	199.79				
3/18/2013	121.19	121.16	114.22	112.76	199.71				
6/11/2013	120.48	120.57	113.42	111.74	199.15				
9/13/2013	119.64	119.12	111.99	110.24	198.67				
Whittier #2 Reference Point Elevation: 165.17									
Depth of Well	1370-1390	1090-1110	655-675	425-445	315-335	150-170			
Aquifer Name	Sunnyside	Sunnyside	Silverado	Silverado	Lynwood	Gardena			
12/18/2012	90.24	90.77	82.52	80.62	101.63	110.23			
3/18/2013	91.47	91.95	83.97	83.58	103.83	111.59			
6/11/2013	87.20	87.65	73.83	70.68	98.48	108.02			
9/11/2013	79.89	80.42	64.68	63.92	96.08	106.11			

TABLE 2.1
GROUNDWATER ELEVATIONS, WATER YEAR 2012-2013

	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6	ZONE 7	ZONE 8	ZONE 9
Willowbrook #1 Reference Point Elevation: 96.21									
Depth of Well	885-905	500-520	360-380	200-220					
Aquifer Name	Sunnyside	Silverado	Lynwood	Gage					
10/19/2012	-39.28	-36.44	-40.52	-40.13					
11/16/2012	-37.49	-35.69	-40.93	-40.45					
12/21/2012	-39.84	-35.31	-39.82	-39.53					
3/19/2013	-41.90	-35.01	-38.66	-38.67					
6/12/2013	-46.42	-36.44	-41.28	-40.54					
9/17/2013	-57.68	-39.70	-44.80	-41.70					
Wilmington #1 Reference Point Elevation: 40.81									
Depth of Well	915-935	780-800	550-570	225-245	120-140				
Aquifer Name	Sunnyside	Sunnyside	Silverado	Lynwood	Gage				
11/5/2012	-45.44	-46.04	-45.98	-17.30	-13.99				
12/14/2012	-45.82	-46.40	-46.28	-16.70	-13.38				
3/21/2013	-45.68	-46.23	-46.14	-16.80	-13.50				
6/12/2013	-44.59	-45.13	-45.08	-14.99	-11.68				
9/12/2013	-33.78	-34.35	-34.29	-12.34	-9.66				
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				
11/6/2012	-34.97	-30.52	-26.76	-25.98	-6.88				
12/18/2012	-34.60	-30.20	-26.13	-25.29	-6.89				
3/21/2013	-31.84	-27.36	-23.37	-22.58	-4.42				
6/12/2013	-33.87	-29.39	-24.97	-23.99	-6.88				
9/13/2013	-27.97	-24.84	-21.76	-21.02	-6.57				
Whittier Narrows #1 Reference Point Elevation: 214.96									
Depth of Well	749-769	609.5-629	462.5-482.5	392.5-402	334-343.5	272.5-282.5	233.5-243	163-173	95-104.5
Aquifer Name	Sunnyside	Sunnyside	Sunnyside	Silverado	Silverado	Lynwood	Jefferson	Gardena	Gaspur
3/13/2013	181.55	182.08	183.21	185.30	186.56	187.70	187.56	187.56	187.92
9/18/2013	157.11	160.21	163.81	171.45	172.38	173.80	173.96	174.3	177.18
Whittier Narrows #2 Reference Point Elevation: 209.08									
Depth of Well	659-678	579-598	469-488	419-428	329-338	263-273	214-224	136-145	91-100
Aquifer Name	Pico Formation	Pico Formation	Pico Formation	Pico Formation	Pico Formation	Not Defined	Not Defined	Not Defined	Gardena
3/14/2013	-13.04	-12.92	-12.97	-6.28	106.98	158.52	159.46	160.23	166.89
9/19/2013	-15.35	-15.21	-16.78	-14.54	93.38	138.63	141.35	142.89	157.49

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2012-13

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Constituents	Units	MCL	MCL Type	Bell #1											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				5/13/13	9/29/13	5/13/13	9/29/13	5/13/13	9/29/13	5/13/13	9/29/13	5/13/13	9/29/13	5/13/13	9/29/13
General Minerals															
Alkalinity	mg/L	-		590	570	160	160	160	150	160	160	170	170	240	220
Anion Sum	meq/L	-		16	15	5.6	5.4	5.2	5	5.5	5.5	7.4	7	11	11
Bicarbonate as HCO3	mg/L	-		720	680	200	200	190	180	190	200	210	200	290	270
Boron	mg/L	1	N	1.5	1.6	0.14	0.13	0.12	0.13	0.14	0.14	0.14	0.14	0.15	0.15
Calcium, Total	mg/L	-		15	16	51	49	45	44	57	55	75	72	120	120
Carbon Dioxide	mg/L	-		ND	2.2	ND	ND	ND	ND	ND	ND	2.9	ND	ND	2.8
Carbonate as CO3	mg/L	-		9.3	22	2.2	3.3	ND	2.9	ND	3.3	ND	3.3	ND	2.8
Cation Sum	meq/l	-		17	18	5.6	5.4	5.3	5.3	5.9	5.8	7.6	7.4	11	11
Chloride	mg/L	500	S	140	140	23	21	30	29	26	26	52	49	110	110
Fluoride	mg/L	2	P	0.4	0.42	0.22	0.21	0.39	0.41	0.4	0.43	0.35	0.37	0.36	0.37
Hardness (Total, as CaCO3)	mg/L	-		61	67	170	160	160	160	200	190	260	250	430	430
Iron, Total	mg/L	0.3	S	0.13	0.13	0.02	0.022	ND	ND	ND	0.02	ND	ND	ND	ND
Langelier Index - 25 degree	None	-		0.88	1.3	0.8	0.95	0.6	0.83	0.8	0.96	0.82	1.1	1	1.2
Magnesium, Total	None	-		6	6.5	11	10	11	11	14	13	19	18	32	31
Manganese, Total	mg/L	50	S	35	53	74	78	47	49	68	71	ND	ND	ND	ND
Nitrate as Nitrogen	mg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	1.8	1.5	2.7	2.6
Nitrate (as NO3)	mg/L	45	P	ND	ND	ND	ND	ND	ND	ND	ND	7.9	6.6	12	12
Nitrite, as Nitrogen	mg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/L	-		5.7	6.2	2.7	2.7	3.5	3.4	3.3	3.3	3	3.1	3	3
Sodium, Total	mg/L	-		360	380	49	48	47	48	42	42	51	50	60	60
Sulfate	mg/L	500	S	1.5	2	78	75	57	55	74	72	110	110	140	140
Surfactants	mg/L	0.5	S	ND	0.052	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/L	1000	S	980	950	330	330	310	320	350	310	460	440	660	670
Total Nitrogen, Nitrate+Nitrite	mg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	1.8	1.5	2.7	2.6
Total Organic Carbon	mg/L	-		22	18	ND	1.1	0.53	0.64	ND	0.35	ND	ND	ND	0.46
General Physical Properties															
Apparent Color	ACU	15	S	350	150	3	ND	ND	ND	3	ND	ND	ND	ND	ND
Lab pH	Units	-		8.3	8.7	8.2	8.4	8.1	8.4	8.2	8.4	8.1	8.4	7.9	8.2
Odor	TON	3	S	2	2	ND	2	ND	2	ND	2	ND	2	ND	2
Specific Conductance	µmho/cm	1600	S	1600	1500	540	550	510	520	560	560	720	720	1100	1100
Turbidity	NTU	5	S	0.33	5	0.096	0.27	0.075	0.15	0.12	0.18	0.24	0.21	1.5	1.9
Metals															
Aluminum, Total	µg/L	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	µg/L	10	P	4.7	ND	ND	ND	ND	ND	ND	1	3.2	3.4	1.2	1.2
Barium, Total	µg/L	1000	P	13	20	36	37	35	36	70	70	230	240	130	130
Beryllium, Total	µg/L	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	µg/L	50	P	1.3	ND	ND	ND	ND	ND	ND	ND	1.6	1.1	4.1	3.8
Copper, Total	µg/L	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	1.9	1.5	4.3	4.3
Lead, Total	µg/L	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total	µg/L	50	P	ND	ND	ND	ND	ND	ND	ND	ND	6.2	6	6.5	5.5
Silver, Total	µg/L	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	µg/L	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds															
1,1-Dichloroethane	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	µg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	µg/L	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-Isopropyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/L	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	µg/L	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	µg/L	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	2.6	1.9	4.2	4
Styrene	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Trihalomethanes	µg/L	80	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	µg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	0.66	0.7	19	19
Vinyl chloride (VC)	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (Total)	µg/L	1750	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 (N): Notification Level (A): Action Level (ND): Not Detected

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2012-13

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Constituents	Units	MCL	MCL Type	Bell Gardens #1											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				4/29/13	9/20/13	4/29/13	9/20/13	4/29/13	9/20/13	4/29/13	9/20/13	4/29/13	9/20/13	4/29/13	9/20/13
General Minerals															
Alkalinity	mg/L	-		160	160	160	150	140	140	110	110	130	130	150	150
Anion Sum	meq/L	-		7.4	7.2	5	4.8	7.4	7.2	5.5	5.4	5.5	5.2	6	5.9
Bicarbonate as HCO3	mg/L	-		200	200	190	180	180	170	130	140	160	160	180	180
Boron	mg/L	1	N	0.056	0.052	0.13	0.12	0.16	0.16	0.15	0.15	0.16	0.15	0.15	0.15
Calcium, Total	mg/L	-		97	95	41	38	76	74	52	50	53	50	60	59
Carbon Dioxide	mg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l	-		7.4	7.2	5.1	4.9	7.3	7.2	5.6	5.4	5.6	5.4	6	6
Chloride	mg/L	500	S	52	50	33	32	70	67	53	50	43	40	47	46
Fluoride	mg/L	2	P	0.19	0.19	0.28	0.28	0.3	0.3	0.38	0.4	0.21	0.22	0.33	0.33
Hardness (Total, as CaCO3)	mg/L	-		300	290	140	130	240	240	170	160	180	170	200	200
Iron, Total	mg/L	0.3	S	0.043	0.043	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None	-		0.97	0.93	0.65	0.58	0.63	0.54	0.31	0.29	0.28	0.19	0.44	0.42
Magnesium, Total	None	-		14	14	8.2	7.8	13	13	9.8	9.6	11	10	12	12
Manganese, Total	mg/L	50	S	31	36	42	46	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate as Nitrogen	mg/L	10	P	ND	ND	ND	ND	2.6	2.4	1.8	1.7	2.1	2	1.8	1.8
Nitrate (as NO3)	mg/L	45	P	ND	ND	ND	ND	11	11	7.9	7.4	9.2	8.6	8.2	7.9
Nitrite, as Nitrogen	mg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/L	-		2.3	2.4	2.6	2.5	3.5	3.3	3.2	3.2	2.9	3	3.3	3.4
Sodium, Total	mg/L	-		30	30	54	53	54	54	48	46	45	44	46	46
Sulfate	mg/L	500	S	130	120	42	42	110	110	78	76	70	68	75	74
Surfactants	mg/L	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/L	1000	S	460	450	300	280	450	420	330	310	330	310	370	350
Total Nitrogen, Nitrate+Nitrite	mg/L	10	P	ND	ND	ND	ND	2.6	2.4	1.8	1.7	2.1	2	1.8	1.8
Total Organic Carbon	mg/L	-		ND	0.36	0.53	0.47	0.48	0.49	0.38	0.38	0.35	0.36	0.32	0.32
General Physical Properties															
Apparent Color	ACU	15	S	5	ND	5	ND	5	ND	3	ND	ND	ND	5	ND
Lab pH	Units	-		8.1	8.1	8.2	8.2	8	7.9	7.9	7.9	7.8	7.7	7.9	7.8
Odor	TON	3	S	1	ND	1	ND	2	ND	2	ND	ND	ND	ND	ND
Specific Conductance	µmho/cm	1600	S	700	710	490	500	720	730	560	560	550	540	600	600
Turbidity	NTU	5	S	0.36	0.4	0.18	0.21	0.35	0.53	0.59	0.63	0.3	0.45	0.21	0.21
Metals															
Aluminum, Total	µg/L	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	µg/L	10	P	3.9	3.7	1.1	ND	2.8	3.3	2.4	2.6	1.3	1.4	2.7	2.2
Barium, Total	µg/L	1000	P	90	100	60	68	120	140	44	45	49	54	52	57
Beryllium, Total	µg/L	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	µg/L	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	µg/L	1300	P	2.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	µg/L	-		ND	ND	ND	ND	0.29	0.29	0.41	0.43	0.58	0.58	0.48	0.51
Lead, Total	µg/L	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total	µg/L	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total	µg/L	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	µg/L	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds															
1,1-Dichloroethane	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	µg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	µg/L	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.56	ND
Di-Isopropyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/L	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	µg/L	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	µg/L	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	µg/L	6	P	ND	ND	ND	ND	ND	0.52	ND	ND	ND	0.54	ND	ND
Styrene	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2	1.6
Toluene	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Trihalomethanes	µg/L	80	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	µg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	2	1.6	0.73	0.72
Vinyl chloride (VC)	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (Total)	µg/L	1750	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 (N): Notification Level (A): Action Level (ND): Not Detected

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2012-13

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Constituents	Units	MCL	MCL Type	Cerritos #1											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				4/8/13	9/11/13	4/8/13	9/11/13	4/8/13	9/11/13	4/8/13	9/11/13	4/8/13	9/11/13	4/8/13	9/11/13
General Minerals															
Alkalinity	mg/L	-		160	150	150	150	170	170	170	170	170	170	180	180
Anion Sum	meq/L	-		4.7	4.6	4.1	4.2	5.3	5.3	4.7	4.8	4.4	4.4	4.4	4.5
Bicarbonate as HCO3	mg/L	-		200	190	180	190	210	200	200	210	210	210	220	220
Boron	mg/L	1	N	0.077	0.077	0.063	0.054	0.088	0.084	0.084	0.081	0.086	0.083	0.075	0.074
Calcium, Total	mg/L	-		34	35	32	30	44	42	48	46	39	38	46	44
Carbon Dioxide	mg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/L	-		2.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l	-		4.6	4.7	4.5	4.1	5.6	5.2	5.2	4.9	4.8	4.4	4.7	4.5
Chloride	mg/L	500	S	15	15	12	12	20	21	14	15	10	10	9.7	10
Fluoride	mg/L	2	P	0.25	0.26	0.36	0.36	0.37	0.37	0.51	0.52	0.44	0.45	0.3	0.32
Hardness (Total, as CaCO3)	mg/L	-		100	110	100	96	140	130	170	160	140	130	150	150
Iron, Total	mg/L	0.3	S	ND	ND	ND	ND	0.026	0.027	0.078	0.082	0.06	0.057	0.08	0.073
Langelier Index - 25 degree	None	-		0.68	0.36	0.54	0.25	0.6	0.37	0.59	0.36	0.54	0.3	0.59	0.38
Magnesium, Total	None	-		4.7	4.7	5.2	4.9	6.7	6.3	12	11	9.9	9.3	9.2	8.9
Manganese, Total	mg/L	50	S	23	26	26	30	42	46	75	85	110	110	120	140
Nitrate as Nitrogen	mg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/L	45	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, as Nitrogen	mg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/L	-		2.3	2.3	2.5	2.2	2.3	2.2	2.2	2.1	2.2	2	2.4	2.2
Sodium, Total	mg/L	-		58	57	55	50	63	59	41	37	44	40	37	35
Sulfate	mg/L	500	S	50	51	34	36	62	63	43	46	29	29	24	25
Surfactants	mg/L	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/L	1000	S	290	280	260	240	320	320	290	280	260	270	260	270
Total Nitrogen, Nitrate+Nitrite	mg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/L	-		ND	ND	0.35	0.4	0.34	ND	ND	ND	0.31	ND	0.32	0.36
General Physical Properties															
Apparent Color	ACU	15	S	ND	3	ND	5	ND	ND	ND	3	ND	ND	3	ND
Lab pH	Units	-		8.3	8	8.2	7.9	8.1	7.9	8	7.8	8.1	7.8	8	7.8
Odor	TON	3	S	1	1	2	2	1	ND	3	1	1	1	1	2
Specific Conductance	µmho/cm	1600	S	460	460	420	410	520	520	470	470	430	430	430	430
Turbidity	NTU	5	S	0.071	0.096	0.23	0.25	0.2	0.42	0.29	0.35	0.19	0.22	0.23	0.28
Metals															
Aluminum, Total	µg/L	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	µg/L	10	P	13	14	10	11	19	19	5.1	4.9	8.6	8.2	32	33
Barium, Total	µg/L	1000	P	51	52	97	100	130	130	61	65	86	83	100	100
Beryllium, Total	µg/L	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	µg/L	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	µg/L	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total	µg/L	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total	µg/L	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total	µg/L	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	µg/L	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds															
1,1-Dichloroethane	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	µg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	µg/L	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-Isopropyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/L	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	µg/L	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	µg/L	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	µg/L	6	P	ND	ND	3.4	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Trihalomethanes	µg/L	80	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	µg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride (VC)	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (Total)	µg/L	1750	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 (N): Notification Level (A): Action Level (ND): Not Detected

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2012-13

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Constituents	Units	MCL	MCL Type	Cerritos #2											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				4/22/13	9/11/13	4/22/13	9/11/13	4/22/13	9/11/13	4/22/13	9/11/13	4/22/13	9/11/13	4/22/13	9/11/13
General Minerals															
Alkalinity	mg/L	-		150	150	160	160	160	160	180	170	180	180	330	340
Anion Sum	meq/L	-		3.6	3.5	8	8	3.7	3.6	4.2	4	4.1	4	13	14
Bicarbonate as HCO3	mg/L	-		180	180	190	190	190	190	220	210	220	210	400	410
Boron	mg/L	1	N	0.054	ND	0.14	0.15	0.062	0.053	0.07	0.075	0.074	0.066	0.099	0.1
Calcium, Total	mg/L	-		43	41	87	91	45	44	50	51	52	50	160	160
Carbon Dioxide	mg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l	-		3.8	3.6	7.9	8.2	3.9	3.7	4.2	4.2	4.2	4.1	13	13
Chloride	mg/L	500	S	6	5.8	76	75	5.4	5.2	6.1	6.2	6	5.9	92	93
Fluoride	mg/L	2	P	0.28	0.29	0.36	0.38	0.29	0.29	0.42	0.4	0.35	0.34	0.35	0.36
Hardness (Total, as CaCO3)	mg/L	-		130	120	290	300	140	130	160	160	160	150	550	540
Iron, Total	mg/L	0.3	S	ND	ND	ND	ND	ND	ND	0.031	0.028	0.09	0.082	0.26	0.25
Langelier Index - 25 degree	None	-		0.49	0.23	0.62	0.63	0.63	0.36	0.66	0.37	0.65	0.42	1.1	1.2
Magnesium, Total	None	-		5.7	5.2	17	17	6.2	5.8	8.5	8.3	7.5	7	33	32
Manganese, Total	mg/L	50	S	8.6	9.2	ND	ND	36	39	82	90	100	110	440	700
Nitrate as Nitrogen	mg/L	10	P	ND	ND	3.1	3	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/L	45	P	ND	ND	14	13	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, as Nitrogen	mg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/L	-		3	2.8	4.1	4.4	2.7	2.6	2.8	2.8	3	2.9	4.2	4.1
Sodium, Total	mg/L	-		26	24	46	48	24	22	21	21	22	21	50	51
Sulfate	mg/L	500	S	20	20	120	120	17	17	17	18	17	16	200	200
Surfactants	mg/L	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/L	1000	S	220	200	470	510	230	220	240	240	240	240	830	810
Total Nitrogen, Nitrate+Nitrite	mg/L	10	P	ND	ND	3.1	3	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/L	-		ND	ND	0.53	0.47	ND	ND	ND	0.34	ND	ND	1.1	1
General Physical Properties															
Apparent Color	ACU	15	S	ND	ND	ND	ND	5	ND	ND	ND	ND	3	5	5
Lab pH	Units	-		8	7.8	7.8	7.8	8.1	7.9	8.1	7.8	8	7.8	7.7	7.8
Odor	TON	3	S	1	1	1	ND	1	3	1	2	2	ND	1	1
Specific Conductance	µmho/cm	1600	S	350	350	800	800	360	360	400	400	390	390	1200	1200
Turbidity	NTU	5	S	0.17	0.17	0.34	0.34	4.5	1.1	0.12	0.17	0.21	0.3	1.8	1.8
Metals															
Aluminum, Total	µg/L	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	µg/L	10	P	2.1	2.1	1.8	1.4	2.9	2.9	5.9	7.2	16	16	4.5	3.7
Barium, Total	µg/L	1000	P	100	100	150	150	110	110	160	170	170	170	85	86
Beryllium, Total	µg/L	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	µg/L	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	µg/L	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	µg/L	-		0.07	0.092	0.72	0.7	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total	µg/L	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total	µg/L	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total	µg/L	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	µg/L	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds															
1,1-Dichloroethane	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	µg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	µg/L	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-Isopropyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/L	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	µg/L	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	µg/L	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	µg/L	6	P	ND	ND	0.88	0.97	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Trihalomethanes	µg/L	80	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	µg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride (VC)	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (Total)	µg/L	1750	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 (N): Notification Level (A): Action Level (ND): Not Detected

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2012-13

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Constituents	Units	MCL	MCL Type	Commerce #1									
				Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				5/10/13	9/26/13	5/10/13	9/26/13	5/10/13	9/26/13	5/10/13	9/26/13	5/10/13	9/26/13
General Minerals													
Alkalinity	mg/L	-		290	290	220	220	180	180	170	160	160	160
Anion Sum	meq/L	-		11	11	8.4	8.7	7.7	7.9	7.1	6.5	6.9	6.8
Bicarbonate as HCO3	mg/L	-		350	360	270	260	220	220	210	190	200	200
Boron	mg/L	1	N	0.58	0.61	0.23	0.24	0.25	0.26	0.14	0.14	0.12	0.13
Calcium, Total	mg/L	-		49	49	65	61	45	43	69	63	66	62
Carbon Dioxide	mg/L	-		ND	2.4	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/L	-		2.1	5.9	2.5	5.3	ND	4.5	ND	3.9	ND	3.3
Cation Sum	meq/l	-		12	12	8.9	8.9	8.5	8.3	7.5	6.9	7.4	7
Chloride	mg/L	500	S	160	170	110	130	84	85	66	61	71	69
Fluoride	mg/L	2	P	0.4	0.42	0.36	0.37	0.49	0.51	0.39	0.42	0.45	0.43
Hardness (Total, as CaCO3)	mg/L	-		210	210	250	240	190	180	260	240	260	240
Iron, Total	mg/L	0.3	S	0.053	0.026	0.069	0.054	0.23	0.16	ND	ND	ND	ND
Langelier Index - 25 degree	None	-		0.76	1.2	0.95	1.3	0.64	1	0.67	1.1	0.63	1.1
Magnesium, Total	None	-		22	22	22	21	18	17	21	19	22	20
Manganese, Total	mg/L	50	S	32	25	35	38	87	67	ND	ND	ND	ND
Nitrate as Nitrogen	mg/L	10	P	ND	ND	ND	ND	ND	ND	4.2	3.9	7.4	6.9
Nitrate (as NO3)	mg/L	45	P	ND	ND	ND	ND	ND	ND	18	17	32	30
Nitrite, as Nitrogen	mg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/L	-		6.8	6.5	3.4	3.7	4.1	3.8	2.4	2.2	2.1	2
Sodium, Total	mg/L	-		160	180	87	93	110	110	51	48	52	50
Sulfate	mg/L	500	S	9.2	10	41	33	79	88	71	64	54	52
Surfactants	mg/L	0.5	S	ND	0.058	ND	ND	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/L	1000	S	640	640	490	500	470	470	450	390	420	400
Total Nitrogen, Nitrate+Nitrite	mg/L	10	P	ND	ND	ND	ND	ND	ND	4.2	3.9	7.4	6.9
Total Organic Carbon	mg/L	-		5	4.3	1.2	1.2	1.7	0.89	ND	ND	ND	ND
General Physical Properties													
Apparent Color	ACU	15	S	30	25	3	3	15	5	ND	ND	ND	ND
Lab pH	Units	-		8	8.4	8.2	8.5	8.1	8.5	8	8.5	8	8.4
Odor	TON	3	S	100	2	2	ND	4	ND	1	ND	1	ND
Specific Conductance	µmho/cm	1600	S	1100	1100	850	900	790	820	700	670	700	700
Turbidity	NTU	5	S	5.8	3.4	0.28	0.2	0.63	0.85	0.33	0.57	1.6	2.2
Metals													
Aluminum, Total	µg/L	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	µg/L	10	P	ND	ND	ND	ND	ND	ND	1	ND	1	ND
Barium, Total	µg/L	1000	P	70	69	100	110	190	210	73	74	58	59
Beryllium, Total	µg/L	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	µg/L	50	P	ND	ND	ND	ND	ND	ND	7.8	8.4	10	9.7
Copper, Total	µg/L	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	µg/L	-		ND	0.062	ND	ND	ND	ND	7.9	9	11	11
Lead, Total	µg/L	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total	µg/L	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total	µg/L	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	µg/L	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds													
1,1-Dichloroethane	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	µg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	µg/L	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-Isopropyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/L	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	µg/L	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	µg/L	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	µg/L	6	P	ND	ND	ND	ND	ND	ND	2.8	2.5	3.2	3
Styrene	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	0.85	0.88	ND	ND
Toluene	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Trihalomethanes	µg/L	80	P	ND	ND	ND	ND	ND	ND	ND	ND	0.78	0.65
trans-1,2-Dichloroethylene	µg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	3.7	3.9	ND	ND
Vinyl chloride (VC)	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (Total)	µg/L	1750	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 (N): Notification Level (A): Action Level (ND): Not Detected

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2012-13

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Constituents	Units	MCL	MCL Type	Compton #1							
				Zone 1		Zone 2		Zone 3		Zone 4	
				4/18/13	9/9/13	4/18/13	9/9/13	4/18/13	9/9/13	4/18/13	9/9/13
General Minerals											
Alkalinity	mg/L	-		160	140	140	130	150	150	160	160
Anion Sum	meq/L	-		3.9	3.8	4.6	4.5	5	5	5.5	5.3
Bicarbonate as HCO3	mg/L	-		190	180	160	160	190	180	200	190
Boron	mg/L	1	N	0.15	0.13	0.098	0.081	0.11	0.09	0.088	0.073
Calcium, Total	mg/L	-		21	20	39	38	50	48	59	60
Carbon Dioxide	mg/L	-		ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/L	-		3.2	ND	2.3	ND	2.2	ND	ND	ND
Cation Sum	meq/l	-		4.1	4	4.8	4.6	5.2	5	5.5	5.5
Chloride	mg/L	500	S	16	16	23	23	25	25	23	21
Fluoride	mg/L	2	P	0.29	0.31	0.34	0.36	0.28	0.3	0.27	0.29
Hardness (Total, as CaCO3)	mg/L	-		60	58	110	110	160	160	170	180
Iron, Total	mg/L	0.3	S	ND	ND	ND	ND	0.024	0.022	0.067	0.067
Langelier Index - 25 degree	None	-		0.57	0.14	0.7	0.3	0.77	0.44	0.78	0.55
Magnesium, Total	None	-		1.8	1.8	3.4	3.4	9.2	9.3	6.3	6.5
Manganese, Total	µg/L	50	S	10	10	15	16	47	53	71	79
Nitrate as Nitrogen	mg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/L	45	P	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, as Nitrogen	mg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/L	-		1.6	1.8	2	1.9	2.8	2.7	2.6	2.7
Sodium, Total	mg/L	-		66	64	57	54	44	40	46	44
Sulfate	mg/L	500	S	14	18	59	57	60	59	75	74
Surfactants	mg/L	0.5	S	ND	0.069	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/L	1000	S	230	230	290	270	320	290	340	310
Total Nitrogen, Nitrate+Nitrite	mg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/L	-		3	2.8	0.86	0.89	0.59	0.88	ND	ND
General Physical Properties											
Apparent Color	ACU	15	S	25	25	5	5	5	5	ND	ND
Lab pH	Units	-		8.4	8	8.3	8	8.2	7.9	8.2	7.9
Odor	TON	3	S	1	3	1	ND	1	ND	2	2
Specific Conductance	µmho/cm	1600	S	390	390	470	470	500	500	540	540
Turbidity	NTU	5	S	0.31	0.27	0.081	0.12	0.48	0.66	0.35	0.37
Metals											
Aluminum, Total	µg/L	1000	P	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	µg/L	10	P	ND	ND	ND	ND	ND	ND	18	18
Barium, Total	µg/L	1000	P	9.6	8.9	12	13	60	62	150	160
Beryllium, Total	µg/L	4	P	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	µg/L	50	P	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	µg/L	1300	P	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	µg/L	-		ND	0.034	ND	ND	ND	ND	ND	ND
Lead, Total	µg/L	15	P	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total	µg/L	50	P	5.6	ND	ND	ND	ND	ND	ND	ND
Silver, Total	µg/L	100	S	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	µg/L	5000	S	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds											
1,1-Dichloroethane	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	µg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	µg/L	70	P	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND
Di-Isopropyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/L	300	P	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	µg/L	1200	P	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	µg/L	13	P	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND
Total Trihalomethanes	µg/L	80	P	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	µg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride (VC)	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (Total)	µg/L	1750	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 (N): Notification Level (A): Action Level (ND): Not Detected

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2012-13

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Constituents	Units	MCL	MCL Type	Compton #2											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				5/8/13	9/9/13	5/8/13	9/9/13	5/8/13	9/9/13	5/8/13	9/9/13	5/8/13	9/9/13	5/8/13	9/9/13
General Minerals															
Alkalinity	mg/L	-		460	460	260	270	160	150	180	180	180	180	180	170
Anion Sum	meq/L	-		9.7	9.6	5.7	5.7	4.9	4.8	6	6	6.4	6.4	7.8	7.5
Bicarbonate as HCO3	mg/L	-		560	560	320	320	190	180	210	220	220	220	220	210
Boron	mg/L	1	N	0.64	0.69	0.17	0.16	0.1	0.084	0.12	0.093	0.12	0.1	0.15	0.13
Calcium, Total	mg/L	-		11	12	26	26	45	42	67	64	69	65	82	77
Carbon Dioxide	mg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/L	-		9	5.8	2.5	2.1	2.1	ND	2.2	ND	2.1	ND	ND	ND
Cation Sum	meq/l	-		9.8	11	6.4	5.9	5.4	4.9	6.4	6	6.9	6.4	8.1	7.6
Chloride	mg/L	500	S	14	14	14	13	21	20	29	29	38	36	71	66
Fluoride	mg/L	2	P	0.4	0.41	0.26	0.28	0.22	0.24	0.23	0.25	0.3	0.32	0.37	0.38
Hardness (Total, as CaCO3)	mg/L	-		37	38	89	87	140	130	220	210	240	220	280	270
Iron, Total	mg/L	0.3	S	0.042	0.05	0.042	0.039	ND	ND	0.033	0.03	0.033	0.03	ND	ND
Langelier Index - 25 degree	None	-		0.75	0.56	0.57	0.5	0.72	0.42	0.9	0.7	0.91	0.76	0.78	0.72
Magnesium, Total	None	-		2.1	2.2	5.5	5.3	7.7	6.8	12	12	15	15	19	18
Manganese, Total	mg/L	50	S	10	13	33	30	33	30	40	42	100	110	21	24
Nitrate as Nitrogen	mg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.48	0.38
Nitrate (as NO3)	mg/L	45	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.1	1.6
Nitrite, as Nitrogen	mg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/L	-		2.8	2.9	4.3	4.2	2.8	2.6	2.7	2.7	4.1	4.1	4	4
Sodium, Total	mg/L	-		210	220	100	94	56	50	44	41	47	41	54	48
Sulfate	mg/L	500	S	ND	ND	ND	ND	57	55	80	78	87	84	100	100
Surfactants	mg/L	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/L	1000	S	590	570	340	330	300	270	370	350	380	370	470	440
Total Nitrogen, Nitrate+Nitrite	mg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.48	0.38
Total Organic Carbon	mg/L	-		15	14	3.3	2.9	0.74	0.72	1.3	0.56	ND	ND	0.32	ND
General Physical Properties															
Apparent Color	ACU	15	S	200	150	35	30	10	10	3	ND	5	3	ND	ND
Lab pH	Units	-		8.4	8.2	8.1	8	8.2	8	8.2	8	8.2	8	8	8
Odor	TON	3	S	1	3	2	1	ND	1	1	2	ND	2	ND	ND
Specific Conductance	µmho/cm	1600	S	900	910	560	560	480	480	590	590	630	620	760	740
Turbidity	NTU	5	S	1.4	4.1	1.2	1.8	0.21	0.18	0.16	0.13	2	2.5	1.5	1.8
Metals															
Aluminum, Total	µg/L	1000	P	ND	ND	22	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	µg/L	10	P	2.8	3.4	ND	ND	ND	ND	1.2	ND	1.6	1.4	4.7	3.8
Barium, Total	µg/L	1000	P	12	13	18	16	23	26	33	38	89	85	70	69
Beryllium, Total	µg/L	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	µg/L	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	µg/L	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	µg/L	-		ND	0.037	ND	ND	ND	ND	ND	ND	ND	ND	0.64	0.75
Lead, Total	µg/L	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total	µg/L	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	7.2	6.6
Silver, Total	µg/L	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	µg/L	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds															
1,1-Dichloroethane	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	µg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	µg/L	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-Isopropyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/L	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	µg/L	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	µg/L	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Trihalomethanes	µg/L	80	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	µg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride (VC)	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (Total)	µg/L	1750	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 (N): Notification Level (A): Action Level (ND): Not Detected

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2012-13

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Constituents	Units	MCL	MCL Type	Downey #1											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				4/25/13	9/11/13	4/25/13	9/11/13	4/25/13	9/11/13	4/25/13	9/11/13	4/25/13	9/11/13	4/25/13	9/11/13
General Minerals															
Alkalinity	mg/L	-		150	150	150	150	170	170	190	190	210	210	340	340
Anion Sum	meq/L	-		3.6	3.5	6.4	6.2	8.1	7.9	9.2	9	7.6	7.1	15	15
Bicarbonate as HCO3	mg/L	-		180	180	190	180	210	200	230	230	250	250	420	410
Boron	mg/L	1	N	0.054	0.052	0.061	0.062	0.094	0.089	0.2	0.18	0.088	0.086	0.22	0.21
Calcium, Total	mg/L	-		40	40	79	80	98	97	95	92	96	89	170	160
Carbon Dioxide	mg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.1
Cation Sum	meq/l	-		3.7	3.7	6.3	6.3	8	7.8	9.2	8.8	7.8	7.1	15	15
Chloride	mg/L	500	S	5.4	5.2	40	39	70	68	83	79	45	39	97	95
Fluoride	mg/L	2	P	0.3	0.33	0.28	0.28	0.32	0.33	0.37	0.38	0.39	0.41	0.32	0.32
Hardness (Total, as CaCO3)	mg/L	-		120	120	250	250	320	320	320	310	320	290	570	550
Iron, Total	mg/L	0.3	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None	-		0.57	0.24	0.76	0.62	0.84	0.74	0.75	0.73	0.89	0.83	1.1	1.3
Magnesium, Total	None	-		5.9	5.7	13	13	18	18	20	19	19	17	35	33
Manganese, Total	mg/L	50	S	ND	ND	ND	ND	ND	ND	2.2	2.9	130	120	85	91
Nitrate as Nitrogen	mg/L	10	P	ND	ND	2.2	2.1	3.3	3.2	1.9	1.8	ND	ND	ND	ND
Nitrate (as NO3)	mg/L	45	P	ND	ND	9.5	9.2	15	14	8.4	8.1	ND	ND	ND	ND
Nitrite, as Nitrogen	mg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/L	-		3.1	3	3.7	3.6	3.6	3.6	4.6	4.5	4	3.7	6.1	6
Sodium, Total	mg/L	-		27	26	28	27	34	33	63	59	29	27	88	82
Sulfate	mg/L	500	S	18	18	95	93	120	110	140	140	100	87	270	260
Surfactants	mg/L	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/L	1000	S	210	200	380	390	500	460	570	520	450	410	930	870
Total Nitrogen, Nitrate+Nitrite	mg/L	10	P	ND	ND	2.2	2.1	3.3	3.2	1.9	1.8	ND	ND	ND	ND
Total Organic Carbon	mg/L	-		ND	ND	ND	0.37	0.4	0.3	0.53	0.9	0.32	0.32	0.68	0.68
General Physical Properties															
Apparent Color	ACU	15	S	ND	ND	ND	ND	ND	ND	ND	ND	10	ND	5	3
Lab pH	Units	-		8.1	7.8	8	7.9	8	7.9	7.9	7.8	8	7.9	7.7	7.9
Odor	TON	3	S	1	ND	1	ND	2	ND	1	ND	1	1	2	ND
Specific Conductance	µmho/cm	1600	S	340	350	600	610	750	780	860	880	700	670	1300	1400
Turbidity	NTU	5	S	0.095	0.091	0.52	0.61	0.12	0.54	0.3	0.35	18	1.8	0.46	6.8
Metals															
Aluminum, Total	µg/L	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	µg/L	10	P	3	2.8	2.4	2.6	3.2	2.3	2.4	1.3	4.5	3.6	3.1	1.6
Barium, Total	µg/L	1000	P	91	98	160	160	130	140	82	90	230	230	64	68
Beryllium, Total	µg/L	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	µg/L	50	P	3.4	3.9	1.6	2.4	ND	1.3	ND	ND	ND	ND	ND	ND
Copper, Total	µg/L	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	µg/L	-		3.9	3.7	1.9	1.8	1.2	1.2	0.3	0.3	ND	ND	ND	ND
Lead, Total	µg/L	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total	µg/L	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total	µg/L	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	µg/L	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds															
1,1-Dichloroethane	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	µg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	µg/L	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-Isopropyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/L	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	µg/L	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	µg/L	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	µg/L	6	P	ND	ND	3.4	3.3	2.6	2.4	ND	ND	ND	ND	ND	ND
Styrene	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	µg/L	5	P	ND	ND	ND	ND	0.62	0.65	ND	ND	ND	ND	ND	ND
Toluene	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Trihalomethanes	µg/L	80	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	µg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	0.74	0.6	ND	ND
Vinyl chloride (VC)	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (Total)	µg/L	1750	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 (N): Notification Level (A): Action Level (ND): Not Detected

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2012-13

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Constituents	Units	MCL	MCL Type	Huntington Park #1							
				Zone 1		Zone 2		Zone 3		Zone 4	
				5/15/13	9/23/13	5/15/13	9/23/13	5/15/13	9/23/13	5/15/13	9/23/13
General Minerals											
Alkalinity	mg/L	-		180	180	170	180	250	250	350	360
Anion Sum	meq/L	-		6.2	6.1	5.9	6.1	11	11	13	13
Bicarbonate as HCO3	mg/L	-		210	210	200	220	310	300	420	430
Boron	mg/L	1	N	0.14	0.14	0.14	0.14	0.23	0.24	0.18	0.18
Calcium, Total	mg/L	-		63	62	63	62	130	120	150	150
Carbon Dioxide	mg/L	-		ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/L	-		ND	ND	ND	ND	ND	ND	2.3	ND
Cation Sum	meq/l	-		6.3	6.1	6.4	6.2	12	11	14	13
Chloride	mg/L	500	S	23	23	23	24	90	85	81	80
Fluoride	mg/L	2	P	0.47	0.49	0.42	0.44	0.33	0.35	0.34	0.37
Hardness (Total, as CaCO3)	mg/L	-		220	220	220	220	450	420	530	530
Iron, Total	mg/L	0.3	S	0.3	0.28	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None	-		0.62	0.56	0.78	0.66	1.1	1	1.3	1.2
Magnesium, Total	None	-		16	15	16	15	32	30	38	38
Manganese, Total	µg/L	50	S	42	44	ND	ND	4.7	5.4	ND	ND
Nitrate as Nitrogen	mg/L	10	P	ND	ND	0.29	0.35	2.4	1.6	4.5	4.2
Nitrate (as NO3)	mg/L	45	P	ND	ND	1.3	1.5	10	7	20	18
Nitrite, as Nitrogen	mg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/L	-		3.5	3.3	3.4	3.3	4.7	4.4	5	5.1
Sodium, Total	mg/L	-		42	39	43	40	63	59	65	62
Sulfate	mg/L	500	S	94	91	88	86	170	160	170	170
Surfactants	mg/L	0.5	S	ND	ND	ND	ND	0.54	1	ND	0.057
Total Dissolved Solid (TDS)	mg/L	1000	S	370	380	360	370	700	690	780	840
Total Nitrogen, Nitrate+Nitrite	mg/L	10	P	ND	ND	0.29	0.35	2.4	1.6	4.5	4.2
Total Organic Carbon	mg/L	-		ND	ND	ND	ND	5.2	5.4	0.58	0.59
General Physical Properties											
Apparent Color	ACU	15	S	5	3	ND	ND	3	ND	ND	ND
Lab pH	Units	-		7.9	7.9	8.1	8	8	7.9	7.9	7.8
Odor	TON	3	S	ND	ND	ND	ND	2	1	2	1
Specific Conductance	µmho/cm	1600	S	590	590	590	590	1100	1000	1200	1200
Turbidity	NTU	5	S	2.4	2.1	0.14	0.22	0.14	0.4	0.17	0.57
Metals											
Aluminum, Total	µg/L	1000	P	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	µg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Barium, Total	µg/L	1000	P	59	64	64	71	130	140	96	120
Beryllium, Total	µg/L	4	P	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	µg/L	50	P	ND	ND	ND	ND	ND	ND	1.3	1.7
Copper, Total	µg/L	1300	P	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	µg/L	-		ND	ND	0.83	0.9	0.22	0.19	1.8	1.7
Lead, Total	µg/L	15	P	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total	µg/L	50	P	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total	µg/L	100	S	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	µg/L	5000	S	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds											
1,1-Dichloroethane	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	0.64	0.76	ND	ND
1,2-Dichloroethane	µg/L	0.5	P	ND	ND	ND	ND	4.8	5.4	0.73	1.4
Benzene	µg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	µg/L	70	P	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	0.9	1.1	ND	ND
Di-Isopropyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	34
Ethylbenzene	µg/L	300	P	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	µg/L	1200	P	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	µg/L	13	P	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	µg/L	6	P	ND	ND	ND	ND	5.5	3.4	2.7	2.5
Styrene	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	µg/L	5	P	ND	ND	ND	ND	2.1	1.5	0.67	0.67
Toluene	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND
Total Trihalomethanes	µg/L	80	P	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	µg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	µg/L	5	P	ND	ND	ND	ND	12	12	0.56	ND
Vinyl chloride (VC)	µg/L	0.5	P	ND	ND	ND	ND	ND	0.31	ND	ND
Xylenes (Total)	µg/L	1750	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 (N): Notification Level (A): Action Level (ND): Not Detected

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2012-13

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Constituents	Units	MCL	MCL Type	Inglewood #2		
				Zone 1	Zone 2	Zone 3
				4/23/13	4/23/13	4/23/13
General Minerals						
Alkalinity	mg/L	-		1400	830	220
Anion Sum	meq/L	-		29	22	5
Bicarbonate as HCO3	mg/L	-		1700	1000	260
Boron	mg/L	1	N	3.5	1.8	0.21
Calcium, Total	mg/L	-		17	52	34
Carbon Dioxide	mg/L	-		ND	ND	ND
Carbonate as CO3	mg/L	-		17	9.7	ND
Cation Sum	meq/l	-		28	22	5.4
Chloride	mg/L	500	S	29	210	21
Fluoride	mg/L	2	P	0.36	0.22	0.3
Hardness (Total, as CaCO3)	mg/L	-		110	220	120
Iron, Total	mg/L	0.3	S	0.6	0.52	0.28
Langelier Index - 25 degree	None	-		1.2	1.4	0.54
Magnesium, Total	None	-		18	21	9.2
Manganese, Total	µg/L	50	S	23	69	66
Nitrate as Nitrogen	mg/L	10	P	ND	ND	ND
Nitrate (as NO3)	mg/L	45	P	ND	ND	ND
Nitrite, as Nitrogen	mg/L	1	P	ND	ND	ND
Potassium, Total	mg/L	-		23	14	5.9
Sodium, Total	mg/L	-		590	400	64
Sulfate	mg/L	500	S	ND	ND	ND
Surfactants	mg/L	0.5	S	ND	ND	ND
Total Dissolved Solid (TDS)	mg/L	1000	S	1600	1200	300
Total Nitrogen, Nitrate+Nitrite	mg/L	10	P	ND	ND	ND
Total Organic Carbon	mg/L	-		42	12	2.4
General Physical Properties						
Apparent Color	ACU	15	S	350	50	10
Lab pH	Units	-		8.2	8.2	8
Odor	TON	3	S	17	3	4
Specific Conductance	µmho/cm	1600	S	2500	2100	500
Turbidity	NTU	5	S	1.7	3.8	2.6
Metals						
Aluminum, Total	µg/L	1000	P	ND	ND	ND
Antimony, Total	µg/L	6	P	ND	ND	ND
Arsenic, Total	µg/L	10	P	3.1	4.1	ND
Barium, Total	µg/L	1000	P	44	29	25
Beryllium, Total	µg/L	4	P	ND	ND	ND
Cadmium, Total	µg/L	5	P	ND	ND	ND
Chromium, Total	µg/L	50	P	2	ND	ND
Copper, Total	µg/L	1300	P	ND	ND	ND
Hexavalent Chromium (Cr VI)	µg/L	-		ND	ND	ND
Lead, Total	µg/L	15	P	ND	ND	ND
Mercury	µg/L	2	P	ND	ND	ND
Nickel, Total	µg/L	100	P	ND	ND	ND
Selenium, Total	µg/L	50	P	ND	ND	ND
Silver, Total	µg/L	100	S	ND	ND	ND
Thallium, Total	µg/L	2	P	ND	ND	ND
Zinc, Total	µg/L	5000	S	ND	ND	ND
Volatile Organic Compounds						
1,1-Dichloroethane	µg/L	5	P	ND	ND	ND
1,1-Dichloroethylene	µg/L	6	P	ND	ND	ND
1,2-Dichloroethane	µg/L	0.5	P	ND	ND	ND
Benzene	µg/L	1	P	ND	ND	ND
Carbon Tetrachloride	µg/L	0.5	P	ND	ND	ND
Chlorobenzene	µg/L	70	P	ND	ND	ND
Chloromethane	µg/L	-		ND	ND	ND
cis-1,2-Dichloroethylene	µg/L	6	P	ND	ND	ND
Di-Isopropyl Ether	µg/L	-		ND	ND	ND
Ethylbenzene	µg/L	300	P	ND	ND	ND
Ethyl Tert Butyl Ether	µg/L	-		ND	ND	ND
Freon 11	µg/L	150	P	ND	ND	ND
Freon 113	µg/L	1200	P	ND	ND	ND
Methylene Chloride	µg/L	5	P	ND	ND	ND
MTBE	µg/L	13	P	ND	ND	ND
Perchlorate	µg/L	6	P	ND	ND	ND
Styrene	µg/L	100	P	ND	ND	ND
Tert Amyl Methyl Ether	µg/L	-		ND	ND	ND
Tetrachloroethylene (PCE)	µg/L	5	P	ND	ND	ND
Toluene	µg/L	150	P	ND	ND	ND
Total Trihalomethanes	µg/L	80	P	ND	ND	ND
trans-1,2-Dichloroethylene	µg/L	10	P	ND	ND	ND
Trichloroethylene (TCE)	µg/L	5	P	ND	ND	ND
Vinyl chloride (VC)	µg/L	0.5	P	ND	ND	ND
Xylenes (Total)	µg/L	1750	P	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level (A): Action Level (ND): Not Detected

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2012-13

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Constituents	Units	MCL	MCL Type	Lakewood #1											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				4/19/13	9/23/13	4/19/13	9/23/13	4/19/13	9/23/13	4/19/13	9/23/13	4/19/13	9/23/13	4/19/13	9/23/13
General Minerals															
Alkalinity	mg/L	-		90	94	140	130	150	150	170	160	170	170	200	190
Anion Sum	meq/L	-		2.7	2.8	3.3	3.2	3.6	3.6	4.9	4.6	4	4.1	7.4	7.1
Bicarbonate as HCO3	mg/L	-		110	110	170	160	180	180	200	200	200	210	240	240
Boron	mg/L	1	N	ND	0.055	ND	ND	0.06	0.068	0.063	0.068	0.075	0.088	0.075	0.083
Calcium, Total	mg/L	-		9.3	9.8	31	33	36	39	53	50	44	47	92	92
Carbon Dioxide	mg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/L	-		2.8	3.6	2.3	2.1	2.3	2.3	2.5	2	ND	ND	2	ND
Cation Sum	meq/l	-		2.7	2.8	3.2	3.4	3.5	3.8	4.7	4.7	3.9	4.2	7.2	7.1
Chloride	mg/L	500	S	21	20	6.4	6.3	9.3	8.8	42	40	12	11	92	86
Fluoride	mg/L	2	P	0.43	0.46	0.26	0.28	0.3	0.32	0.26	0.32	0.47	0.5	0.2	0.23
Hardness (Total, as CaCO3)	mg/L	-		25	26	92	98	110	120	160	150	140	150	270	270
Iron, Total	mg/L	0.3	S	ND	ND	ND	ND	ND	ND	0.063	0.054	0.09	0.099	0.096	0.1
Langelier Index - 25 degree	None	-		0.16	0.32	0.59	0.6	0.67	0.68	0.87	0.77	0.67	0.67	1	0.84
Magnesium, Total	None	-		0.34	0.35	3.6	3.8	4.7	5	6.5	5.8	8.3	8.7	9.6	9.6
Manganese, Total	mg/L	50	S	3.4	3.6	16	20	22	24	92	86	48	53	240	240
Nitrate as Nitrogen	mg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/L	45	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, as Nitrogen	mg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/L	-		1	ND	2	2.1	2.6	2.3	3.1	2.9	2.8	2.7	4.2	3.8
Sodium, Total	mg/L	-		50	54	29	31	28	30	33	38	23	24	39	38
Sulfate	mg/L	500	S	15	15	16	16	15	15	16	14	14	13	40	38
Surfactants	mg/L	0.5	S	ND	ND	ND	ND	ND	ND	ND	0.058	ND	ND	0.062	0.083
Total Dissolved Solid (TDS)	mg/L	1000	S	180	170	230	210	220	220	290	290	260	240	480	460
Total Nitrogen, Nitrate+Nitrite	mg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/L	-		0.88	0.74	ND	ND	ND	0.32	0.6	0.6	ND	ND	0.8	0.72
General Physical Properties															
Apparent Color	ACU	15	S	10	15	ND	ND	ND	ND	ND	3	ND	ND	ND	ND
Lab pH	Units	-		8.6	8.7	8.3	8.3	8.3	8.3	8.3	8.2	8.2	8.1	8.1	8
Odor	TON	3	S	3	ND	1	ND	1	ND	2	ND	2	ND	3	ND
Specific Conductance	µmho/cm	1600	S	290	290	320	320	360	360	490	470	400	400	750	720
Turbidity	NTU	5	S	0.19	2.3	0.12	0.55	0.89	1.1	0.24	0.3	0.34	0.32	0.32	1.3
Metals															
Aluminum, Total	µg/L	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	µg/L	10	P	11	12	6.9	7.7	1	1	10	9.4	3.4	3.7	26	28
Barium, Total	µg/L	1000	P	16	16	23	26	30	30	170	160	110	110	280	270
Beryllium, Total	µg/L	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	µg/L	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	µg/L	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	µg/L	-		ND	0.051	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total	µg/L	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total	µg/L	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total	µg/L	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	µg/L	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds															
1,1-Dichloroethane	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	µg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	µg/L	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-Isopropyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/L	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	µg/L	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	µg/L	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Trihalomethanes	µg/L	80	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	µg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride (VC)	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (Total)	µg/L	1750	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 (N): Notification Level (A): Action Level (ND): Not Detected

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2012-13

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Constituents	Units	MCL	MCL Type	Lakewood #2							
				Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 7	Zone 8
				10/16/13	10/16/13	10/16/13	10/16/13	10/16/13	10/16/13	10/16/13	10/16/13
General Minerals											
Alkalinity	mg/L	-		96	120	120	160	160	190	170	180
Anion Sum	meq/L	-		3.4	2.8	2.9	4.5	3.7	4.5	3.9	4
Bicarbonate as HCO3	mg/L	-		110	140	150	200	190	230	200	220
Boron	mg/L	1	N	0.062	0.052	ND	0.064	0.058	0.065	0.061	0.076
Calcium, Total	mg/L	-		8.7	21	25	57	41	28	47	46
Carbon Dioxide	mg/L	-		ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/L	-		4.5	2.3	2.4	ND	2	3	2	ND
Cation Sum	meq/l	-		3.9	3.3	3.2	4.9	4.2	5.2	4.3	4.8
Chloride	mg/L	500	S	14	5.6	5.8	12	6	7.6	5.8	6.7
Fluoride	mg/L	2	P	0.45	0.33	0.27	0.42	0.36	0.41	0.24	0.39
Hardness (Total, as CaCO3)	mg/L	-		23	65	72	180	120	88	130	140
Iron, Total	mg/L	0.3	S	ND	ND	ND	ND	0.03	0.03	0.088	0.052
Langelier Index - 25 degree	None	-		0.3	0.42	0.52	0.65	0.7	0.64	0.7	0.67
Magnesium, Total	None	-		0.38	3.1	2.4	9.1	3.7	4.4	3.6	6.1
Manganese, Total	µg/L	50	S	4.8	10	16	16	56	73	92	120
Nitrate as Nitrogen	mg/L	10	P	ND	ND	ND	0.4	ND	ND	ND	ND
Nitrate (as NO3)	mg/L	45	P	ND	ND	ND	1.8	ND	ND	ND	ND
Nitrite, as Nitrogen	mg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/L	-		1.4	2.4	1.9	3.2	2.4	2.7	2.7	2.7
Sodium, Total	mg/L	-		78	43	38	29	40	77	37	44
Sulfate	mg/L	500	S	54	14	12	39	17	20	17	8.3
Surfactants	mg/L	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/L	1000	S	240	190	180	280	230	280	260	260
Total Nitrogen, Nitrate+Nitrite	mg/L	10	P	ND	ND	ND	0.4	ND	ND	ND	ND
Total Organic Carbon	mg/L	-		1.4	0.77	0.63	0.4	0.99	3	0.78	1.6
General Physical Properties											
Apparent Color	ACU	15	S	10	5	10	ND	3	10	5	3
Lab pH	Units	-		8.8	8.4	8.4	8	8.2	8.3	8.2	8.1
Odor	TON	3	S	2	2	2	2	8	2	2	2
Specific Conductance	µmho/cm	1600	S	390	310	300	470	390	460	390	430
Turbidity	NTU	5	S	1	0.51	0.43	0.31	1.2	1.5	3.6	0.4
Metals											
Aluminum, Total	µg/L	1000	P	25	ND	ND	ND	ND	ND	55	ND
Antimony, Total	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	µg/L	10	P	17	1.3	2.8	4.8	26	32	45	72
Barium, Total	µg/L	1000	P	11	5.6	9.1	84	100	43	99	84
Beryllium, Total	µg/L	4	P	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	µg/L	50	P	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	µg/L	1300	P	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	µg/L	-		0.022	ND	ND	0.66	ND	ND	ND	ND
Lead, Total	µg/L	15	P	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total	µg/L	50	P	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total	µg/L	100	S	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	µg/L	5000	S	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds											
1,1-Dichloroethane	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	µg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	µg/L	70	P	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND
Di-Isopropyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/L	300	P	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	µg/L	1200	P	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	µg/L	13	P	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	µg/L	6	P	ND	ND	ND	0.65	ND	ND	ND	ND
Styrene	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND
Total Trihalomethanes	µg/L	80	P	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	µg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride (VC)	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (Total)	µg/L	1750	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 (N): Notification Level (A): Action Level (ND): Not Detected

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2012-13

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Constituents	Units	MCL	MCL Type	La Mirada #1									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				4/12/13	9/3/13	4/12/13	9/3/13	4/12/13	9/3/13	4/12/13	9/3/13	4/12/13	9/3/13
General Minerals													
Alkalinity	mg/L	-		150	140	140	130	180	170	180	180	180	160
Anion Sum	meq/L	-		5.6	5.4	4.2	4	5.3	5.2	6.8	7.1	14	16
Bicarbonate as HCO3	mg/L	-		180	160	160	160	220	210	220	220	220	200
Boron	mg/L	1	N	0.14	0.12	0.1	0.082	0.14	0.12	0.13	0.11	0.16	0.13
Calcium, Total	mg/L	-		15	14	9.8	9.4	20	21	49	49	110	140
Carbon Dioxide	mg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/L	-		2.7	ND	3	ND	2.3	ND	ND	ND	ND	ND
Cation Sum	meq/l	-		5.9	6	4.4	4.4	5.5	5.7	7.2	7.5	14	17
Chloride	mg/L	500	S	25	26	15	15	16	18	46	51	240	340
Fluoride	mg/L	2	P	0.8	0.82	0.57	0.58	0.74	0.77	0.53	0.57	0.36	0.3
Hardness (Total, as CaCO3)	mg/L	-		50	51	30	30	77	83	200	200	440	540
Iron, Total	mg/L	0.3	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None	-		0.34	-0.052	0.21	-0.28	0.41	-0.012	0.55	0.32	0.72	0.63
Magnesium, Total	None	-		3.3	3.5	1.4	1.5	6.5	7.5	18	18	40	46
Manganese, Total	mg/L	50	S	9.8	10	2.6	2.6	16	16	34	10	24	ND
Nitrate as Nitrogen	mg/L	10	P	ND	ND	ND	ND	ND	ND	ND	0.28	16	22
Nitrate (as NO3)	mg/L	45	P	ND	ND	ND	ND	ND	ND	ND	1.2	71	99
Nitrite, as Nitrogen	mg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/L	-		2.1	2.5	1.7	1.8	2.5	2.7	2.8	3.2	4.2	4.9
Sodium, Total	mg/L	-		110	110	87	87	90	92	73	80	120	140
Sulfate	mg/L	500	S	92	92	47	47	57	56	92	94	96	100
Surfactants	mg/L	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/L	1000	S	340	320	250	230	310	310	430	410	820	1200
Total Nitrogen, Nitrate+Nitrite	mg/L	10	P	ND	ND	ND	ND	ND	ND	ND	0.28	16	22
Total Organic Carbon	mg/L	-		0.31	0.42	ND	ND	0.46	0.47	ND	ND	ND	0.63
General Physical Properties													
Apparent Color	ACU	15	S	ND	3	ND	ND	ND	ND	ND	ND	ND	3
Lab pH	Units	-		8.4	8	8.4	8	8.2	7.8	8	7.7	7.8	7.6
Odor	TON	3	S	ND	ND	1	ND	1	ND	ND	ND	ND	ND
Specific Conductance	µmho/cm	1600	S	580	580	420	420	520	530	690	720	1400	1800
Turbidity	NTU	5	S	0.13	0.15	0.15	0.056	0.14	0.22	0.15	0.3	0.14	0.17
Metals													
Aluminum, Total	µg/L	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	µg/L	10	P	5.7	6.1	7.2	7.8	7	7.3	3	3.6	1.3	3.1
Barium, Total	µg/L	1000	P	52	54	25	26	40	37	45	43	100	120
Beryllium, Total	µg/L	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	µg/L	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.9
Copper, Total	µg/L	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.3
Hexavalent Chromium (Cr VI)	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	1.1	1.9
Lead, Total	µg/L	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total	µg/L	50	P	ND	ND	ND	ND	ND	ND	ND	5	9	14
Silver, Total	µg/L	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	µg/L	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds													
1,1-Dichloroethane	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	µg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	µg/L	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-Isopropyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/L	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	µg/L	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	µg/L	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	6.4	9.3
Styrene	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Trihalomethanes	µg/L	80	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	µg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride (VC)	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (Total)	µg/L	1750	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 (N): Notification Level (A): Action Level (ND): Not Detected

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2012-13

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Constituents	Units	MCL	MCL Type	Long Beach #1											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				4/5/13	9/18/13	4/5/13	9/18/13	4/5/13	9/18/13	4/5/13	9/18/13	4/5/13	9/18/13	4/5/13	9/18/13
General Minerals															
Alkalinity	mg/L	-		140	150	150	150	120	120	130	120	130	130	240	240
Anion Sum	meq/L	-		3.3	3.5	3.4	3.4	3	3	3.6	3.6	12	12	16	17
Bicarbonate as HCO3	mg/L	-		170	180	180	170	140	140	150	150	160	160	290	290
Boron	mg/L	1	N	0.17	0.17	0.16	0.17	0.081	0.08	0.06	0.061	0.12	0.12	0.1	0.1
Calcium, Total	mg/L	-		2	2.1	2.4	2.4	5.2	4.9	23	22	61	57	180	180
Carbon Dioxide	mg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/L	-		11	12	11	11	6.5	4.6	2.5	2.4	ND	ND	ND	ND
Cation Sum	meq/l	-		3.6	3.4	3.6	3.5	3	2.9	3.8	3.6	12	12	16	16
Chloride	mg/L	500	S	15	15	14	14	12	12	12	12	180	180	200	210
Fluoride	mg/L	2	P	0.65	0.64	0.6	0.59	0.64	0.63	0.38	0.38	0.24	0.25	0.26	0.25
Hardness (Total, as CaCO3)	mg/L	-		5.9	6.1	6.4	6.5	14	13	66	63	190	180	590	590
Iron, Total	mg/L	0.3	S	ND	0.02	ND	ND	ND	ND	ND	ND	0.034	0.034	0.16	0.16
Langelier Index - 25 degree	None	-		0.086	0.11	0.16	0.13	0.27	0.061	0.5	0.44	0.63	0.66	1.2	1.2
Magnesium, Total	None	-		0.19	0.2	0.13	0.13	0.27	0.25	2.2	2	9	8.5	32	32
Manganese, Total	mg/L	50	S	2.5	2.6	ND	ND	2.2	2.9	19	20	58	63	360	460
Nitrate as Nitrogen	mg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/L	45	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, as Nitrogen	mg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/L	-		ND	ND	ND	ND	ND	ND	1.3	1.4	3.1	3.2	4.3	4.3
Sodium, Total	mg/L	-		81	76	81	77	64	61	55	53	200	190	98	100
Sulfate	mg/L	500	S	ND	ND	ND	ND	14	14	34	33	220	210	290	290
Surfactants	mg/L	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/L	1000	S	210	200	210	200	190	170	220	210	780	760	1000	1000
Total Nitrogen, Nitrate+Nitrite	mg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/L	-		3.1	2.5	3.1	2.5	1.8	1.5	0.63	0.52	1.3	1.4	1.4	1.3
General Physical Properties															
Apparent Color	ACU	15	S	90	150	60	100	40	25	5	10	5	5	5	5
Lab pH	Units	-		9	9	9	9	8.9	8.7	8.4	8.4	8.1	8.1	7.9	8
Odor	TON	3	S	2	2	1	1	ND		ND	1	ND	1	1	1
Specific Conductance	µmho/cm	1600	S	350	350	340	340	310	300	370	360	1300	1300	1600	1600
Turbidity	NTU	5	S	0.39	0.2	0.3	0.26	0.56	0.14	0.96	0.52	1.3	0.42	0.72	1.2
Metals															
Aluminum, Total	µg/L	1000	P	35	52	30	27	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	µg/L	10	P	1.1	ND	1	ND	ND	ND	ND	ND	3.8	ND	10	7.1
Barium, Total	µg/L	1000	P	ND	ND	ND	ND	ND	ND	8.2	9.3	47	48	210	250
Beryllium, Total	µg/L	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	µg/L	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	µg/L	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	µg/L	-		0.039	0.084	0.039	0.074	0.041	0.099	ND	ND	ND	ND	ND	ND
Lead, Total	µg/L	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total	µg/L	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total	µg/L	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	µg/L	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds															
1,1-Dichloroethane	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	µg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	µg/L	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-Isopropyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/L	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	µg/L	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	µg/L	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Trihalomethanes	µg/L	80	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	µg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride (VC)	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (Total)	µg/L	1750	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 (N): Notification Level (A): Action Level (ND): Not Detected

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2012-13

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Constituents	Units	MCL	MCL Type	Long Beach #2											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				5/2/13	9/16/13	5/2/13	9/16/13	5/2/13	9/16/13	5/2/13	9/16/13	5/2/13	9/16/13	5/2/13	9/16/13
General Minerals															
Alkalinity	mg/L	-		310	300	190	190	140	150	140	140	300	300	300	310
Anion Sum	meq/L	-		6.8	6.6	4.5	4.3	3.6	3.6	5.5	5.7	18	18	21	21
Bicarbonate as HCO3	mg/L	-		370	360	230	230	170	180	160	180	370	370	370	370
Boron	mg/L	1	N	0.51	0.52	0.18	0.19	0.13	0.13	0.088	0.093	0.28	0.29	0.32	0.33
Calcium, Total	mg/L	-		6.8	7.1	14	15	12	12	49	50	200	200	240	240
Carbon Dioxide	mg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/L	-		3.3	5.9	ND	3	3.1	3.7	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l	-		6.8	7.1	4.6	4.6	3.8	3.8	5.9	5.8	18	18	22	21
Chloride	mg/L	500	S	22	22	21	20	25	24	50	50	140	140	180	170
Fluoride	mg/L	2	P	0.59	0.59	0.4	0.41	0.5	0.5	0.27	0.28	0.14	0.15	0.25	0.26
Hardness (Total, as CaCO3)	mg/L	-		23	24	43	44	35	35	150	150	620	620	760	750
Iron, Total	mg/L	0.3	S	0.14	0.17	0.024	0.021	ND	ND	ND	ND	0.26	0.25	0.25	0.24
Langelier Index - 25 degree	None	-		0.1	0.39	0.2	0.41	0.32	0.37	0.69	0.7	1.2	1.1	1.3	1.2
Magnesium, Total	None	-		1.5	1.5	1.7	1.7	1.2	1.1	5.7	5.6	32	31	39	38
Manganese, Total	mg/L	50	S	13	16	16	16	6	6.1	29	28	200	200	370	380
Nitrate as Nitrogen	mg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/L	45	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, as Nitrogen	mg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/L	-		2.4	2.6	1.9	2	1.4	1.4	3.1	3.3	5.5	6.1	6.3	7.2
Sodium, Total	mg/L	-		140	150	84	85	72	70	66	65	130	130	140	140
Sulfate	mg/L	500	S	ND	ND	ND	ND	1.9	0.68	66	65	380	380	480	460
Surfactants	mg/L	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.1
Total Dissolved Solid (TDS)	mg/L	1000	S	420	420	280	260	230	220	360	330	1100	1100	1300	1300
Total Nitrogen, Nitrate+Nitrite	mg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/L	-		13	14	3.9	3.7	2.3	2.2	1.4	1.4	1.4	1.4	1.5	1.4
General Physical Properties															
Apparent Color	ACU	15	S	450	300	45	45	30	30	5	5	15	10	10	10
Lab pH	Units	-		8.1	8.4	8.1	8.3	8.4	8.5	8.2	8.2	7.8	7.7	7.8	7.7
Odor	TON	3	S	2	2	1	ND	ND	2	1	1	1	1	2	2
Specific Conductance	µmho/cm	1600	S	640	640	430	430	360	360	570	580	1600	1600	1900	1900
Turbidity	NTU	5	S	0.48	0.48	0.19	0.8	0.19	0.16	0.28	0.36	2.4	1.9	1.3	1.6
Metals															
Aluminum, Total	µg/L	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	µg/L	10	P	1.9	1.2	1.1	ND	ND	ND	2	ND	7.1	3.6	9.3	5.8
Barium, Total	µg/L	1000	P	6.2	6.7	9.3	10	5	5.1	31	34	69	78	82	94
Beryllium, Total	µg/L	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	µg/L	50	P	1.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	µg/L	1300	P	2.2	2.9	ND	ND	ND	ND	2.9	ND	8.2	ND	10	3.9
Hexavalent Chromium (Cr VI)	µg/L	-		ND	0.037	ND	ND	ND	0.048	ND	ND	ND	ND	ND	ND
Lead, Total	µg/L	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total	µg/L	50	P	ND	ND	ND	ND	5.3	ND	ND	ND	ND	ND	ND	ND
Silver, Total	µg/L	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	µg/L	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds															
1,1-Dichloroethane	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	µg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	µg/L	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	6.5	6.8
Di-Isopropyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/L	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	µg/L	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	µg/L	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	40	33
Perchlorate	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Trihalomethanes	µg/L	80	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	µg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.65	0.63
Trichloroethylene (TCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride (VC)	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (Total)	µg/L	1750	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 (N): Notification Level (A): Action Level (ND): Not Detected

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2012-13

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Constituents	Units	MCL	MCL Type	Long Beach #6											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				4/18/13	9/18/13	4/18/13	9/18/13	4/18/13	9/18/13	4/18/13	9/18/13	4/18/13	9/18/13	4/18/13	9/18/13
General Minerals															
Alkalinity	mg/L	-		540	510	480	480	160	160	150	160	110	120	130	130
Anion Sum	meq/L	-		11	11	10	10	3.6	3.7	3.6	3.7	3	3.1	4.4	4.4
Bicarbonate as HCO3	mg/L	-		650	620	580	580	190	190	180	190	130	140	150	150
Boron	mg/L	1	N	1	1.2	0.9	0.98	0.23	0.25	0.18	0.22	0.079	0.083	ND	ND
Calcium, Total	mg/L	-		7.6	8.5	7.2	7.2	4.9	4.9	5.8	6.1	11	11	45	44
Carbon Dioxide	mg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/L	-		13	13	12	15	7.5	7.8	6.5	6.2	3.1	3.6	ND	ND
Cation Sum	meq/l	-		11	13	10	10	3.8	3.8	3.7	3.9	3.1	3.1	4.5	4.4
Chloride	mg/L	500	S	21	18	21	19	17	17	17	17	20	19	55	55
Fluoride	mg/L	2	P	0.7	0.68	0.68	0.67	0.61	0.6	0.62	0.62	0.55	0.54	0.21	0.22
Hardness (Total, as CaCO3)	mg/L	-		26	29	24	24	13	13	16	17	31	30	130	130
Iron, Total	mg/L	0.3	S	0.089	0.1	0.098	0.1	0.03	0.032	0.026	0.029	ND	ND	0.047	0.057
Langelier Index - 25 degree	None	-		0.74	0.81	0.7	0.72	0.31	0.27	0.32	0.35	0.27	0.33	0.56	0.57
Magnesium, Total	None	-		1.7	1.8	1.4	1.4	0.26	0.24	0.35	0.35	0.78	0.75	4.9	4.9
Manganese, Total	mg/L	50	S	14	17	17	21	3.5	4.2	12	15	4.3	5	66	77
Nitrate as Nitrogen	mg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/L	45	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, as Nitrogen	mg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/L	-		1.8	2.2	1.6	1.8	ND	ND	ND	ND	1.1	1.1	2.3	2.2
Sodium, Total	mg/L	-		250	290	230	230	82	80	78	83	57	56	42	40
Sulfate	mg/L	500	S	ND	1.1	ND	ND	ND	ND	5	3.9	10	10	16	16
Surfactants	mg/L	0.5	S	ND	0.051	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/L	1000	S	660	660	610	600	230	220	220	210	190	170	260	260
Total Nitrogen, Nitrate+Nitrite	mg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/L	-		2.4	19	2.2	17	4.7	4.2	4	3.9	2.1	1.8	0.72	0.7
General Physical Properties															
Apparent Color	ACU	15	S	300	300	250	250	200	150	100	150	20	45	3	5
Lab pH	Units	-		8.5	8.5	8.5	8.6	8.8	8.8	8.8	8.7	8.6	8.6	8.2	8.2
Odor	TON	3	S	3	2	3	2	2	1	2	1	3	1	3	2
Specific Conductance	µmho/cm	1600	S	1000	1000	960	950	360	360	360	370	310	310	460	460
Turbidity	NTU	5	S	2.4	3.2	1.1	1.8	0.36	0.34	0.23	0.38	0.17	0.18	0.11	0.12
Metals															
Aluminum, Total	µg/L	1000	P	ND	20	ND	ND	ND	26	ND	25	ND	ND	ND	ND
Antimony, Total	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	µg/L	10	P	4	2.7	2.9	1.2	2.2	ND	2.2	ND	2.1	ND	2.9	2.3
Barium, Total	µg/L	1000	P	7.2	6.7	10	9.5	3.8	3.8	6.8	6.8	2.8	3	18	20
Beryllium, Total	µg/L	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	µg/L	50	P	ND	ND	ND	ND	ND	ND	1.2	ND	ND	ND	ND	ND
Copper, Total	µg/L	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	µg/L	-		0.03	0.043	0.034	0.041	0.051	0.037	0.043	0.04	0.022	0.037	ND	ND
Lead, Total	µg/L	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total	µg/L	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total	µg/L	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	µg/L	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds															
1,1-Dichloroethane	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	µg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	µg/L	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-Isopropyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/L	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	µg/L	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	µg/L	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Trihalomethanes	µg/L	80	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	µg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride (VC)	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (Total)	µg/L	1750	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 (N): Notification Level (A): Action Level (ND): Not Detected

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2012-13

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Constituents	Units	MCL	MCL Type	Los Angeles #1									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				5/14/13	9/23/13	5/14/13	9/23/13	5/14/13	9/23/13	5/14/13	9/23/13	5/14/13	9/23/13
General Minerals													
Alkalinity	mg/L	-		170	170	180	180	180	180	200	180	220	210
Anion Sum	meq/L	-		5.8	5.6	6	6	6.1	5.9	9.9	8.9	11	10
Bicarbonate as HCO3	mg/L	-		210	210	210	220	220	220	240	220	260	260
Boron	mg/L	1	N	0.15	0.15	0.13	0.14	0.15	0.15	0.19	0.18	0.18	0.19
Calcium, Total	mg/L	-		57	55	62	61	61	60	110	96	110	110
Carbon Dioxide	mg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/L	-		ND	ND	ND	ND	ND	ND	ND	2.8	ND	ND
Cation Sum	meq/l	-		6.1	5.8	6.3	6.1	6.2	6	11	9.3	11	10
Chloride	mg/L	500	S	25	24	22	22	23	22	74	64	83	78
Fluoride	mg/L	2	P	0.29	0.31	0.45	0.49	0.39	0.41	0.41	0.45	0.4	0.43
Hardness (Total, as CaCO3)	mg/L	-		200	190	220	210	220	210	400	340	400	390
Iron, Total	mg/L	0.3	S	ND	ND	0.19	0.18	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None	-		0.71	0.75	0.6	0.59	0.68	0.59	0.69	1.2	0.78	0.8
Magnesium, Total	None	-		14	13	16	15	16	15	29	25	30	29
Manganese, Total	µg/L	50	S	18	20	48	53	12	12	ND	ND	ND	ND
Nitrate as Nitrogen	mg/L	10	P	ND	ND	ND	ND	ND	ND	13	10	16	14
Nitrate (as NO3)	mg/L	45	P	ND	ND	ND	ND	ND	ND	56	44	68	63
Nitrite, as Nitrogen	mg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/L	-		4	3.9	3.6	3.4	3.4	3.2	4.7	4.4	4.7	4.6
Sodium, Total	mg/L	-		47	44	42	39	41	39	61	53	60	58
Sulfate	mg/L	500	S	79	74	85	82	86	83	140	130	140	130
Surfactants	mg/L	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/L	1000	S	350	360	350	370	350	370	590	590	640	660
Total Nitrogen, Nitrate+Nitrite	mg/L	10	P	ND	ND	ND	ND	ND	ND	13	10	16	14
Total Organic Carbon	mg/L	-		0.52	0.43	ND	0.42	ND	ND	0.48	0.43	0.52	0.4
General Physical Properties													
Apparent Color	ACU	15	S	ND	3	5	10	ND	ND	10	10	15	10
Lab pH	Units	-		8.1	8.1	7.9	7.9	8	7.9	7.7	8.3	7.8	7.8
Odor	TON	3	S	ND	ND	ND	1	1	ND	ND	ND	ND	ND
Specific Conductance	µmho/cm	1600	S	580	570	580	580	580	580	940	900	1000	1000
Turbidity	NTU	5	S	0.15	0.2	0.89	1	0.23	0.098	0.21	0.15	0.21	0.26
Metals													
Aluminum, Total	µg/L	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	µg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium, Total	µg/L	1000	P	29	31	45	49	68	70	130	130	140	160
Beryllium, Total	µg/L	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	µg/L	50	P	ND	ND	ND	ND	ND	ND	400	330	520	610
Copper, Total	µg/L	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	µg/L	-		ND	0.03	ND	ND	0.22	0.2	450	330	620	590
Lead, Total	µg/L	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total	µg/L	50	P	ND	ND	ND	ND	ND	ND	ND	ND	5.3	5.8
Silver, Total	µg/L	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	µg/L	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds													
1,1-Dichloroethane	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	µg/L	6	P	0.76	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	µg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	1.1	0.89	1.2	1.2
Chlorobenzene	µg/L	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-Isopropyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/L	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	µg/L	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	µg/L	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	µg/L	6	P	ND	ND	ND	ND	ND	ND	4.6	4.7	5.6	3.3
Styrene	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	µg/L	5	P	5.4	3	0.53	ND	ND	ND	2.7	2.7	2.5	2.1
Toluene	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Trihalomethanes	µg/L	80	P	ND	ND	ND	ND	ND	ND	0.56	0.51	0.66	0.58
trans-1,2-Dichloroethylene	µg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	µg/L	5	P	12	7.2	ND	ND	ND	ND	38	34	43	40
Vinyl chloride (VC)	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (Total)	µg/L	1750	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 (N): Notification Level (A): Action Level (ND): Not Detected

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2012-13

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Constituents	Units	MCL	MCL Type	Los Angeles #2					
				Zone 1	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5
				12/11/12	1/29/13	4/24/13	4/24/13	4/24/13	4/24/13
General Minerals									
Alkalinity	mg/L	-		540	560	300	300	330	300
Anion Sum	meq/L	-		290	300	19	19	21	22
Bicarbonate as HCO3	mg/L	-		660	680	360	370	400	360
Boron	mg/L	1	N	6.2	6.2	0.23	0.22	0.28	0.43
Calcium, Total	mg/L	-		200	210	190	200	210	190
Carbon Dioxide	mg/L	-		17	24	ND	ND	ND	ND
Carbonate as CO3	mg/L	-		2.8	2.1	ND	ND	ND	ND
Cation Sum	meq/l	-		300	280	19	19	21	22
Chloride	mg/L	500	S	10000	10000	220	280	340	170
Fluoride	mg/L	2	P	0.15	0.16	0.2	0.29	0.3	0.28
Hardness (Total, as CaCO3)	mg/L	-		1500	1500	700	720	760	720
Iron, Total	mg/L	0.3	S	0.2	15	0.18	1.3	1.8	0.084
Langelier Index - 25 degree	None	-		1.5	1.4	1.2	1.2	0.95	1
Magnesium, Total	None	-		230	240	53	52	56	62
Manganese, Total	µg/L	50	S	430	510	330	160	120	820
Nitrate as Nitrogen	mg/L	10	P	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/L	45	P	ND	ND	ND	ND	ND	ND
Nitrite, as Nitrogen	mg/L	1	P	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/L	-		56	59	9.4	7.1	7.8	11
Sodium, Total	mg/L	-		6100	5700	99	100	130	160
Sulfate	mg/L	500	S	8.5	11	310	260	250	540
Surfactants	mg/L	0.5	S		ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/L	1000	S	18000	17000	1100	1100	1200	1400
Total Nitrogen, Nitrate+Nitrite	mg/L	10	P	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/L	-		24	24	0.7	0.77	0.92	2.4
General Physical Properties									
Apparent Color	ACU	15	S			3	20	25	15
Lab pH	Units	-		7.8	7.7	7.8	7.7	7.5	7.6
Odor	TON	3	S			1	1	1	2
Specific Conductance	µmho/cm	1600	S	28000	28000	1700	1800	2000	1900
Turbidity	NTU	5	S			2.9	15	23	18
Metals									
Aluminum, Total	µg/L	1000	P	300	7600	ND	ND	ND	37
Antimony, Total	µg/L	6	P	ND	ND	ND	ND	ND	3.2
Arsenic, Total	µg/L	10	P	57	41	ND	ND	ND	6
Barium, Total	µg/L	1000	P	1000	930	77	170	210	50
Beryllium, Total	µg/L	4	P	ND	ND	ND	ND	ND	ND
Cadmium, Total	µg/L	5	P	ND	ND	ND	ND	ND	ND
Chromium, Total	µg/L	50	P	ND	13	ND	ND	ND	ND
Copper, Total	µg/L	1300	P	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	µg/L	-				ND	ND	ND	ND
Lead, Total	µg/L	15	P	ND	ND	ND	ND	ND	ND
Mercury	µg/L	2	P	ND	ND	ND	ND	ND	ND
Nickel, Total	µg/L	100	P	ND	ND	ND	ND	ND	ND
Selenium, Total	µg/L	50	P	160	85	ND	ND	ND	ND
Silver, Total	µg/L	100	S	ND	ND	ND	ND	ND	ND
Thallium, Total	µg/L	2	P	ND	ND	ND	ND	ND	ND
Zinc, Total	µg/L	5000	S	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds									
1,1-Dichloroethane	µg/L	5	P	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	µg/L	0.5	P	ND	ND	ND	ND	ND	ND
Benzene	µg/L	1	P	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	µg/L	0.5	P	ND	ND	ND	ND	ND	ND
Chlorobenzene	µg/L	70	P	ND	ND	ND	ND	ND	ND
Chloromethane	µg/L	-		ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	0.97
Di-Isopropyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/L	300	P	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND
Freon 11	µg/L	150	P	ND	ND	ND	ND	ND	ND
Freon 113	µg/L	1200	P	ND	ND	ND	ND	ND	ND
Methylene Chloride	µg/L	5	P	ND	ND	ND	ND	ND	ND
MTBE	µg/L	13	P	ND	ND	ND	ND	ND	ND
Perchlorate	µg/L	6	P			ND	ND	ND	ND
Styrene	µg/L	100	P	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND
Toluene	µg/L	150	P	ND	ND	ND	ND	ND	ND
Total Trihalomethanes	µg/L	80	P	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	µg/L	10	P	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND
Vinyl chloride (VC)	µg/L	0.5	P	ND	ND	ND	ND	ND	ND
Xylenes (Total)	µg/L	1750	P	ND	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level (A): Action Level (ND): Not Detected

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2012-13

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Constituents	Units	MCL	MCL Type	Los Angeles #3											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				5/31/13	9/24/13	5/31/13	9/24/13	5/31/13	9/24/13	5/31/13	9/24/13	5/31/13	9/24/13	5/31/13	9/24/13
General Minerals															
Alkalinity	mg/L	-		220	230	170	170	170	180	190	190	190	200	210	220
Anion Sum	meq/L	-		5.9	6.3	5.7	5.7	5.7	5.9	6.6	6.6	8.6	8.7	11	11
Bicarbonate as HCO3	mg/L	-		260	280	210	210	210	220	230	230	240	250	260	260
Boron	mg/L	1	N	0.34	0.35	0.13	0.13	0.13	0.14	0.14	0.15	0.16	0.17	0.17	0.18
Calcium, Total	mg/L	-		15	15	54	54	60	58	69	67	92	88	120	120
Carbon Dioxide	mg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/L	-		3.4	3.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l	-		6.5	6.3	5.8	5.7	6.2	6	6.9	6.7	9.1	8.7	11	11
Chloride	mg/L	500	S	38	38	23	24	22	22	41	42	56	56	110	110
Fluoride	mg/L	2	P	0.3	0.34	0.3	0.35	0.42	0.49	0.39	0.45	0.31	0.36	0.33	0.37
Hardness (Total, as CaCO3)	mg/L	-		61	60	190	190	210	200	240	230	320	310	420	420
Iron, Total	mg/L	0.3	S	ND	ND	0.03	0.035	ND	ND	0.056	0.056	ND	ND	ND	ND
Langelier Index - 25 degree	None	-		0.45	0.46	0.66	0.71	0.58	0.52	0.72	0.63	0.78	0.68	0.94	0.88
Magnesium, Total	None	-		5.6	5.6	14	14	15	14	16	16	23	22	29	30
Manganese, Total	mg/L	50	S	26	26	93	97	70	70	52	49	ND	ND	ND	ND
Nitrate as Nitrogen	mg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	9.6	9.6	6.4	6.3
Nitrate (as NO3)	mg/L	45	P	ND	ND	ND	ND	ND	ND	ND	ND	42	42	28	28
Nitrite, as Nitrogen	mg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/L	-		4.2	4.2	3.6	3.5	4	3.7	4	4.1	4.5	4.2	4.4	4.2
Sodium, Total	mg/L	-		120	110	43	41	44	41	47	45	58	54	63	61
Sulfate	mg/L	500	S	23	24	74	74	78	78	78	79	110	120	150	160
Surfactants	mg/L	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.067	ND
Total Dissolved Solid (TDS)	mg/L	1000	S	390	410	350	350	360	360	400	430	540	560	680	750
Total Nitrogen, Nitrate+Nitrite	mg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	9.6	9.6	6.4	6.3
Total Organic Carbon	mg/L	-		1.9	1.9	0.31	0.38	ND	ND	ND	0.31	0.38	0.48	0.34	0.4
General Physical Properties															
Apparent Color	ACU	15	S	20	20	ND	ND	ND	ND	3	ND	ND	ND	ND	ND
Lab pH	Units	-		8.3	8.3	8	8.1	7.9	7.9	8	7.9	7.9	7.8	7.9	7.8
Odor	TON	3	S	ND	1	ND	ND	ND	ND	1	ND	ND	ND	ND	ND
Specific Conductance	µmho/cm	1600	S	630	630	560	560	580	580	660	650	860	860	1100	1100
Turbidity	NTU	5	S	0.18	0.23	0.2	0.19	1	0.11	0.31	0.24	0.56	0.42	0.34	0.81
Metals															
Aluminum, Total	µg/L	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	µg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium, Total	µg/L	1000	P	10	10	21	22	46	47	75	76	95	100	120	130
Beryllium, Total	µg/L	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	µg/L	50	P	ND	ND	ND	ND	ND	ND	ND	ND	2.2	1.4	5.6	5.4
Copper, Total	µg/L	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	1.9	1.9	5.7	5.8
Lead, Total	µg/L	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total	µg/L	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	14	13
Silver, Total	µg/L	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	µg/L	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds															
1,1-Dichloroethane	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	µg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	µg/L	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-Isopropyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/L	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	µg/L	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	µg/L	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	1.8	1.7	0.98	1
Styrene	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.9	2.7
Toluene	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Trihalomethanes	µg/L	80	P	ND	ND	ND	ND	ND	ND	ND	ND	0.87	0.74	ND	ND
trans-1,2-Dichloroethylene	µg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.59
Vinyl chloride (VC)	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (Total)	µg/L	1750	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 (N): Notification Level (A): Action Level (ND): Not Detected

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2012-13

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Constituents	Units	MCL	MCL Type	Los Angeles #4											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				5/3/13	9/27/13	5/3/13	9/27/13	5/3/13	9/27/13	5/3/13	9/27/13	5/3/13	9/27/13	5/3/13	9/27/13
General Minerals															
Alkalinity	mg/L	-		1500	1100	450	300	170	150	170	130	200	120	170	140
Anion Sum	meq/L	-		32	23	9.5	6.2	5.6	5.2	5.8	4.8	6.5	4.7	6.3	5.4
Bicarbonate as HCO3	mg/L	-		1900	1300	550	360	200	180	210	160	240	150	210	160
Boron	mg/L	1	N	5.5	5.5	0.5	0.5	0.12	0.12	0.12	0.13	0.16	0.14	0.14	0.14
Calcium, Total	mg/L	-		12	13	16	16	54	53	53	52	42	47	61	61
Carbon Dioxide	mg/L	-		ND	5.4	ND	4.7	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/L	-		23	34	3.3	2.9	2.1	2.9	ND	3.3	2.2	3.1	ND	2.6
Cation Sum	meq/l	-		33	35	9.6	9.8	5.6	5.6	5.9	5.7	6.7	6	6.4	6.5
Chloride	mg/L	500	S	32	30	10	8	21	20	21	20	24	21	30	29
Fluoride	mg/L	2	P	0.4	0.41	0.3	0.29	0.31	0.31	0.41	0.41	0.43	0.38	0.45	0.43
Hardness (Total, as CaCO3)	mg/L	-		57	61	67	69	180	180	180	180	140	160	210	210
Iron, Total	mg/L	0.3	S	0.6	0.8	0.11	0.11	ND	ND	ND	ND	0.028	0.034	ND	ND
Langelier Index - 25 degree	None	-		1.2	1.4	0.46	0.46	0.79	0.99	0.69	0.96	0.71	0.91	0.6	1
Magnesium, Total	None	-		6.5	6.9	6.6	7	11	11	12	12	9.2	10	15	14
Manganese, Total	mg/L	50	S	19	66	33	49	34	37	70	68	28	40	ND	ND
Nitrate as Nitrogen	mg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.3	1.2
Nitrate (as NO3)	mg/L	45	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.7	5.4
Nitrite, as Nitrogen	mg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/L	-		13	15	10	11	3	3	3.9	3.8	4	3.8	3.4	3.6
Sodium, Total	mg/L	-		730	770	180	190	44	44	49	46	87	62	47	50
Sulfate	mg/L	500	S	3.3	14	9.8	3.4	78	75	79	75	89	79	90	87
Surfactants	mg/L	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/L	1000	S	2100	2000	580	530	340	340	350	350	400	350	400	390
Total Nitrogen, Nitrate+Nitrite	mg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.3	1.2
Total Organic Carbon	mg/L	-		160	120	9.1	4	0.31	ND	0.52	0.34	3.8	1.1	0.4	0.43
General Physical Properties															
Apparent Color	ACU	15	S	1500	1100	88	100	ND	ND	ND	ND	15	5	ND	ND
Lab pH	Units	-		8.3	8.6	8	8.1	8.2	8.4	8.1	8.5	8.2	8.5	7.9	8.4
Odor	TON	3	S	8	40	3	40	1	2	ND	1	3	2	ND	1
Specific Conductance	µmho/cm	1600	S	2800	2800	890	880	540	550	560	560	610	580	610	630
Turbidity	NTU	5	S	0.87	0.92	9.6	3.8	0.17	0.14	0.33	0.32	1.7	1.4	0.5	1.3
Metals															
Aluminum, Total	µg/L	1000	P	ND	21	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	µg/L	10	P	2.5	ND	8.5	6.1	ND	ND	2.5	2.1	2.6	1.9	1.1	ND
Barium, Total	µg/L	1000	P	33	53	24	28	14	16	36	40	32	42	90	97
Beryllium, Total	µg/L	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	µg/L	50	P	2.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.5	2.3
Copper, Total	µg/L	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	µg/L	-		0.028	0.098	0.022	0.029	ND	ND	ND	ND	ND	ND	2.5	2.4
Lead, Total	µg/L	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total	µg/L	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total	µg/L	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	µg/L	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds															
1,1-Dichloroethane	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	µg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	µg/L	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-Isopropyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/L	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	µg/L	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	µg/L	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Trihalomethanes	µg/L	80	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	µg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride (VC)	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (Total)	µg/L	1750	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 (N): Notification Level (A): Action Level (ND): Not Detected

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2012-13

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Constituents	Units	MCL	MCL Type	Montebello #1									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				5/9/13	9/11/13	5/9/13	9/11/13	5/9/13	9/11/13	5/9/13	9/11/13	5/9/13	9/11/13
General Minerals													
Alkalinity	mg/L	-		880	880	570	540	190	190	180	180	170	170
Anion Sum	meq/L	-		37	36	15	14	8.4	8.5	8.5	8	7.4	7.3
Bicarbonate as HCO3	mg/L	-		1100	1100	690	650	230	230	220	220	210	210
Boron	mg/L	1	N	5.8	6.2	2.1	2.3	0.17	0.2	0.1	0.14	0.2	0.19
Calcium, Total	mg/L	-		12	14	16	17	100	93	100	85	71	67
Carbon Dioxide	mg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/L	-		20	11	10	4.2	2	ND	ND	ND	ND	ND
Cation Sum	meq/l	-		35	40	15	17	8.9	8.4	8.8	7.9	7.8	7.2
Chloride	mg/L	500	S	670	660	130	130	66	70	70	66	66	62
Fluoride	mg/L	2	P	0.46	0.45	0.33	0.33	0.17	0.17	0.21	0.29	0.39	0.39
Hardness (Total, as CaCO3)	mg/L	-		54	60	69	72	320	300	330	280	240	220
Iron, Total	mg/L	0.3	S	0.15	0.16	0.17	0.19	0.023	ND	0.044	ND	ND	ND
Langelier Index - 25 degree	None	-		1.1	0.89	0.97	0.59	1	0.77	1	0.61	0.59	0.37
Magnesium, Total	None	-		5.7	6.3	6.9	7.2	17	16	18	15	15	13
Manganese, Total	µg/L	50	S	7.4	9.2	23	27	81	89	56	28	ND	ND
Nitrate as Nitrogen	mg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	2.7	2.8
Nitrate (as NO3)	mg/L	45	P	ND	ND	ND	ND	ND	ND	ND	ND	12	12
Nitrite, as Nitrogen	mg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/L	-		15	10	5.2	6.5	3.8	3.8	3.8	3.8	3.4	3.3
Sodium, Total	mg/L	-		770	890	310	350	54	55	47	53	67	60
Sulfate	mg/L	500	S	ND	ND	ND	ND	130	130	140	120	95	90
Surfactants	mg/L	0.5	S	ND	0.051	ND	ND	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/L	1000	S	2100	2100	890	860	520	520	520	490	450	440
Total Nitrogen, Nitrate+Nitrite	mg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	2.7	2.8
Total Organic Carbon	mg/L	-		40	32	23	20	0.97	0.89	0.66	0.5	0.48	0.39
General Physical Properties													
Apparent Color	ACU	15	S	700	350	250	200	5	10	ND	ND	ND	ND
Lab pH	Units	-		8.4	8.2	8.4	8	8.1	7.9	8.1	7.8	7.9	7.7
Odor	TON	3	S	3	4	2	3	3	2	ND	2	2	1
Specific Conductance	µmho/cm	1600	S	3600	3600	1400	1400	800	830	800	780	730	730
Turbidity	NTU	5	S	0.57	2	0.32	0.31	0.35	1.5	0.61	0.58	0.53	0.6
Metals													
Aluminum, Total	µg/L	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	µg/L	10	P	9.1	2.4	4.4	ND	ND	ND	ND	ND	1.4	1.1
Barium, Total	µg/L	1000	P	34	36	21	21	39	42	86	87	52	54
Beryllium, Total	µg/L	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	µg/L	50	P	2.1	1.4	1	ND	ND	ND	ND	ND	ND	ND
Copper, Total	µg/L	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	µg/L	-		ND	0.025	ND	ND	ND	ND	ND	ND	0.21	0.37
Lead, Total	µg/L	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total	µg/L	50	P	5.2	6.1	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total	µg/L	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	µg/L	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds													
1,1-Dichloroethane	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	µg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	µg/L	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-Isopropyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/L	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	µg/L	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	µg/L	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	0.61	0.63
Styrene	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	0.5	ND	ND	ND
Toluene	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Trihalomethanes	µg/L	80	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	µg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride (VC)	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (Total)	µg/L	1750	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 (N): Notification Level (A): Action Level (ND): Not Detected

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2012-13

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Constituents	Units	MCL	MCL Type	Norwalk #1									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				4/22/13	9/24/13	4/22/13	9/24/13	4/22/13	9/24/13	4/22/13	9/24/13	4/22/13	9/24/13
General Minerals													
Alkalinity	mg/L	-		260	260	170	170	120	120	120	130	200	200
Anion Sum	meq/L	-		8.2	8.3	5.2	5	4.3	4.2	3.2	3.4	7.4	7.8
Bicarbonate as HCO3	mg/L	-		320	320	210	200	150	140	150	160	240	240
Boron	mg/L	1	N	0.33	0.38	0.18	0.19	ND	ND	ND	ND	0.073	0.079
Calcium, Total	mg/L	-		13	13	9	9.3	26	26	26	27	64	70
Carbon Dioxide	mg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/L	-		2.8	4.1	4.6	5.2	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l	-		8.2	8.5	5.1	5.3	4.2	4.2	3.3	3.3	7.2	7.8
Chloride	mg/L	500	S	62	62	59	58	58	58	20	22	120	130
Fluoride	mg/L	2	P	0.48	0.51	0.57	0.61	0.29	0.3	0.29	0.33	0.3	0.29
Hardness (Total, as CaCO3)	mg/L	-		60	61	28	28	73	74	86	89	220	240
Iron, Total	mg/L	0.3	S	ND	ND	ND	ND	ND	ND	0.021	ND	0.11	0.17
Langelier Index - 25 degree	None	-		0.28	0.44	0.36	0.4	0.4	0.46	0.36	0.4	0.66	0.74
Magnesium, Total	None	-		6.9	7	1.3	1.3	2.2	2.2	5.2	5.3	15	17
Manganese, Total	µg/L	50	S	2	2.2	6	7.4	16	20	33	40	120	160
Nitrate as Nitrogen	mg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/L	45	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, as Nitrogen	mg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/L	-		2.4	2.6	1.6	1.6	2.2	2.4	1.8	1.8	3.5	3.6
Sodium, Total	mg/L	-		160	160	100	110	61	61	34	35	62	65
Sulfate	mg/L	500	S	56	59	ND	ND	8.7	8.7	10	9.2	5.4	6.6
Surfactants	mg/L	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	0.069	0.16
Total Dissolved Solid (TDS)	mg/L	1000	S	510	520	300	330	250	240	180	190	420	440
Total Nitrogen, Nitrate+Nitrite	mg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/L	-		2.5	2.2	2.8	2.9	0.56	0.5	0.39	0.37	1.6	1.9
General Physical Properties													
Apparent Color	ACU	15	S	20	25	35	35	ND	ND	5	3	60	10
Lab pH	Units	-		8.1	8.3	8.5	8.6	8.3	8.3	8.2	8.2	7.9	8
Odor	TON	3	S	67	8	2	2	1	2	2	1	3	2
Specific Conductance	µmho/cm	1600	S	840	840	520	520	440	450	340	340	750	820
Turbidity	NTU	5	S	0.15	0.13	0.43	0.58	0.44	0.31	13	3	38	14
Metals													
Aluminum, Total	µg/L	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	µg/L	10	P	ND	ND	ND	ND	4.6	5.6	18	20	10	11
Barium, Total	µg/L	1000	P	13	14	6.9	6.7	88	99	110	130	270	370
Beryllium, Total	µg/L	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	µg/L	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	µg/L	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	µg/L	-		0.022	0.049	ND	0.024	ND	ND	ND	ND	ND	ND
Lead, Total	µg/L	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total	µg/L	50	P	13	5.8	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total	µg/L	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	µg/L	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds													
1,1-Dichloroethane	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	µg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	µg/L	70	P	ND	ND	ND	ND	ND	ND	ND	ND	1.1	1.7
Chloromethane	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-Isopropyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/L	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	µg/L	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	µg/L	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Trihalomethanes	µg/L	80	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	µg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride (VC)	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (Total)	µg/L	1750	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 (N): Notification Level (A): Action Level (ND): Not Detected

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2012-13

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Constituents	Units	MCL	MCL Type	Norwalk #2											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				5/1/13	9/19/13	5/1/13	9/19/13	5/1/13	9/19/13	5/1/13	9/19/13	5/1/13	9/19/13	5/1/13	9/19/13
General Minerals															
Alkalinity	mg/L	-		190	190	180	170	150	150	160	160	160	160	170	170
Anion Sum	meq/L	-		7	6.8	4.7	4.6	4.1	4	5.7	5.5	7.9	7.8	8.2	8.1
Bicarbonate as HCO3	mg/L	-		230	230	210	210	180	180	190	200	190	190	210	210
Boron	mg/L	1	N	0.26	0.25	0.23	0.23	ND	ND	0.055	0.054	0.14	0.15	0.18	0.18
Calcium, Total	mg/L	-		24	21	12	11	42	41	67	64	83	81	80	78
Carbon Dioxide	mg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/L	-		2.1	3	4	3.4	2.1	ND	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l	-		6.9	6.9	4.8	4.7	4.2	4.1	5.8	5.6	7.8	7.7	8.1	8
Chloride	mg/L	500	S	68	66	31	30	14	13	28	26	76	75	76	77
Fluoride	mg/L	2	P	0.36	0.36	0.47	0.47	0.2	0.21	0.29	0.28	0.24	0.24	0.38	0.36
Hardness (Total, as CaCO3)	mg/L	-		81	70	39	37	130	120	220	200	280	270	270	260
Iron, Total	mg/L	0.3	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None	-		0.45	0.51	0.42	0.33	0.7	0.66	0.76	0.74	0.81	0.74	0.68	0.7
Magnesium, Total	None	-		4.9	4.3	2.3	2.3	5.2	5.1	12	11	17	17	17	17
Manganese, Total	mg/L	50	S	8.3	8.7	13	14	22	21	ND	ND	16	14	ND	2
Nitrate as Nitrogen	mg/L	10	P	ND	ND	ND	ND	ND	ND	1.3	1.2	2.8	2.7	2.6	2.3
Nitrate (as NO3)	mg/L	45	P	ND	ND	ND	ND	ND	ND	5.8	5.3	12	12	11	10
Nitrite, as Nitrogen	mg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/L	-		3.9	3.9	2.4	2.6	2.7	2.8	3.5	3.4	4	4.3	4.2	4.2
Sodium, Total	mg/L	-		120	120	90	90	36	36	31	31	49	49	60	61
Sulfate	mg/L	500	S	55	52	12	12	37	35	76	72	110	110	120	110
Surfactants	mg/L	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/L	1000	S	410	420	270	270	240	230	340	330	480	450	500	490
Total Nitrogen, Nitrate+Nitrite	mg/L	10	P	ND	ND	ND	ND	ND	ND	1.3	1.2	2.8	2.7	2.6	2.3
Total Organic Carbon	mg/L	-		1.7	1.6	1.3	1.1	0.41	0.35	ND	ND	0.58	0.53	0.49	0.44
General Physical Properties															
Apparent Color	ACU	15	S	15	15	25	20	3	ND	3	ND	5	ND	5	ND
Lab pH	Units	-		8.1	8.3	8.5	8.4	8.3	8.2	8.1	8.1	8	8	7.9	7.9
Odor	TON	3	S	ND	ND	ND	1	1	2	ND	1	ND	ND	ND	ND
Specific Conductance	µmho/cm	1600	S	680	700	460	460	400	400	560	550	770	780	800	810
Turbidity	NTU	5	S	0.1	0.25	0.16	0.29	0.2	0.24	0.12	0.4	0.078	0.65	0.1	0.53
Metals															
Aluminum, Total	µg/L	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	µg/L	10	P	2.7	3.7	ND	ND	ND	ND	2	1.6	2.5	1.7	1.9	1.4
Barium, Total	µg/L	1000	P	34	33	9.6	10	28	30	150	150	70	82	51	58
Beryllium, Total	µg/L	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	µg/L	50	P	ND	ND	ND	ND	ND	ND	2.6	2	ND	ND	ND	ND
Copper, Total	µg/L	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	µg/L	-		ND	ND	ND	ND	ND	ND	3.1	3.1	0.59	0.64	0.72	0.73
Lead, Total	µg/L	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total	µg/L	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total	µg/L	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	µg/L	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds															
1,1-Dichloroethane	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	µg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	µg/L	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-Isopropyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/L	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	µg/L	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	µg/L	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	µg/L	6	P	ND	ND	ND	ND	ND	ND	2.1	2	1.2	1.1	0.52	ND
Styrene	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Trihalomethanes	µg/L	80	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	µg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride (VC)	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (Total)	µg/L	1750	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 (N): Notification Level (A): Action Level (ND): Not Detected

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2012-13

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Constituents	Units	MCL	MCL Type	Pico #1					
				Zone 2		Zone 3		Zone 4	
				4/9/13	9/4/13	4/9/13	9/4/13	4/9/13	9/4/13
General Minerals									
Alkalinity	mg/L	-		150	160	190	190	180	170
Anion Sum	meq/L	-		4.8	5.3	9.4	9.5	10	10
Bicarbonate as HCO3	mg/L	-		180	190	240	230	220	210
Boron	mg/L	1	N	0.064	0.063	0.13	0.14	0.23	0.21
Calcium, Total	mg/L	-		60	67	110	110	100	98
Carbon Dioxide	mg/L	-		ND	ND	ND	11	ND	ND
Carbonate as CO3	mg/L	-		ND	ND	ND	ND	ND	ND
Cation Sum	meq/l	-		5	5.6	9.6	9.7	10	10
Chloride	mg/L	500	S	18	21	84	88	110	110
Fluoride	mg/L	2	P	0.28	0.28	0.31	0.3	0.29	0.26
Hardness (Total, as CaCO3)	mg/L	-		200	220	370	350	330	320
Iron, Total	mg/L	0.3	S	0.25	0.27	0.41	0.42	ND	ND
Langelier Index - 25 degree	None	-		0.47	0.43	0.61	0.48	0.44	0.51
Magnesium, Total	None	-		11	12	20	20	20	19
Manganese, Total	µg/L	50	S	21	24	15	19	ND	ND
Nitrate as Nitrogen	mg/L	10	P	ND	ND	ND	ND	2	2.1
Nitrate (as NO3)	mg/L	45	P	ND	ND	ND	ND	9	9.3
Nitrite, as Nitrogen	mg/L	1	P	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/L	-		2.9	2.9	4.8	4.6	5.6	5.3
Sodium, Total	mg/L	-		24	25	48	59	82	83
Sulfate	mg/L	500	S	62	73	150	160	150	150
Surfactants	mg/L	0.5	S	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/L	1000	S	300	330	600	620	610	620
Total Nitrogen, Nitrate+Nitrite	mg/L	10	P	ND	ND	ND	ND	2	2.1
Total Organic Carbon	mg/L	-		ND	0.58	0.52	0.52	0.57	0.68
General Physical Properties									
Apparent Color	ACU	15	S	5	10	10	15	ND	ND
Lab pH	Units	-		7.9	7.8	7.6	7.5	7.5	7.6
Odor	TON	3	S	1	1	1	1	1	1
Specific Conductance	µmho/cm	1600	S	500	520	950	930	1000	990
Turbidity	NTU	5	S	1.9	2.2	4.9	6	0.18	0.18
Metals									
Aluminum, Total	µg/L	1000	P	ND	ND	ND	ND	ND	ND
Antimony, Total	µg/L	6	P	ND	ND	ND	ND	ND	ND
Arsenic, Total	µg/L	10	P	ND	ND	ND	ND	2.3	1.9
Barium, Total	µg/L	1000	P	75	82	67	63	60	59
Beryllium, Total	µg/L	4	P	ND	ND	ND	ND	ND	ND
Cadmium, Total	µg/L	5	P	ND	ND	ND	ND	ND	ND
Chromium, Total	µg/L	50	P	ND	ND	ND	ND	ND	ND
Copper, Total	µg/L	1300	P	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	µg/L	-		ND	ND	ND	ND	0.34	0.3
Lead, Total	µg/L	15	P	ND	ND	ND	ND	ND	ND
Mercury	µg/L	2	P	ND	ND	ND	ND	ND	ND
Nickel, Total	µg/L	100	P	ND	ND	ND	ND	ND	ND
Selenium, Total	µg/L	50	P	ND	ND	ND	ND	ND	ND
Silver, Total	µg/L	100	S	ND	ND	ND	ND	ND	ND
Thallium, Total	µg/L	2	P	ND	ND	ND	ND	ND	ND
Zinc, Total	µg/L	5000	S	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds									
1,1-Dichloroethane	µg/L	5	P	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	µg/L	0.5	P	ND	ND	ND	ND	ND	ND
Benzene	µg/L	1	P	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	µg/L	0.5	P	ND	ND	ND	ND	ND	ND
Chlorobenzene	µg/L	70	P	ND	ND	ND	ND	ND	ND
Chloromethane	µg/L	-		ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND
Di-Isopropyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/L	300	P	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND
Freon 11	µg/L	150	P	ND	ND	ND	ND	ND	ND
Freon 113	µg/L	1200	P	ND	ND	ND	ND	ND	ND
Methylene Chloride	µg/L	5	P	ND	ND	ND	ND	ND	ND
MTBE	µg/L	13	P	ND	ND	ND	ND	ND	ND
Perchlorate	µg/L	6	P	ND	ND	ND	ND	ND	ND
Styrene	µg/L	100	P	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND
Toluene	µg/L	150	P	ND	ND	ND	ND	ND	ND
Total Trihalomethanes	µg/L	80	P	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	µg/L	10	P	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND
Vinyl chloride (VC)	µg/L	0.5	P	ND	ND	ND	ND	ND	ND
Xylenes (Total)	µg/L	1750	P	ND	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level (A): Action Level (ND): Not Detected

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2012-13

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Constituents	Units	MCL	MCL Type	Pico #2											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				5/16/13	9/25/13	5/16/13	9/25/13	5/16/13	9/25/13	5/16/13	9/25/13	5/16/13	9/25/13	5/16/13	9/25/13
General Minerals															
Alkalinity	mg/L	-		210	200	220	210	190	190	120	130	120	120	120	140
Anion Sum	meq/L	-		9.1	8.8	10	9.9	8.9	8.7	7.2	7.7	6.9	7	7.1	9
Bicarbonate as HCO3	mg/L	-		250	250	270	260	230	230	150	160	150	150	150	170
Boron	mg/L	1	N	0.056	0.061	0.14	0.14	0.15	0.15	0.2	0.21	0.21	0.2	0.23	0.25
Calcium, Total	mg/L	-		120	120	120	120	100	98	55	62	51	50	51	63
Carbon Dioxide	mg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l	-		9.1	8.8	10	9.9	8.9	8.7	7	7.7	7.1	7.1	7.2	8.9
Chloride	mg/L	500	S	56	54	85	84	76	74	81	91	78	82	86	120
Fluoride	mg/L	2	P	0.24	0.25	0.26	0.28	0.3	0.33	0.32	0.34	0.4	0.43	0.31	0.32
Hardness (Total, as CaCO3)	mg/L	-		390	390	410	400	340	330	190	210	190	190	200	240
Iron, Total	mg/L	0.3	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None	-		0.99	0.78	0.78	0.76	0.8	0.68	0.27	0.18	0.16	0.016	0.047	-0.00068
Magnesium, Total	None	-		22	21	25	24	21	20	12	14	14	15	17	21
Manganese, Total	µg/L	50	S	ND	ND	3.2	3.4	ND	ND	ND	ND	22	31	ND	ND
Nitrate as Nitrogen	mg/L	10	P	3.3	3.1	2.6	2.5	3	3	2.2	3.2	2	2.7	5.2	6.2
Nitrate (as NO3)	mg/L	45	P	14	14	11	11	13	13	9.7	14	8.8	12	23	27
Nitrite, as Nitrogen	mg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/L	-		3.9	3.9	4.1	4.1	4.5	4.2	3.7	3.9	4.2	4.6	7.4	8.4
Sodium, Total	mg/L	-		26	27	39	42	47	47	71	77	74	76	70	86
Sulfate	mg/L	500	S	150	140	150	150	130	120	100	110	100	98	85	110
Surfactants	mg/L	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/L	1000	S	550	520	610	600	540	520	440	480	450	420	450	530
Total Nitrogen, Nitrate+Nitrite	mg/L	10	P	3.3	3.1	2.6	2.5	3	3	2.2	3.2	2	2.7	5.2	6.2
Total Organic Carbon	mg/L	-		ND	ND	ND	0.37	0.4	0.41	0.72	0.6	0.85	0.79	0.92	0.92
General Physical Properties															
Apparent Color	ACU	15	S	3	ND	ND	ND	3	ND	ND	3	ND	3	ND	3
Lab pH	Units	-		8	7.8	7.7	7.7	7.9	7.8	7.8	7.6	7.7	7.6	7.6	7.4
Odor	TON	3	S	ND	ND	ND	ND	ND	ND	1	ND	ND	ND	ND	1
Specific Conductance	µmho/cm	1600	S	850	840	930	960	850	860	720	800	720	740	740	940
Turbidity	NTU	5	S	0.28	0.58	0.13	0.18	0.79	0.49	0.4	0.26	0.27	0.29	0.43	1.4
Metals															
Aluminum, Total	µg/L	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	µg/L	10	P	1.6	1.4	2.1	1.8	1.5	1.8	2.4	2.6	ND	ND	12	10
Barium, Total	µg/L	1000	P	150	160	110	120	88	94	47	56	66	78	120	170
Beryllium, Total	µg/L	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	µg/L	50	P	1.2	1.2	ND	ND	1.2	ND	ND	ND	ND	ND	ND	ND
Copper, Total	µg/L	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3
Hexavalent Chromium (Cr VI)	µg/L	-		1.4	1.5	0.75	0.75	1.1	1.2	0.46	0.46	0.3	0.12	0.36	0.41
Lead, Total	µg/L	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.1
Selenium, Total	µg/L	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total	µg/L	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	µg/L	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds															
1,1-Dichloroethane	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	µg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	µg/L	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-Isopropyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/L	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	µg/L	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	µg/L	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	µg/L	6	P	1.8	1.8	ND	ND	0.94	0.93	ND	ND	ND	ND	1.3	ND
Styrene	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	µg/L	5	P	0.81	0.69	1.4	1.1	3.1	2.8	ND	ND	ND	ND	ND	ND
Toluene	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Trihalomethanes	µg/L	80	P	ND	ND	ND	ND	ND	ND	0.85	ND	ND	ND	1.7	6.1
trans-1,2-Dichloroethylene	µg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride (VC)	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (Total)	µg/L	1750	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 (N): Notification Level (A): Action Level (ND): Not Detected

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2012-13

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Constituents	Units	MCL	MCL Type	Rio Hondo #1											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				4/16/13	9/10/13	4/16/13	9/10/13	4/16/13	9/10/13	4/16/13	9/10/13	4/16/13	9/10/13	4/16/13	9/10/13
General Minerals															
Alkalinity	mg/L	-		130	140	160	160	180	140	110	110	96	98	110	100
Anion Sum	meq/L	-		4.2	4.3	7.2	7	7.7	6.9	6	5.9	4.8	4.7	4.7	5.2
Bicarbonate as HCO3	mg/L	-		160	170	190	190	210	170	140	140	120	120	130	120
Boron	mg/L	1	N	0.059	0.059	ND	ND	0.15	0.15	0.17	0.16	0.12	0.11	0.092	0.098
Calcium, Total	mg/L	-		39	39	93	92	82	83	53	51	39	41	38	44
Carbon Dioxide	mg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l	-		4.4	4.5	7.3	7.1	7.6	7.5	6.1	5.8	4.8	4.8	4.7	5.2
Chloride	mg/L	500	S	18	18	48	48	65	64	63	61	47	45	46	61
Fluoride	mg/L	2	P	0.23	0.26	0.19	0.21	0.27	0.3	0.33	0.36	0.32	0.34	0.27	0.29
Hardness (Total, as CaCO3)	mg/L	-		130	130	300	300	270	270	180	170	130	140	140	160
Iron, Total	mg/L	0.3	S	ND	ND	0.076	0.07	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None	-		0.55	0.38	0.78	0.74	0.73	0.54	0.26	0.087	0.02	-0.17	-0.18	-0.18
Magnesium, Total	None	-		8.2	8.5	17	16	16	15	11	10	8.7	8.7	11	12
Manganese, Total	mg/L	50	S	19	20	28	31	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate as Nitrogen	mg/L	10	P	ND	ND	ND	ND	1.9	1.9	2	1.9	1.4	1.5	2.1	2.8
Nitrate (as NO3)	mg/L	45	P	ND	ND	ND	ND	8.3	8.4	8.7	8.4	6.4	6.5	9.2	12
Nitrite, as Nitrogen	mg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/L	-		2.8	3	3.4	3.5	3.7	3.9	3.4	3.6	3	3.1	3.5	3.8
Sodium, Total	mg/L	-		40	42	26	25	49	46	57	54	47	45	43	44
Sulfate	mg/L	500	S	48	48	120	120	100	100	87	85	66	65	52	60
Surfactants	mg/L	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/L	1000	S	270	270	460	440	490	470	390	380	310	290	280	310
Total Nitrogen, Nitrate+Nitrite	mg/L	10	P	ND	ND	ND	ND	1.9	1.9	2	1.9	1.4	1.5	2.1	2.8
Total Organic Carbon	mg/L	-		0.35	0.33	0.32	0.3	0.4	0.39	0.45	0.41	0.37	0.36	0.41	0.38
General Physical Properties															
Apparent Color	ACU	15	S	5	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lab pH	Units	-		8.2	8	8	8	7.9	7.8	7.8	7.7	7.8	7.6	7.6	7.5
Odor	TON	3	S	2	2	1	ND	1	ND	1	2	1	1	1	1
Specific Conductance	µmho/cm	1600	S	440	430	700	700	760	750	630	610	500	500	490	560
Turbidity	NTU	5	S	3.2	1.7	1.2	0.37	0.2	0.081	0.18	0.94	1.5	2.6	0.81	0.84
Metals															
Aluminum, Total	µg/L	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	µg/L	10	P	ND	ND	ND	ND	2	1.8	2.4	2.3	1.6	1.5	ND	ND
Barium, Total	µg/L	1000	P	18	18	53	51	120	110	48	50	46	46	82	93
Beryllium, Total	µg/L	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	µg/L	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	µg/L	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	µg/L	-		ND	ND	ND	ND	0.5	0.53	0.42	0.4	0.39	0.39	0.31	0.34
Lead, Total	µg/L	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total	µg/L	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total	µg/L	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	µg/L	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds															
1,1-Dichloroethane	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	µg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	µg/L	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-Isopropyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/L	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	µg/L	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	µg/L	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	µg/L	6	P	ND	ND	ND	ND	ND	ND	0.59	ND	ND	ND	ND	ND
Styrene	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Trihalomethanes	µg/L	80	P	ND	ND	ND	ND	ND	ND	0.74	ND	ND	ND	1.1	2
trans-1,2-Dichloroethylene	µg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride (VC)	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (Total)	µg/L	1750	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 (N): Notification Level (A): Action Level (ND): Not Detected

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2012-13

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Constituents	Units	MCL	MCL Type	Seal Beach #1													
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6		Zone 7	
				4/30/13	8/26/13	4/30/13	8/26/13	4/30/13	8/26/13	4/30/13	8/26/13	4/30/13	8/26/13	4/30/13	8/26/13	4/30/13	8/26/13
General Minerals																	
Alkalinity	mg/L	-		200	190	150	150	140	140	180	170	130	110	110	100	200	200
Anion Sum	meq/L	-		4.5	4.4	3.4	3.4	3.3	3.2	4.3	3.9	3.8	3.2	7.3	6.8	31	31
Bicarbonate as HCO3	mg/L	-		240	240	180	180	170	170	220	200	160	130	140	120	240	240
Boron	mg/L	1	N	0.24	0.21	0.14	0.12	0.19	0.18	0.24	0.22	0.09	0.063	0.13	0.12	0.12	0.12
Calcium, Total	mg/L	-		4.7	4.3	3.6	3.3	3.5	3.4	5.7	5.3	6.6	8	59	57	290	280
Carbon Dioxide	mg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/L	-		4	3.9	8.7	4.4	9.4	3.9	ND	2.4	2.6	ND	ND	ND	ND	ND
Cation Sum	meq/l	-		4.9	4.4	3.8	3.4	3.6	3.4	4.7	4.2	3.9	3.5	7.3	7	30	31
Chloride	mg/L	500	S	18	17	16	15	15	14	20	18	15	14	80	76	780	780
Fluoride	mg/L	2	P	0.42	0.41	0.5	0.48	0.56	0.55	0.78	0.73	0.68	0.52	0.36	0.35	0.36	0.34
Hardness (Total, as CaCO3)	mg/L	-		14	13	11	9.8	10	9.7	18	16	23	26	200	190	960	990
Iron, Total	mg/L	0.3	S	0.051	0.053	0.028	0.03	0.021	0.021	0.041	0.038	ND	ND	ND	ND	0.19	0.2
Langelier Index - 25 degree	None	-		0.017	-0.028	0.24	-0.1	0.26	-0.14	-0.22	-0.16	-0.026	-0.36	0.51	0.28	1.1	1.1
Magnesium, Total	None	-		0.57	0.48	0.45	0.41	0.35	0.32	0.86	0.72	1.6	1.6	11	12	59	66
Manganese, Total	µg/L	50	S	7.9	7.8	4.2	4.4	2.5	2.8	9.6	9	9.2	9.5	84	94	680	770
Nitrate as Nitrogen	mg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/L	45	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, as Nitrogen	mg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/L	-		ND	ND	ND	ND	ND	ND	1.1	ND	2	1.5	2.6	2.4	6.7	6.9
Sodium, Total	mg/L	-		110	95	82	74	78	73	99	88	78	67	76	74	240	250
Sulfate	mg/L	500	S	ND	ND	ND	ND	ND	ND	1	ND	34	29	130	130	240	250
Surfactants	mg/L	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/L	1000	S	290	300	240	230	210	220	260	260	230	220	440	440	2200	2200
Total Nitrogen, Nitrate+Nitrite	mg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/L	-		10	10	4.2	3.7	3.8	3	5.9	5.6	2.3	1.1	1.6	1.4	1	0.52
General Physical Properties																	
Apparent Color	ACU	15	S	400	200	150	100	150	60	250	50	25	20	5	ND	5	5
Lab pH	Units	-		8.4	8.4	8.9	8.6	8.9	8.6	8.1	8.2	8.4	8.1	8	7.9	7.8	7.7
Odor	TON	3	S	ND	3	ND	2	1	1	ND	2	1	2	ND	2	ND	2
Specific Conductance	µmho/cm	1600	S	440	450	360	360	330	340	410	410	380	350	720	730	3000	3200
Turbidity	NTU	5	S	0.77	3	0.57	0.8	0.47	0.69	3.5	4.7	4.4	3.2	0.15	0.16	1.9	1.4
Metals																	
Aluminum, Total	µg/L	1000	P	30	91	32	29	26	26	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	µg/L	10	P	1.5	1.5	1.2	1.2	ND	ND	1.1	1.5	4.4	2.3	1.6	ND	5.1	ND
Barium, Total	µg/L	1000	P	6.4	7.1	3.9	4	3.4	3.7	5.7	5.5	11	12	85	90	130	140
Beryllium, Total	µg/L	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	µg/L	50	P	1	ND	ND	ND	ND	ND	1	ND	ND	ND	ND	ND	ND	ND
Copper, Total	µg/L	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	12
Hexavalent Chromium (Cr VI)	µg/L	-		ND	0.022	ND	0.025	ND	0.023	0.022	0.029	ND	ND	ND	ND	ND	ND
Lead, Total	µg/L	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total	µg/L	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5	7.4
Silver, Total	µg/L	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	µg/L	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds																	
1,1-Dichloroethane	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	µg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	µg/L	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-Isopropyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/L	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	µg/L	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	µg/L	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Trihalomethanes	µg/L	80	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	µg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride (VC)	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (Total)	µg/L	1750	P	ND	ND	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 (N): Notification Level (A): Action Level (ND): Not Detected

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2012-13

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Constituents	Units	MCL	MCL Type	South Gate #1									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				5/7/13	9/25/13	5/7/13	9/25/13	5/7/13	9/25/13	5/7/13	9/25/13	5/7/13	9/25/13
General Minerals													
Alkalinity	mg/L	-		160	160	140	140	150	150	150	160	200	200
Anion Sum	meq/L	-		5.1	4.9	6.5	6.5	6.9	6.7	7.1	7.2	9.8	9.4
Bicarbonate as HCO3	mg/L	-		200	190	160	170	190	180	180	190	240	240
Boron	mg/L	1	N	0.11	0.11	0.13	0.13	0.11	0.11	0.16	0.16	0.13	0.13
Calcium, Total	mg/L	-		47	46	66	64	73	71	72	73	99	95
Carbon Dioxide	mg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/L	-		2.3	2	ND	ND	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l	-		5.1	5	6.4	6.4	6.8	6.6	7.1	7.2	9.7	9.4
Chloride	mg/L	500	S	22	22	54	53	50	48	59	58	110	110
Fluoride	mg/L	2	P	0.29	0.32	0.29	0.32	0.35	0.38	0.36	0.39	0.37	0.41
Hardness (Total, as CaCO3)	mg/L	-		150	140	220	210	250	240	240	240	360	340
Iron, Total	mg/L	0.3	S	0.027	0.032	ND	ND	ND	ND	ND	ND	0.082	0.084
Langelier Index - 25 degree	None	-		0.77	0.66	0.52	0.54	0.74	0.65	0.64	0.59	0.84	0.76
Magnesium, Total	None	-		7.9	7.5	13	12	16	15	15	15	27	25
Manganese, Total	µg/L	50	S	38	42	ND	ND	ND	ND	ND	ND	110	120
Nitrate as Nitrogen	mg/L	10	P	ND	ND	2.2	2.1	2.4	2.3	1.8	1.7	ND	ND
Nitrate (as NO3)	mg/L	45	P	ND	ND	9.5	9.2	10	10	7.9	7.4	ND	ND
Nitrite, as Nitrogen	mg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/L	-		2.5	2.6	3.2	3.3	2.9	2.9	3.1	3	3	3.2
Sodium, Total	mg/L	-		46	46	47	48	40	41	51	52	57	57
Sulfate	mg/L	500	S	54	52	100	99	100	100	110	100	120	120
Surfactants	mg/L	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/L	1000	S	300	300	410	390	410	400	410	440	580	550
Total Nitrogen, Nitrate+Nitrite	mg/L	10	P	ND	ND	2.2	2.1	2.4	2.3	1.8	1.7	ND	ND
Total Organic Carbon	mg/L	-		ND	ND	ND	0.38	ND	ND	ND	0.32	0.78	0.69
General Physical Properties													
Apparent Color	ACU	15	S	3	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lab pH	Units	-		8.2	8.2	7.9	7.9	8	8	8	7.9	7.9	7.8
Odor	TON	3	S	ND	ND	1	ND	ND	ND	ND	ND	ND	ND
Specific Conductance	µmho/cm	1600	S	490	490	650	650	660	660	710	710	940	930
Turbidity	NTU	5	S	0.27	0.16	0.16	0.4	0.31	0.94	0.27	0.19	0.49	0.36
Metals													
Aluminum, Total	µg/L	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	µg/L	10	P	2.5	2.6	2.9	2.7	2.9	2.7	2.3	2.6	2.8	1.8
Barium, Total	µg/L	1000	P	120	130	82	94	140	160	65	67	210	220
Beryllium, Total	µg/L	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	µg/L	50	P	ND	ND	ND	ND	1.1	ND	ND	ND	ND	ND
Copper, Total	µg/L	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	µg/L	-		ND	ND	0.087	0.082	0.97	0.98	0.52	0.53	ND	ND
Lead, Total	µg/L	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total	µg/L	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total	µg/L	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	µg/L	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds													
1,1-Dichloroethane	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	µg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	µg/L	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-Isopropyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/L	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	µg/L	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	µg/L	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	µg/L	6	P	ND	ND	0.97	0.85	2	2	ND	ND	ND	ND
Styrene	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	µg/L	5	P	ND	ND	ND	ND	0.71	0.66	4.9	4.2	ND	ND
Toluene	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Trihalomethanes	µg/L	80	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	µg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	1.1	1.2	ND	ND
Vinyl chloride (VC)	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (Total)	µg/L	1750	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 (N): Notification Level (A): Action Level (ND): Not Detected

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2012-13

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Constituents	Units	MCL	MCL Type	Whittier #1									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				5/1/13	9/13/13	5/1/13	9/13/13	5/1/13	9/13/13	5/1/13	9/13/13	5/1/13	9/13/13
General Minerals													
Alkalinity	mg/L	-		250	260	280	280	290	290	260	240	230	230
Anion Sum	meq/L	-		41	40	40	38	28	28	12	11	11	11
Bicarbonate as HCO3	mg/L	-		300	320	340	340	350	350	310	300	280	280
Boron	mg/L	1	N	0.83	0.87	0.93	0.96	0.61	0.61	0.19	0.19	0.15	0.16
Calcium, Total	mg/L	-		190	190	190	190	160	170	81	80	79	81
Carbon Dioxide	mg/L	-		ND	10	ND	9.5	ND	10	ND	10	ND	9.2
Carbonate as CO3	mg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l	-		40	41	39	39	28	29	12	12	11	11
Chloride	mg/L	500	S	280	280	250	240	190	190	81	78	85	82
Fluoride	mg/L	2	P	0.27	0.28	0.29	0.28	0.47	0.45	0.19	0.19	0.31	0.3
Hardness (Total, as CaCO3)	mg/L	-		1000	1000	1000	990	810	810	350	350	360	360
Iron, Total	mg/L	0.3	S	0.55	0.56	0.46	0.44	0.31	0.32	ND	ND	ND	ND
Langelier Index - 25 degree	None	-		1.1	1	1.1	1.1	1.2	1.1	0.73	0.6	0.86	0.59
Magnesium, Total	None	-		130	130	130	120	96	95	37	36	39	39
Manganese, Total	mg/L	50	S	52	53	73	79	74	75	20	23	3.5	3.8
Nitrate as Nitrogen	mg/L	10	P	ND	ND	ND	ND	ND	ND	3.9	3.8	5.2	5
Nitrate (as NO3)	mg/L	45	P	ND	ND	ND	ND	ND	ND	17	17	23	22
Nitrite, as Nitrogen	mg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/L	-		12	13	10	12	7.3	8	4.3	4.3	3.6	3.7
Sodium, Total	mg/L	-		460	480	430	440	270	290	110	110	88	88
Sulfate	mg/L	500	S	1400	1300	1300	1200	820	810	190	180	180	170
Surfactants	mg/L	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/L	1000	S	2700	2600	2600	2400	1800	1800	700	690	690	680
Total Nitrogen, Nitrate+Nitrite	mg/L	10	P	ND	ND	ND	ND	ND	ND	3.9	3.8	5.2	5
Total Organic Carbon	mg/L	-		1.9	1.8	2.3	2.1	1.4	1.3	ND	ND	ND	ND
General Physical Properties													
Apparent Color	ACU	15	S	20	20	20	15	15	10	3	ND	5	ND
Lab pH	Units	-		7.8	7.7	7.7	7.8	7.8	7.8	7.8	7.7	8	7.7
Odor	TON	3	S	ND	2	ND	2	1	2	ND	2	ND	2
Specific Conductance	µmho/cm	1600	S	3400	3400	3300	3300	2400	2400	1100	1100	1000	1000
Turbidity	NTU	5	S	4.6	3.2	2.6	3.1	1.7	2.5	0.12	0.24	0.27	0.33
Metals													
Aluminum, Total	µg/L	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	µg/L	10	P	4.8	1.6	4.8	ND	4.2	1.1	3.1	ND	2.8	ND
Barium, Total	µg/L	1000	P	16	17	16	17	20	21	29	32	25	27
Beryllium, Total	µg/L	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	µg/L	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.7
Copper, Total	µg/L	1300	P	25	3.2	22	3.6	15	ND	5.6	ND	5.8	ND
Hexavalent Chromium (Cr VI)	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	3.4	3.1
Lead, Total	µg/L	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total	µg/L	50	P	ND	ND	ND	ND	ND	ND	12	13	16	18
Silver, Total	µg/L	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	µg/L	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds													
1,1-Dichloroethane	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	µg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	µg/L	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-Isopropyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/L	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	µg/L	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	µg/L	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	µg/L	6	P	ND	ND	ND	ND	ND	ND	1.4	1.3	2.7	2.5
Styrene	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Trihalomethanes	µg/L	80	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	µg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride (VC)	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (Total)	µg/L	1750	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 (N): Notification Level (A): Action Level (ND): Not Detected

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2012-13

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Constituents	Units	MCL	MCL Type	Whittier #2											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				5/16/13	9/12/13	5/16/13	9/12/13	5/16/13	9/12/13	5/16/13	9/12/13	5/16/13	9/12/13	5/16/13	9/12/13
General Minerals															
Alkalinity	mg/L	-		240	260	170	160	200	200	380	390	220	220	340	350
Anion Sum	meq/L	-		14	15	4	3.9	12	12	28	28	12	11	16	17
Bicarbonate as HCO3	mg/L	-		300	320	200	200	250	240	470	470	260	260	420	420
Boron	mg/L	1	N	0.59	0.58	0.24	0.24	0.22	0.24	0.78	0.85	0.18	0.18	0.33	0.36
Calcium, Total	mg/L	-		88	110	22	22	80	89	130	130	120	120	150	170
Carbon Dioxide	mg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/L	-		ND	ND	2.3	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l	-		15	16	4.1	4	12	13	28	28	11	11	16	18
Chloride	mg/L	500	S	220	190	11	11	130	130	240	240	120	120	100	98
Fluoride	mg/L	2	P	0.3	0.28	0.3	0.29	0.29	0.29	0.46	0.45	0.26	0.25	0.29	0.28
Hardness (Total, as CaCO3)	mg/L	-		330	400	73	73	340	370	670	680	390	390	550	600
Iron, Total	mg/L	0.3	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None	-		0.77	0.8	0.45	0.061	0.87	0.77	1	0.97	0.93	0.88	0.99	1.1
Magnesium, Total	None	-		27	30	4.3	4.2	35	37	85	85	24	24	40	42
Manganese, Total	mg/L	50	S	26	27	40	42	40	35	160	160	ND	ND	ND	ND
Nitrate as Nitrogen	mg/L	10	P	ND	ND	ND	ND	0.64	0.63	2.4	2.3	4.8	4.7	7.1	7.2
Nitrate (as NO3)	mg/L	45	P	ND	ND	ND	ND	2.8	2.8	10	10	21	20	31	32
Nitrite, as Nitrogen	mg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/L	-		4.2	4.9	2.3	2.5	3.8	4.5	4.3	5.1	4.5	4.7	4.7	5.5
Sodium, Total	mg/L	-		180	180	59	57	110	120	330	320	80	79	130	130
Sulfate	mg/L	500	S	160	200	15	14	220	220	640	620	170	160	290	320
Surfactants	mg/L	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/L	1000	S	850	930	230	240	760	760	1700	1800	690	660	990	1000
Total Nitrogen, Nitrate+Nitrite	mg/L	10	P	ND	ND	ND	ND	0.64	0.63	2.4	2.3	4.8	4.7	7.1	7.2
Total Organic Carbon	mg/L	-		1.1	0.82	0.66	0.5	ND	0.66	0.62	0.61	0.6	0.7	0.65	0.64
General Physical Properties															
Apparent Color	ACU	15	S	5	ND	10	3	3	ND	3	ND	3	ND	3	ND
Lab pH	Units	-		7.8	7.7	8.2	7.9	8	7.9	7.7	7.6	7.9	7.8	7.6	7.7
Odor	TON	3	S	1	2	ND	1	ND	1	ND	1	ND	ND	1	1
Specific Conductance	µmho/cm	1600	S	1400	1500	380	390	1200	1200	2500	2500	1100	1100	1500	1500
Turbidity	NTU	5	S	0.64	0.44	0.13	0.19	0.15	0.14	0.074	0.2	0.14	0.37	0.24	0.27
Metals															
Aluminum, Total	µg/L	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	µg/L	10	P	ND	ND	ND	ND	1.5	ND	ND	ND	ND	ND	1.5	1.1
Barium, Total	µg/L	1000	P	21	25	22	24	48	50	14	14	74	86	35	37
Beryllium, Total	µg/L	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	µg/L	50	P	ND	ND	ND	ND	2.9	3.4	ND	1	2.1	2.3	3.9	5
Copper, Total	µg/L	1300	P	ND	2.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	µg/L	-		ND	ND	ND	ND	3.2	3	0.081	0.034	2.2	2.1	4.4	4.5
Lead, Total	µg/L	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.8
Selenium, Total	µg/L	50	P	ND	6.4	ND	ND	ND	ND	6.5	9.8	ND	ND	ND	ND
Silver, Total	µg/L	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	µg/L	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds															
1,1-Dichloroethane	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	µg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	µg/L	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-Isopropyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/L	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	µg/L	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	µg/L	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	µg/L	6	P	ND	ND	ND	ND	1.8	1.6	2.3	2	2.8	2.6	2.8	2.6
Styrene	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.65	0.69
Toluene	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Trihalomethanes	µg/L	80	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	µg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	1	0.75	ND	ND
Vinyl chloride (VC)	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (Total)	µg/L	1750	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 (N): Notification Level (A): Action Level (ND): Not Detected

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2012-13

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Constituents	Units	MCL	MCL Type	Whittier Narrows #1								
				Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 7	Zone 8	Zone 9
				9/18/13	9/18/13	9/18/13	9/18/13	9/18/13	9/18/13	9/18/13	9/18/13	9/18/13
General Minerals												
Alkalinity	mg/L	-		89	110	130	150	140	160	150	150	160
Anion Sum	meq/L	-		18	3.3	7.2	8.2	4.7	9	9.6	9.6	9
Bicarbonate as HCO3	mg/L	-		110	130	160	180	160	200	190	190	200
Boron	mg/L	1	N	0.95	0.15	0.062	0.09	0.064	0.22	0.25	0.26	0.22
Calcium, Total	mg/L	-		60	11	96	100	58	88	85	82	71
Carbon Dioxide	mg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l	-		18	3.2	7	8.1	4.7	9	9.6	9.6	9
Chloride	mg/L	500	S	560	32	75	96	30	110	120	120	110
Fluoride	mg/L	2	P	0.72	0.4	0.23	0.24	0.29	0.25	0.26	0.26	0.35
Hardness (Total, as CaCO3)	mg/L	-		200	28	280	320	180	280	270	260	250
Iron, Total	mg/L	0.3	S	7.8	0.03	0.029	ND	ND	ND	0.049	ND	0.025
Langelier Index - 25 degree	None	-		-0.47	-0.12	0.69	0.86	0.72	0.94	0.87	0.8	0.82
Magnesium, Total	None	-		12	0.47	9.8	13	8.8	14	14	15	17
Manganese, Total	µg/L	50	S	650	16	ND	3.3	ND	52	48	17	26
Nitrate as Nitrogen	mg/L	10	P	ND	ND	1.2	1.5	0.89	1.9	3.1	3.3	3.5
Nitrate (as NO3)	mg/L	45	P	ND	ND	5.4	6.5	3.9	8.2	14	14	16
Nitrite, as Nitrogen	mg/L	1	P	ND	ND	ND	ND	0.13	ND	ND	ND	0.25
Potassium, Total	mg/L	-		3.8	1.7	2.9	4.4	3.4	5.3	5.6	5.8	5.8
Sodium, Total	mg/L	-		320	60	31	36	22	76	91	96	90
Sulfate	mg/L	500	S	0.52	9.9	110	120	53	120	140	140	110
Surfactants	mg/L	0.5	S	ND	0.094	ND	0.06	0.054	0.084	0.074	0.069	0.094
Total Dissolved Solid (TDS)	mg/L	1000	S	1100	190	450	490	280	540	590	600	560
Total Nitrogen, Nitrate+Nitrite	mg/L	10	P	ND	ND	1.2	1.5	0.89	2	3.1	3.3	3.8
Total Organic Carbon	mg/L	-		10	0.48	0.52	0.64	0.32	0.93	0.99	1	1.8
General Physical Properties												
Apparent Color	ACU	15	S	80	ND	ND	ND	ND	ND	ND	ND	5
Lab pH	Units	-		7.2	8.2	7.9	8	8.2	8.1	8.1	8.1	8.1
Odor	TON	3	S	2	2	ND	ND	ND	ND	1	ND	1
Specific Conductance	µmho/cm	1600	S	2000	340	730	830	480	930	990	1000	950
Turbidity	NTU	5	S	84	0.96	0.26	1	2.9	2.4	1.1	1.8	1.2
Metals												
Aluminum, Total	µg/L	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	µg/L	10	P	10	ND	ND	1.2	1.1	1.3	1.9	ND	ND
Barium, Total	µg/L	1000	P	370	26	220	200	140	140	120	87	55
Beryllium, Total	µg/L	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	µg/L	50	P	ND	ND	1.5	ND	2.2	ND	ND	ND	ND
Copper, Total	µg/L	1300	P	ND	ND	ND	ND	ND	ND	ND	3.1	4
Hexavalent Chromium (Cr VI)	µg/L	-		ND	ND	1.7	0.37	2.8	ND	ND	ND	ND
Lead, Total	µg/L	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	µg/L	100	P	ND	ND	ND	ND	ND	21	6.1	7	22
Selenium, Total	µg/L	50	P	8.9	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total	µg/L	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	µg/L	5000	S	ND	ND	37	ND	ND	35	45	20	ND
Volatile Organic Compounds												
1,1-Dichloroethane	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	µg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	µg/L	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-Isopropyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/L	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	µg/L	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	µg/L	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Trihalomethanes	µg/L	80	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	µg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride (VC)	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (Total)	µg/L	1750	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 (N): Notification Level (A): Action Level (ND): Not Detected

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2012-13

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Constituents	Units	MCL	MCL Type	Willowbrook #1							
				Zone 1		Zone 2		Zone 3		Zone 4	
				4/23/13	9/25/13	4/23/13	9/25/13	4/23/13	9/25/13	4/23/13	9/25/13
General Minerals											
Alkalinity	mg/L	-		260	200	180	170	180	170	130	180
Anion Sum	meq/L	-		5.8	5.6	5.4	5.2	5.8	5.7	4.7	5.7
Bicarbonate as HCO3	mg/L	-		310	250	220	200	220	210	150	220
Boron	mg/L	1	N	0.18	0.16	0.11	0.11	0.12	0.12	0.12	0.12
Calcium, Total	mg/L	-		35	45	52	52	57	57	57	57
Carbon Dioxide	mg/L	-		ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/L	-		3.2	2	ND	2	ND	ND	ND	ND
Cation Sum	meq/l	-		5.9	5.8	5.4	5.4	5.8	5.8	5.8	5.8
Chloride	mg/L	500	S	17	19	21	20	22	21	26	27
Fluoride	mg/L	2	P	0.26	0.3	0.3	0.31	0.39	0.42	0.35	0.38
Hardness (Total, as CaCO3)	mg/L	-		120	150	170	170	200	190	190	180
Iron, Total	mg/L	0.3	S	0.068	0.092	ND	ND	0.089	0.086	ND	ND
Langelier Index - 25 degree	None	-		0.78	0.66	0.66	0.73	0.73	0.59	0.3	0.67
Magnesium, Total	None	-		7.6	9.3	10	9.8	13	12	10	10
Manganese, Total	µg/L	50	S	45	67	43	48	26	29	81	98
Nitrate as Nitrogen	mg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/L	45	P	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, as Nitrogen	mg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/L	-		5.1	4.2	2.8	2.7	3.6	3.6	3.1	2.9
Sodium, Total	mg/L	-		78	62	43	43	42	43	46	47
Sulfate	mg/L	500	S	6.2	48	60	59	78	76	66	63
Surfactants	mg/L	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/L	1000	S	340	330	310	310	350	330	340	320
Total Nitrogen, Nitrate+Nitrite	mg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/L	-		2.4	1.2	ND	0.34	ND	ND	ND	ND
General Physical Properties											
Apparent Color	ACU	15	S	ND	15	ND	ND	ND	ND	10	3
Lab pH	Units	-		8.2	8.1	8	8.2	8.1	8	7.8	8
Odor	TON	3	S	8	1	2	ND	1	1	1	ND
Specific Conductance	µmho/cm	1600	S	530	560	540	520	540	560	560	560
Turbidity	NTU	5	S	2.5	1.6	0.097	0.095	0.3	0.38	4.7	6.5
Metals											
Aluminum, Total	µg/L	1000	P	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	µg/L	10	P	3.8	8.4	3.3	ND	2.7	3.1	4.5	5.1
Barium, Total	µg/L	1000	P	38	48	40	54	77	82	140	150
Beryllium, Total	µg/L	4	P	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	µg/L	50	P	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	µg/L	1300	P	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	µg/L	-		ND	0.025	ND	ND	ND	ND	ND	ND
Lead, Total	µg/L	15	P	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total	µg/L	50	P	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total	µg/L	100	S	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	µg/L	5000	S	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds											
1,1-Dichloroethane	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	µg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	µg/L	70	P	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND
Di-Isopropyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/L	300	P	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	µg/L	1200	P	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	µg/L	13	P	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND
Total Trihalomethanes	µg/L	80	P	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	µg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride (VC)	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (Total)	µg/L	1750	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 (N): Notification Level (A): Action Level (ND): Not Detected

TABLE 3.2
WEST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2012-13

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Constituents	Units	MCL	MCL Type	Carson #1							
				Zone 1		Zone 2		Zone 3		Zone 4	
				4/10/13	8/27/13	4/10/13	8/27/13	4/10/13	8/27/13	4/10/13	8/27/13
General Minerals											
Alkalinity	mg/L	-		140	130	170	150	160	150	170	160
Anion Sum	meq/L	-			3.2	4	3.7	5.2	5	6.2	6
Bicarbonate as HCO3	mg/L	-		160	160	210	190	200	180	210	200
Boron	mg/L	1	N	0.097	0.081	0.1	0.09	0.1	0.09	0.12	0.1
Calcium, Total	mg/L	-		21	20	32	30	43	41	51	49
Carbon Dioxide	mg/L	-		ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/L	-		2.3	ND	2.6	ND	2	ND	ND	ND
Cation Sum	meq/l	-		3.7	3.4	4.1	3.9	5.3	5.1	6.3	6.2
Chloride	mg/L	500	S	20	21	21	22	22	23	44	44
Fluoride	mg/L	2	P	0.24	0.25	0.2	0.2	0.29	0.29	0.38	0.38
Hardness (Total, as CaCO3)	mg/L	-		69	65	110	100	160	150	190	180
Iron, Total	mg/L	0.3	S	ND	ND	0.021	ND	ND	ND	0.07	0.07
Langelier Index - 25 degree	None	-		0.42	-0.051	0.65	0.19	0.69	0.32	0.58	0.18
Magnesium, Total	None	-		4.2	3.9	6.9	6.6	13	12	15	15
Manganese, Total	µg/L	50	S	20	20	14	15	27	28	86	90
Nitrate as Nitrogen	mg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/L	45	P	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, as Nitrogen	mg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/L	-		3.1	2.7	2.6	2.2	3.2	2.7	3.8	3.3
Sodium, Total	mg/L	-		52	48	44	42	46	45	57	56
Sulfate	mg/L	500	S	ND	ND	ND	ND	62	62	69	69
Surfactants	mg/L	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/L	1000	S	200	220	220	250	290	330	360	380
Total Nitrogen, Nitrate+Nitrite	mg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/L	-		0.83	0.84	0.47	0.47	ND	0.44	0.44	0.5
General Physical Properties											
Apparent Color	ACU	15	S	10	5	ND	3	ND	3	ND	3
Lab pH	Units	-		8.3	7.9	8.3	7.9	8.2	7.9	8	7.6
Odor	TON	3	S	1	3	2	1	1	1	1	2
Specific Conductance	µmho/cm	1600	S	350	340	400	380	520	500	630	610
Turbidity	NTU	5	S	0.13	3.2	0.15	0.091	0.067	0.13	0.31	0.48
Metals											
Aluminum, Total	µg/L	1000	P	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	µg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Barium, Total	µg/L	1000	P	15	14	35	36	62	63	170	150
Beryllium, Total	µg/L	4	P	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	µg/L	50	P	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	µg/L	1300	P	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total	µg/L	15	A	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total	µg/L	50	P	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total	µg/L	100	S	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	µg/L	5000	S	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds											
1,1-Dichloroethane	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	µg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	µg/L	70	P	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND
Di-Isopropyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/L	300	P	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	µg/L	1200	P	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	µg/L	13	P	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND
Total Trihalomethanes	µg/L	80	P	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	µg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride (VC)	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (Total)	µg/L	1750	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 (N): Notification Level (A): Action Level (ND): Not Detected

TABLE 3.2
WEST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2012-13

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Constituents	Units	MCL	MCL Type	Carson #2									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				5/8/13	8/28/13	5/8/13	8/28/13	5/8/13	8/28/13	5/8/13	8/28/13	5/8/13	8/28/13
General Minerals													
Alkalinity	mg/L	-		160	160	190	180	170	160	180	180	170	170
Anion Sum	meq/L	-		3.7	3.7	4.5	4.2	4.9	4.5	4.2	4.2	4.5	4.4
Bicarbonate as HCO3	mg/L	-		190	190	230	220	210	200	220	220	200	200
Boron	mg/L	1	N	0.13	0.11	0.13	0.11	0.12	0.1	0.11	0.093	0.1	0.089
Calcium, Total	mg/L	-		2.9	3.5	10	9.2	31	27	35	31	42	39
Carbon Dioxide	mg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/L	-		5.3	3	5.6	2.2	3.5	ND	3	ND	2.2	ND
Cation Sum	meq/l	-		4.2	3.7	4.9	4.4	5.2	4.6	4.7	4.2	4.9	4.5
Chloride	mg/L	500	S	20	19	22	21	23	22	23	22	22	21
Fluoride	mg/L	2	P	0.31	0.3	0.25	0.24	0.26	0.26	0.22	0.21	0.27	0.27
Hardness (Total, as CaCO3)	mg/L	-		9.2	11	42	36	120	110	140	120	150	130
Iron, Total	mg/L	0.3	S	ND	ND	ND	ND	ND	ND	ND	ND	0.059	0.045
Langelier Index - 25 degree	None	-		-0.073	-0.24	0.51	0.038	0.79	0.36	0.76	0.44	0.72	0.5
Magnesium, Total	None	-		0.5	0.65	3.8	3.3	11	9.4	12	11	10	9
Manganese, Total	µg/L	50	S	2.4	3.2	5.9	5.8	13	13	8	12	41	45
Nitrate as Nitrogen	mg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/L	45	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, as Nitrogen	mg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/L	-		2	1.9	4	3.8	4.5	4.2	4	3.8	3.3	3.1
Sodium, Total	mg/L	-		91	79	91	81	59	55	44	39	42	39
Sulfate	mg/L	500	S	ND	ND	0.51	0.53	34	25	ND	ND	22	22
Surfactants	mg/L	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/L	1000	S	240	220	270	280	280	280	240	250	280	280
Total Nitrogen, Nitrate+Nitrite	mg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/L	-		2	1.7	1.1	1	0.71	0.62	ND	0.44	ND	0.42
General Physical Properties													
Apparent Color	ACU	15	S	40	35	20	15	10	10	5	3	5	ND
Lab pH	Units	-		8.6	8.4	8.6	8.2	8.4	8.1	8.3	8.1	8.2	8
Odor	TON	3	S	2	3	1	2	2	2	1	3	ND	2
Specific Conductance	µmho/cm	1600	S	370	370	440	430	480	450	420	410	440	440
Turbidity	NTU	5	S	0.36	1	0.12	0.23	0.14	0.17	0.2	0.3	1.8	0.27
Metals													
Aluminum, Total	µg/L	1000	P	26	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	µg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium, Total	µg/L	1000	P	ND	ND	5.7	5.5	14	14	16	21	22	24
Beryllium, Total	µg/L	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	µg/L	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	µg/L	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total	µg/L	15	A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total	µg/L	50	P	ND	ND	ND	5.3	ND	ND	ND	6	ND	ND
Silver, Total	µg/L	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	µg/L	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds													
1,1-Dichloroethane	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	µg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	µg/L	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-Isopropyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/L	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	µg/L	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	µg/L	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Trihalomethanes	µg/L	80	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	µg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride (VC)	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (Total)	µg/L	1750	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 (N): Notification Level (A): Action Level (ND): Not Detected

TABLE 3.2
WEST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2012-13

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Constituents	Units	MCL	MCL Type	Carson #3											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				5/9/13	9/18/13	5/9/13	9/18/13	5/9/13	9/18/13	5/9/13	9/18/13	5/9/13	9/18/13	5/9/13	9/18/13
General Minerals															
Alkalinity	mg/L	-		350	350	140	150	160	160	160	160	160	170	170	170
Anion Sum	meq/L	-		7.4	7.4	3.8	3.8	3.8	3.9	3.9	3.9	3.8	4.1	5.1	5.2
Bicarbonate as HCO3	mg/L	-		430	420	180	180	190	200	200	200	190	210	200	210
Boron	mg/L	1	N	0.65	0.62	0.1	0.1	0.1	0.1	0.092	0.097	0.11	0.1	0.12	0.12
Calcium, Total	mg/L	-		7.8	7.7	20	19	16	15	23	22	33	30	45	45
Carbon Dioxide	mg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/L	-		8.2	6.8	2.9	2.9	2.2	2.6	2.4	2.6	2.7	2.7	2.2	2.2
Cation Sum	meq/l	-		7.6	7.4	4.1	3.8	4.3	3.8	4.2	3.9	4.5	4.1	5.4	5.2
Chloride	mg/L	500	S	12	12	21	20	22	21	22	21	22	21	22	21
Fluoride	mg/L	2	P	0.54	0.54	0.23	0.24	0.3	0.31	0.26	0.26	0.25	0.26	0.35	0.34
Hardness (Total, as CaCO3)	mg/L	-		29	28	66	62	53	50	84	79	120	110	160	160
Iron, Total	mg/L	0.3	S	0.052	0.059	ND	ND	ND	ND	ND	ND	ND	ND	0.034	0.029
Langelier Index - 25 degree	None	-		0.55	0.5	0.5	0.44	0.29	0.37	0.48	0.49	0.69	0.62	0.75	0.73
Magnesium, Total	None	-		2.3	2.2	4.1	3.7	3.2	2.9	6.5	5.9	9	8.1	12	12
Manganese, Total	µg/L	50	S	16	20	16	17	30	32	36	39	22	22	42	47
Nitrate as Nitrogen	mg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/L	45	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, as Nitrogen	mg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/L	-		2.8	2.8	3.3	3.2	3.4	3.2	4	3.8	3.2	3	3.6	3.6
Sodium, Total	mg/L	-		160	160	63	57	72	63	57	51	47	42	48	43
Sulfate	mg/L	500	S	1.1	0.89	14	13	0.68	0.54	ND	0.52	0.53	ND	55	52
Surfactants	mg/L	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/L	1000	S	470	430	230	210	230	220	230	220	230	240	310	300
Total Nitrogen, Nitrate+Nitrite	mg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/L	-		13	12	0.99	0.94	1.3	1.1	0.77	0.71	ND	0.45	ND	ND
General Physical Properties															
Apparent Color	ACU	15	S	20	140	5	10	15	15	5	5	3	ND	3	ND
Lab pH	Units	-		8.5	8.4	8.4	8.4	8.2	8.3	8.3	8.3	8.3	8.3	8.2	8.2
Odor	TON	3	S	2	1	ND	ND	1	ND	1	ND	ND	ND	ND	1
Specific Conductance	µmho/cm	1600	S	700	700	390	380	380	380	380	380	400	400	510	510
Turbidity	NTU	5	S	0.46	0.34	0.34	0.19	0.19	0.56	0.11	0.094	1.3	0.086	1.4	0.62
Metals															
Aluminum, Total	µg/L	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	µg/L	10	P	3.8	1.2	ND	ND	ND	ND	ND	ND	ND	ND	1.8	1.6
Barium, Total	µg/L	1000	P	7	7.5	15	16	15	16	18	19	28	28	57	65
Beryllium, Total	µg/L	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	µg/L	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.2	ND	ND
Copper, Total	µg/L	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	µg/L	-		ND	0.024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total	µg/L	15	A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total	µg/L	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total	µg/L	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	µg/L	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds															
1,1-Dichloroethane	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	µg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	µg/L	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-Isopropyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/L	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	µg/L	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	µg/L	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	µg/L	6	P	ND	ND	1.8	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Trihalomethanes	µg/L	80	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	µg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride (VC)	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (Total)	µg/L	1750	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 (N): Notification Level (A): Action Level (ND): Not Detected

TABLE 3.2
WEST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2012-13

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Constituents	Units	MCL	MCL Type	Chandler #3			
				Zone 1		Zone 2	
				5/9/13	9/19/13	5/9/13	9/19/13
General Minerals							
Alkalinity	mg/L	-		350	330	400	430
Anion Sum	meq/L	-		11	12	18	18
Bicarbonate as HCO3	mg/L	-		420	400	490	530
Boron	mg/L	1	N	0.21	0.2	0.37	0.39
Calcium, Total	mg/L	-		85	83	180	160
Carbon Dioxide	mg/L	-		ND	ND	ND	14
Carbonate as CO3	mg/L	-		3.3	ND	ND	2.2
Cation Sum	meq/l	-		12	12	20	18
Chloride	mg/L	500	S	140	160	210	180
Fluoride	mg/L	2	P	0.25	0.25	0.2	0.19
Hardness (Total, as CaCO3)	mg/L	-		320	310	660	590
Iron, Total	mg/L	0.3	S	0.19	0.17	ND	ND
Langelier Index - 25 degree	None	-		1.2	0.83	1.2	1.3
Magnesium, Total	None	-		26	25	53	47
Manganese, Total	µg/L	50	S	75	80	9.3	18
Nitrate as Nitrogen	mg/L	10	P	ND	ND	18	14
Nitrate (as NO3)	mg/L	45	P	ND	ND	78	61
Nitrite, as Nitrogen	mg/L	1	P	ND	ND	ND	ND
Potassium, Total	mg/L	-		3.9	4	4.1	4
Sodium, Total	mg/L	-		140	130	140	140
Sulfate	mg/L	500	S	20	27	130	150
Surfactants	mg/L	0.5	S	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/L	1000	S	650	670	1000	1100
Total Nitrogen, Nitrate+Nitrite	mg/L	10	P	ND	ND	18	14
Total Organic Carbon	mg/L	-		1.3	1.1	1	0.84
General Physical Properties							
Apparent Color	ACU	15	S	10	10	10	5
Lab pH	Units	-		8.1	7.8	7.7	7.8
Odor	TON	3	S	ND	1	1	ND
Specific Conductance	µmho/cm	1600	S	1100	1200	1700	1700
Turbidity	NTU	5	S	1.5	3.1	22	20
Metals							
Aluminum, Total	µg/L	1000	P	ND	ND	ND	ND
Antimony, Total	µg/L	6	P	ND	ND	ND	ND
Arsenic, Total	µg/L	10	P	2.6	ND	2.1	3.5
Barium, Total	µg/L	1000	P	38	36	100	110
Beryllium, Total	µg/L	4	P	ND	ND	ND	ND
Cadmium, Total	µg/L	5	P	ND	ND	ND	ND
Chromium, Total	µg/L	50	P	ND	ND	2	4.9
Copper, Total	µg/L	1300	P	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	µg/L	-		ND	ND	2.5	4.2
Lead, Total	µg/L	15	A	ND	ND	ND	ND
Mercury	µg/L	2	P	ND	ND	ND	ND
Nickel, Total	µg/L	100	P	ND	ND	79	91
Selenium, Total	µg/L	50	P	ND	ND	9.5	7
Silver, Total	µg/L	100	S	ND	ND	ND	ND
Thallium, Total	µg/L	2	P	ND	ND	ND	ND
Zinc, Total	µg/L	5000	S	ND	ND	ND	ND
Volatile Organic Compounds							
1,1-Dichloroethane	µg/L	5	P	ND	ND	ND	ND
1,1-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND
1,2-Dichloroethane	µg/L	0.5	P	ND	ND	ND	ND
Benzene	µg/L	1	P	ND	ND	ND	ND
Carbon Tetrachloride	µg/L	0.5	P	ND	ND	ND	ND
Chlorobenzene	µg/L	70	P	ND	ND	ND	ND
Chloromethane	µg/L	-		ND	ND	ND	ND
cis-1,2-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND
Di-Isopropyl Ether	µg/L	-		ND	ND	ND	ND
Ethylbenzene	µg/L	300	P	ND	ND	ND	ND
Ethyl Tert Butyl Ether	µg/L	-		ND	ND	ND	ND
Freon 11	µg/L	150	P	ND	ND	ND	ND
Freon 113	µg/L	1200	P	ND	ND	ND	ND
Methylene Chloride	µg/L	5	P	ND	ND	ND	ND
MTBE	µg/L	13	P	ND	ND	ND	ND
Perchlorate	µg/L	6	P	ND	ND	4.4	3.2
Styrene	µg/L	100	P	ND	ND	ND	ND
Tert Amyl Methyl Ether	µg/L	-		ND	ND	ND	ND
Tetrachloroethylene (PCE)	µg/L	5	P	ND	ND	ND	ND
Toluene	µg/L	150	P	ND	ND	ND	ND
Total Trihalomethanes	µg/L	80	P	ND	ND	ND	ND
trans-1,2-Dichloroethylene	µg/L	10	P	ND	ND	ND	ND
Trichloroethylene (TCE)	µg/L	5	P	ND	ND	ND	ND
Vinyl chloride (VC)	µg/L	0.5	P	ND	ND	ND	ND
Xylenes (Total)	µg/L	1750	P	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level (A): Action Level (ND): Not Detected

TABLE 3.2
WEST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2012-13

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Constituents	Units	MCL	MCL Type	Gardena #1							
				Zone 1		Zone 2		Zone 3		Zone 4	
				4/17/13	9/9/13	4/17/13	9/9/13	4/17/13	9/9/13	4/17/13	9/9/13
General Minerals											
Alkalinity	mg/L	-		260	250	180	170	170	160	200	190
Anion Sum	meq/L	-		5.8	5.5	5.4	5.3	5.5	5.3	40	38
Bicarbonate as HCO3	mg/L	-		320	300	220	210	200	190	240	230
Boron	mg/L	1	N	0.34	0.34	0.13	0.12	0.11	0.1	0.13	0.13
Calcium, Total	mg/L	-		15	14	54	50	55	51	440	440
Carbon Dioxide	mg/L	-		ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/L	-		3.9	2.4	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l	-		6	5.9	5.6	5.5	5.6	5.4	40	39
Chloride	mg/L	500	S	18	18	23	23	24	24	1200	1100
Fluoride	mg/L	2	P	0.17	0.2	0.39	0.41	0.35	0.37	0.12	0.16
Hardness (Total, as CaCO3)	mg/L	-		69	65	180	180	180	170	1600	1600
Iron, Total	mg/L	0.3	S	0.19	0.18	0.025	ND	0.032	0.02	ND	ND
Langelier Index - 25 degree	None	-		0.52	0.31	0.68	0.57	0.7	0.56	0.92	1.5
Magnesium, Total	None	-		7.4	7.2	12	12	11	11	130	130
Manganese, Total	µg/L	50	S	42	51	52	56	35	36	ND	ND
Nitrate as Nitrogen	mg/L	10	P	ND	ND	ND	ND	ND	ND	21	22
Nitrate (as NO3)	mg/L	45	P	ND	ND	ND	ND	ND	ND	94	96
Nitrite, as Nitrogen	mg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/L	-		10	10	3.7	3.5	3.3	3.2	8.2	7.5
Sodium, Total	mg/L	-		99	100	43	43	44	44	150	140
Sulfate	mg/L	500	S	ND	ND	51	59	68	68	45	47
Surfactants	mg/L	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/L	1000	S	360	330	320	320	350	310	2700	3500
Total Nitrogen, Nitrate+Nitrite	mg/L	10	P	ND	ND	ND	ND	ND	ND	21	22
Total Organic Carbon	mg/L	-		2.5	2.2	0.49	0.36	0.31	0.34	ND	ND
General Physical Properties											
Apparent Color	ACU	15	S	25	30	10	10	ND	10	5	10
Lab pH	Units	-		8.3	8.1	8	8	8.1	8	7.3	7.9
Odor	TON	3	S	3	2	1	ND	1	1	1	ND
Specific Conductance	µmho/cm	1600	S	580	580	530	530	540	540	4100	4100
Turbidity	NTU	5	S	1.8	5	12	7.9	1.7	13	5.7	8.7
Metals											
Aluminum, Total	µg/L	1000	P	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	µg/L	10	P	60	54	ND	ND	ND	ND	2.4	ND
Barium, Total	µg/L	1000	P	15	16	52	55	26	28	490	480
Beryllium, Total	µg/L	4	P	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	µg/L	50	P	ND	ND	ND	ND	ND	ND	6.7	7.8
Copper, Total	µg/L	1300	P	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	µg/L	-		ND	ND	ND	ND	ND	ND	7	6.8
Lead, Total	µg/L	15	A	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	10
Selenium, Total	µg/L	50	P	ND	ND	ND	ND	ND	ND	6.3	12
Silver, Total	µg/L	100	S	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	µg/L	5000	S	ND	ND	ND	ND	ND	ND	26	ND
Volatile Organic Compounds											
1,1-Dichloroethane	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	µg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	µg/L	70	P	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND
Di-Isopropyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/L	300	P	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	µg/L	1200	P	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	µg/L	13	P	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	µg/L	6	P	ND	ND	ND	ND	ND	ND	12	11
Styrene	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND
Total Trihalomethanes	µg/L	80	P	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	µg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride (VC)	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (Total)	µg/L	1750	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 (N): Notification Level (A): Action Level (ND): Not Detected

TABLE 3.2
WEST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2012-13

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Constituents	Units	MCL	MCL Type	Gardena #2									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				4/11/13	9/8/13	4/11/13	9/8/13	4/11/13	9/8/13	4/11/13	9/8/13	4/11/13	9/8/13
General Minerals													
Alkalinity	mg/L	-		260	280	170	180	170	170	160	170	190	180
Anion Sum	meq/L	-		5.7	6	5.3	5.3	5	5	3.9	4	5.1	4.9
Bicarbonate as HCO3	mg/L	-		320	340	210	210	200	200	200	200	240	220
Boron	mg/L	1	N	0.31	0.27	0.16	0.14	0.13	0.1	0.094	0.076	0.12	0.096
Calcium, Total	mg/L	-		16	16	39	38	47	47	30	30	48	49
Carbon Dioxide	mg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/L	-		5.5	2.2	2.2	ND	ND	ND	2	ND	2.7	ND
Cation Sum	meq/l	-		6.3	6.3	5.7	5.7	5.3	5.4	4.2	4.3	5.3	5.5
Chloride	mg/L	500	S	14	13	22	22	23	23	22	22	40	40
Fluoride	mg/L	2	P	0.24	0.25	0.26	0.27	0.38	0.37	0.28	0.28	0.3	0.3
Hardness (Total, as CaCO3)	mg/L	-		66	65	150	150	160	170	110	110	160	170
Iron, Total	mg/L	0.3	S	0.022	0.023	0.035	0.036	0.044	0.044	0.045	0.049	0.04	0.04
Langelier Index - 25 degree	None	-		0.69	0.3	0.67	0.27	0.67	0.32	0.53	0.12	0.86	0.5
Magnesium, Total	None	-		6.4	6.3	13	13	12	12	9.2	9.2	11	11
Manganese, Total	µg/L	50	S	22	25	28	32	36	43	40	45	48	52
Nitrate as Nitrogen	mg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/L	45	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, as Nitrogen	mg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/L	-		5.6	6	6.2	6.3	3.9	4.3	3.4	3.7	3	3.6
Sodium, Total	mg/L	-		110	110	58	58	44	46	43	45	45	48
Sulfate	mg/L	500	S	ND	ND	55	55	46	46	ND	ND	6.1	5.6
Surfactants	mg/L	0.5	S	ND	ND	ND	0.052	ND	ND	ND	0.078	ND	0.054
Total Dissolved Solid (TDS)	mg/L	1000	S	340	330	310	320	290	320	220	230	290	290
Total Nitrogen, Nitrate+Nitrite	mg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/L	-		3.3	3.1	0.57	0.64	0.41	0.46	0.66	0.58	0.33	0.33
General Physical Properties													
Apparent Color	ACU	15	S	25	25	5	5	ND	3	5	3	ND	ND
Lab pH	Units	-		8.4	8	8.2	7.8	8.1	7.8	8.2	7.8	8.2	7.9
Odor	TON	3	S	1	2	2	1	2	1	2	2	3	2
Specific Conductance	µmho/cm	1600	S	580	550	530	500	500	480	400	380	510	490
Turbidity	NTU	5	S	0.62	0.48	0.075	0.13	0.2	0.23	1.3	1.4	13	14
Metals													
Aluminum, Total	µg/L	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	µg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium, Total	µg/L	1000	P	18	18	19	19	21	22	40	39	81	81
Beryllium, Total	µg/L	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	µg/L	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	µg/L	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total	µg/L	15	A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total	µg/L	50	P	ND	ND	ND	ND	ND	ND	ND	ND	8.7	11
Silver, Total	µg/L	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	µg/L	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds													
1,1-Dichloroethane	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	µg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	µg/L	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-Isopropyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/L	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	µg/L	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	µg/L	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Trihalomethanes	µg/L	80	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	µg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride (VC)	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (Total)	µg/L	1750	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 (N): Notification Level (A): Action Level (ND): Not Detected

TABLE 3.2
WEST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2012-13

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Constituents	Units	MCL	MCL Type	Hawthorne #1											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				5/8/13	9/25/13	5/8/13	9/25/13	5/8/13	9/25/13	5/8/13	9/25/13	5/8/13	9/25/13	5/8/13	9/25/13
General Minerals															
Alkalinity	mg/L	-		690	690	640	650	510	500	310	300	210	190	300	280
Anion Sum	meq/L	-		15	15	14	14	12	11	7.5	7.4	15	13	25	23
Bicarbonate as HCO3	mg/L	-		840	840	780	790	620	600	370	360	260	230	370	340
Boron	mg/L	1	N	1.3	1.4	1	1	0.66	0.62	0.34	0.3	0.14	0.12	0.28	0.27
Calcium, Total	mg/L	-		15	16	12	13	36	35	35	32	130	120	210	200
Carbon Dioxide	mg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/L	-		9.3	6.9	9.9	10	6.4	4.9	3.1	2.3	ND	ND	ND	ND
Cation Sum	meq/l	-		15	16	14	16	11	12	8	7.5	16	13	26	25
Chloride	mg/L	500	S	47	45	40	40	44	43	49	49	330	300	460	440
Fluoride	mg/L	2	P	0.1	0.12	0.23	0.26	0.21	0.24	0.35	0.39	0.27	0.32	0.23	0.25
Hardness (Total, as CaCO3)	mg/L	-		90	98	68	72	190	180	160	140	540	460	790	730
Iron, Total	mg/L	0.3	S	0.14	0.16	0.14	0.15	0.18	0.16	0.072	0.022	0.025	0.02	0.099	0.11
Langelier Index - 25 degree	None	-		0.88	0.81	0.83	0.88	1.1	1	0.78	0.68	1	0.8	1.2	0.95
Magnesium, Total	None	-		13	14	9	9.5	24	23	17	15	48	40	64	57
Manganese, Total	µg/L	50	S	12	14	45	60	53	58	32	28	170	150	490	520
Nitrate as Nitrogen	mg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/L	45	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, as Nitrogen	mg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/L	-		20	20	14	14	14	15	9.4	8.7	7.9	7.2	6.6	7.2
Sodium, Total	mg/L	-		300	320	300	320	170	180	110	100	110	91	230	240
Sulfate	mg/L	500	S	ND	ND	ND	ND	ND	ND	ND	ND	70	33	280	250
Surfactants	mg/L	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.05	0.078
Total Dissolved Solid (TDS)	mg/L	1000	S	870	870	830	810	640	620	430	410	970	790	1400	1300
Total Nitrogen, Nitrate+Nitrite	mg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/L	-		14	10	16	10	7.1	6.1	2.8	2.2	1.1	0.74	1.9	1.7
General Physical Properties															
Apparent Color	ACU	15	S	200	250	350	200	100	60	15	20	5	5	5	3
Lab pH	Units	-		8.2	8.1	8.3	8.3	8.2	8.1	8.1	8	8	7.8	7.8	7.6
Odor	TON	3	S	1	1	1	ND	ND	ND	ND	1	2	1	1	2
Specific Conductance	µmho/cm	1600	S	1400	1400	1300	1300	1100	1000	720	720	1500	1400	2400	2300
Turbidity	NTU	5	S	0.63	0.7	0.94	0.92	0.18	0.21	0.11	0.79	0.2	0.15	0.96	0.52
Metals															
Aluminum, Total	µg/L	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	µg/L	10	P	4.1	ND	3.4	ND	3.8	ND	ND	ND	2.1	1.2	4.4	ND
Barium, Total	µg/L	1000	P	30	31	24	27	36	35	28	28	140	120	45	49
Beryllium, Total	µg/L	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	µg/L	50	P	ND	ND	1.8	1.5	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	µg/L	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	µg/L	-		ND	0.029	ND	0.041	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total	µg/L	15	A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total	µg/L	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total	µg/L	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	µg/L	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds															
1,1-Dichloroethane	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	µg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	µg/L	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.83	0.55
Di-Isopropyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/L	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	µg/L	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	µg/L	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.7	0.94
Perchlorate	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Trihalomethanes	µg/L	80	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.1	1.2
trans-1,2-Dichloroethylene	µg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	13	9.6
Vinyl chloride (VC)	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (Total)	µg/L	1750	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 (N): Notification Level (A): Action Level (ND): Not Detected

TABLE 3.2
WEST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2012-13

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Constituents	Units	MCL	MCL Type	Inglewood #1							
				Zone 1		Zone 3		Zone 4		Zone 5	
				5/2/13	9/16/13	5/2/13	9/16/13	5/2/13	9/16/13	5/2/13	9/16/13
General Minerals											
Alkalinity	mg/L	-		1300	1300	310	320	230	230	300	290
Anion Sum	meq/L	-		70	68	22	21	14	14	22	21
Bicarbonate as HCO3	mg/L	-		1600	1600	380	390	280	280	370	360
Boron	mg/L	1	N	9.1	9.1	0.42	0.44	0.19	0.2	0.23	0.24
Calcium, Total	mg/L	-		69	73	160	150	110	110	190	190
Carbon Dioxide	mg/L	-		ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/L	-		11	8.2	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l	-		70	70	22	22	14	14	22	22
Chloride	mg/L	500	S	1500	1500	440	420	260	260	390	380
Fluoride	mg/L	2	P	0.28	0.29	0.42	0.43	0.37	0.39	0.21	0.22
Hardness (Total, as CaCO3)	mg/L	-		340	350	650	640	470	460	760	740
Iron, Total	mg/L	0.3	S	2.4	2.5	0.53	0.5	0.38	0.37	ND	ND
Langelier Index - 25 degree	None	-		1.6	1.5	1.1	0.92	1	0.79	0.92	0.71
Magnesium, Total	None	-		40	41	64	61	48	46	70	68
Manganese, Total	µg/L	50	S	24	29	390	390	200	210	2.9	3.2
Nitrate as Nitrogen	mg/L	10	P	ND	ND	ND	ND	ND	ND	10	10
Nitrate (as NO3)	mg/L	45	P	ND	ND	ND	ND	ND	ND	45	44
Nitrite, as Nitrogen	mg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/L	-		32	35	8.6	9.5	10	11	8.9	10
Sodium, Total	mg/L	-		1400	1400	210	210	110	110	160	150
Sulfate	mg/L	500	S	1.1	0.7	150	150	97	95	200	200
Surfactants	mg/L	0.5	S	0.065	0.092	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/L	1000	S	4100	4100	1400	1300	800	840	1500	1400
Total Nitrogen, Nitrate+Nitrite	mg/L	10	P	ND	ND	ND	ND	ND	ND	10	10
Total Organic Carbon	mg/L	-		80	75	1.3	1.1	0.72	0.72	0.87	0.95
General Physical Properties											
Apparent Color	ACU	15	S	400	300	15	15	15	15	ND	ND
Lab pH	Units	-		8	7.9	7.8	7.6	8	7.8	7.5	7.3
Odor	TON	3	S	4	2	ND	ND	ND	ND	ND	ND
Specific Conductance	µmho/cm	1600	S	6700	6800	2200	2200	1400	1400	2100	2100
Turbidity	NTU	5	S	2.4	2.6	3.5	4	2.3	2.9	0.33	1.3
Metals											
Aluminum, Total	µg/L	1000	P	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	µg/L	10	P	2.4	2.2	12	ND	6.2	ND	ND	ND
Barium, Total	µg/L	1000	P	240	240	49	51	100	110	220	220
Beryllium, Total	µg/L	4	P	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	µg/L	50	P	1.6	ND	ND	ND	ND	ND	ND	ND
Copper, Total	µg/L	1300	P	ND	ND	3.9	8.7	2.8	3.1	ND	ND
Hexavalent Chromium (Cr VI)	µg/L	-		ND	ND	ND	ND	ND	ND	0.12	0.11
Lead, Total	µg/L	15	A	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total	µg/L	50	P	37	32	13	5.3	ND	ND	12	9
Silver, Total	µg/L	100	S	ND	ND	0.67	ND	ND	ND	ND	ND
Thallium, Total	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	µg/L	5000	S	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds											
1,1-Dichloroethane	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	µg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	µg/L	70	P	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND
Di-Isopropyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/L	300	P	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	µg/L	1200	P	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	µg/L	13	P	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	µg/L	6	P	ND	ND	ND	ND	ND	ND	2.5	2.2
Styrene	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND
Total Trihalomethanes	µg/L	80	P	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	µg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	µg/L	5	P	0.82	0.75	ND	ND	ND	ND	0.68	0.71
Vinyl chloride (VC)	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (Total)	µg/L	1750	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 (N): Notification Level (A): Action Level (ND): Not Detected

TABLE 3.2
WEST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2012-13

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Constituents	Units	MCL	MCL Type	Inglewood #3													
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6		Zone 7	
				5/17/13	9/26/13	5/17/13	9/26/13	5/17/13	9/26/13	5/17/13	9/26/13	5/17/13	9/26/13	5/17/13	9/26/13	5/17/13	9/26/13
General Minerals																	
Alkalinity	mg/L	-		640	650	1100	1000	550	520	760	800	340	410	200	180	240	220
Anion Sum	meq/L	-		41	44	23	22	12	11	16	17	9.6	11	7.9	7.6	16	16
Bicarbonate as HCO3	mg/L	-		780	780	1300	1200	670	630	920	970	420	500	240	220	290	270
Boron	mg/L	1	N	3.5	3.9	4.9	5.1	1.1	1.1	2	2.2	0.33	0.5	0.1	0.11	0.1	0.11
Calcium, Total	mg/L	-		24	23	11	12	5.8	5.8	14	17	66	59	62	64	140	150
Carbon Dioxide	mg/L	-		ND	3.2	ND	3.9	ND	ND	ND	ND	16	2.6	5.1	ND	ND	ND
Carbonate as CO3	mg/L	-		8.8	20	15	39	8	10	8.7	7.9	ND	10	ND	4.5	ND	4.4
Cation Sum	meq/l	-		40	46	23	27	12	12	17	19	10	11	7.9	7.8	16	16
Chloride	mg/L	500	S	990	1100	54	48	16	14	28	25	97	96	130	130	370	380
Fluoride	mg/L	2	P	0.5	0.5	0.51	0.51	0.26	0.26	0.25	0.23	0.19	0.23	0.32	0.33	0.39	0.39
Hardness (Total, as CaCO3)	mg/L	-		110	110	52	58	27	28	72	92	260	220	240	250	550	560
Iron, Total	mg/L	0.3	S	0.18	0.2	0.55	0.64	0.15	0.17	0.36	0.43	0.03	0.037	ND	ND	0.14	0.11
Langelier Index - 25 degree	None	-		1.1	1.4	0.96	1.4	0.41	0.56	0.83	0.88	0.64	1.5	0.62	1.2	1.2	1.6
Magnesium, Total	None	-		12	12	6.2	6.8	3.1	3.2	8.9	12	22	19	22	21	46	46
Manganese, Total	mg/L	50	S	70	97	26	45	24	40	48	76	39	40	90	100	280	300
Nitrate as Nitrogen	mg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/L	45	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, as Nitrogen	mg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/L	-		17	20	14	16	7.2	8	16	20	8.5	9.9	6.9	7.4	6.8	8.3
Sodium, Total	mg/L	-		860	1000	510	580	260	270	360	390	110	140	65	61	110	110
Sulfate	mg/L	500	S	16	4.7	4	2	9.5	3.7	7.4	ND	ND	ND	11	13	36	38
Surfactants	mg/L	0.5	S	0.073	0.057	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.34	0.61
Total Dissolved Solid (TDS)	mg/L	1000	S	2400	2500	1500	1500	710	690	1000	970	550	610	450	450	980	1100
Total Nitrogen, Nitrate+Nitrite	mg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/L	-		23	24	110	100	13	12	25	23	2.4	3	1.1	0.78	4.7	3.9
General Physical Properties																	
Apparent Color	ACU	15	S	230	250	2000	600	500	400	880	900	15	25	10	ND	10	3
Lab pH	Units	-		8.2	8.6	8.3	8.7	8.3	8.4	8.2	8.1	7.6	8.5	7.9	8.5	8	8.4
Odor	TON	3	S	4	2	8	2	3	2	2	2	3	1	1	ND	8	2
Specific Conductance	µmho/cm	1600	S	4200	4500	2100	2100	1100	1100	1500	1500	980	1000	820	820	1700	1700
Turbidity	NTU	5	S	0.44	0.48	0.67	0.7	0.8	0.74	0.79	1.2	0.45	2.1	0.11	0.2	0.73	0.55
Metals																	
Aluminum, Total	µg/L	1000	P	ND	ND	ND	ND	49	33	45	36	ND	ND	ND	ND	ND	ND
Antimony, Total	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	µg/L	10	P	2	ND	1.3	ND	2.5	ND	3.4	ND	ND	ND	1.1	ND	1.4	1.9
Barium, Total	µg/L	1000	P	57	86	25	36	14	22	40	78	52	54	49	56	190	180
Beryllium, Total	µg/L	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	µg/L	50	P	ND	ND	6.4	8	2.2	ND	3.2	5.4	ND	ND	ND	ND	ND	ND
Copper, Total	µg/L	1300	P	ND	ND	3.3	ND	4	3	2.8	ND	ND	ND	ND	ND	ND	3.8
Hexavalent Chromium (Cr VI)	µg/L	-		ND	ND	0.065	0.048	0.061	0.039	0.082	0.045	ND	ND	ND	ND	ND	ND
Lead, Total	µg/L	15	A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total	µg/L	50	P	20	13	5.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total	µg/L	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	µg/L	5000	S	ND	ND	ND	ND	ND	24	ND	21	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds																	
1,1-Dichloroethane	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.1	1.4
1,2-Dichloroethane	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	µg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	µg/L	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	µg/L	6	P	3	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	33	36
Di-Isopropyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/L	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	µg/L	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	µg/L	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Trihalomethanes	µg/L	80	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	µg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	11	11
Trichloroethylene (TCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride (VC)	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.47	0.62
Xylenes (Total)	µg/L	1750	P	ND	ND	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 (N): Notification Level (A): Action Level (ND): Not Detected

TABLE 3.2
WEST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2012-13

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Constituents	Units	MCL	MCL Type	Lomita #1									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				4/4/13	9/5/13	4/4/13	9/5/13	4/4/13	9/5/13	4/4/13	9/5/13	4/4/13	9/5/13
General Minerals													
Alkalinity	mg/L	-		280	280	270	270	320	330	290	290	280	270
Anion Sum	meq/L	-		28	28	24	25	18	16	15	13	27	27
Bicarbonate as HCO3	mg/L	-		340	340	330	330	400	410	350	350	340	330
Boron	mg/L	1	N	0.56	0.51	0.45	0.4	0.4	0.38	0.4	0.38	0.5	0.44
Calcium, Total	mg/L	-		230	220	200	200	130	100	120	93	230	210
Carbon Dioxide	mg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/L	-		ND	ND	ND	ND	2.9	ND	2.8	ND	ND	ND
Cation Sum	meq/l	-		28	27	25	24	19	16	16	14	27	26
Chloride	mg/L	500	S	790	780	630	660	370	300	330	270	750	750
Fluoride	mg/L	2	P	0.098	0.11	0.11	0.12	0.13	0.16	0.18	0.21	0.085	0.099
Hardness (Total, as CaCO3)	mg/L	-		820	800	730	710	470	390	420	340	830	770
Iron, Total	mg/L	0.3	S	0.16	0.19	0.31	0.26	0.048	0.026	0.051	ND	0.15	0.16
Langelier Index - 25 degree	None	-		1.3	1.2	1.3	1.1	1.3	0.99	1.3	0.95	1.3	1.2
Magnesium, Total	None	-		61	60	55	54	37	30	32	27	62	58
Manganese, Total	µg/L	50	S	420	430	270	330	170	150	160	130	360	370
Nitrate as Nitrogen	mg/L	10	P	ND	ND	ND	ND	0.26	ND	ND	ND	ND	0.16
Nitrate (as NO3)	mg/L	45	P	ND	ND	ND	ND	1.2	ND	ND	ND	ND	0.69
Nitrite, as Nitrogen	mg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/L	-		16	16	15	15	12	11	11	9.9	16	15
Sodium, Total	mg/L	-		260	240	240	220	210	180	180	160	240	230
Sulfate	mg/L	500	S	21	22	29	30	34	22	9.4	6.8	29	33
Surfactants	mg/L	0.5	S	0.062	0.072	0.082	ND	ND	0.074	ND	ND	ND	0.068
Total Dissolved Solid (TDS)	mg/L	1000	S	2100	2300	1700	2000	1100	940	960	790	1900	2100
Total Nitrogen, Nitrate+Nitrite	mg/L	10	P	ND	ND	ND	ND	0.26	ND	ND	ND	ND	0.16
Total Organic Carbon	mg/L	-		1.1	0.84	1	0.78	2.7	3.1	2.6	3	1.1	0.76
General Physical Properties													
Apparent Color	ACU	15	S	10	10	10	15	15	30	15	30	5	10
Lab pH	Units	-		7.9	7.8	7.9	7.8	8	7.8	8.1	7.9	7.9	7.8
Odor	TON	3	S	3	4	3	2	3	4	2	2	1	2
Specific Conductance	µmho/cm	1600	S	3000	2900	2600	2600	1900	1600	1600	1400	2900	2800
Turbidity	NTU	5	S	3.5	8.2	2.1	2.5	2.8	7.2	1	1.7	0.94	0.91
Metals													
Aluminum, Total	µg/L	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	µg/L	10	P	11	ND	8.4	ND	6.2	ND	4.4	ND	9	ND
Barium, Total	µg/L	1000	P	140	120	120	110	78	61	72	53	140	120
Beryllium, Total	µg/L	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	µg/L	50	P	1.2	ND	ND	ND	ND	ND	ND	ND	1.1	ND
Copper, Total	µg/L	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total	µg/L	15	A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total	µg/L	50	P	21	29	12	13	7.2	6.9	6.9	6.7	15	15
Silver, Total	µg/L	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	µg/L	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds													
1,1-Dichloroethane	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	µg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	µg/L	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-Isopropyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/L	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	µg/L	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	µg/L	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Trihalomethanes	µg/L	80	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	µg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride (VC)	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (Total)	µg/L	1750	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 (N): Notification Level (A): Action Level (ND): Not Detected

TABLE 3.2
WEST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2012-13

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Constituents	Units	MCL	MCL Type	Long Beach #3									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				4/3/13	8/22/13	4/3/13	8/22/13	4/3/13	8/22/13	4/3/13	8/22/13	4/3/13	8/22/13
General Minerals													
Alkalinity	mg/L	-		370	340	130	120	140	140	110	110	130	130
Anion Sum	meq/L	-		7.9	7.4	3.6	3.6	3.9	3.8	30	28	33	34
Bicarbonate as HCO3	mg/L	-		440	420	160	150	180	170	140	140	160	160
Boron	mg/L	1	N	0.35	0.31	0.13	0.12	0.13	0.12	0.11	0.1	0.11	0.095
Calcium, Total	mg/L	-		11	10	17	16	21	20	330	310	400	380
Carbon Dioxide	mg/L	-		ND	ND	ND	ND	ND	ND	2.9	ND	3.1	ND
Carbonate as CO3	mg/L	-		9.3	5.3	2.6	ND	2.5	ND	ND	ND	ND	ND
Cation Sum	meq/l	-		8.1	7.5	4	3.8	4.4	4.2	30	28	34	31
Chloride	mg/L	500	S	18	18	20	20	34	34	920	880	1000	1000
Fluoride	mg/L	2	P	0.48	0.47	0.34	0.31	0.29	0.29	0.14	0.14	0.14	0.14
Hardness (Total, as CaCO3)	mg/L	-		41	40	55	53	68	65	1200	1100	1400	1300
Iron, Total	mg/L	0.3	S	0.037	0.04	ND	ND	0.029	0.023	0.22	0.22	0.31	0.3
Langelier Index - 25 degree	None	-		0.74	0.48	0.39	0.12	0.46	0.14	1.1	1.1	1.3	1.2
Magnesium, Total	None	-		3.4	3.3	2.9	2.8	3.6	3.5	88	84	93	88
Manganese, Total	µg/L	50	S	12	12	7.2	8.3	10	9.9	260	290	390	360
Nitrate as Nitrogen	mg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/L	45	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, as Nitrogen	mg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/L	-		3.7	3	2.2	2.2	2.6	2.6	14	13	11	10
Sodium, Total	mg/L	-		170	150	66	63	68	64	130	120	130	120
Sulfate	mg/L	500	S	ND	ND	24	23	ND	ND	67	67	72	73
Surfactants	mg/L	0.5	S	ND	ND	ND	ND	ND	ND	0.06	ND	0.082	0.064
Total Dissolved Solid (TDS)	mg/L	1000	S	450	450	240	220	240	220	2000	2000	2300	2400
Total Nitrogen, Nitrate+Nitrite	mg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/L	-		7.9	7.3	1.4	1.2	2.5	2.5	0.85	0.56	0.92	0.62
General Physical Properties													
Apparent Color	ACU	15	S	50	50	15	15	20	20	5	10	10	10
Lab pH	Units	-		8.5	8.3	8.4	8.2	8.3	8	7.9	7.9	7.9	7.9
Odor	TON	3	S	3	3	1	1	2	2	3	3	3	2
Specific Conductance	µmho/cm	1600	S	750	730	380	370	410	400	3200	3000	3600	3500
Turbidity	NTU	5	S	0.35	2.9	0.15	0.13	0.12	0.22	1.4	1.9	2.1	2.6
Metals													
Aluminum, Total	µg/L	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	µg/L	10	P	1.3	ND	ND	ND	ND	ND	13	ND	5.5	ND
Barium, Total	µg/L	1000	P	8.3	8.9	15	15	7.9	7.9	110	110	180	190
Beryllium, Total	µg/L	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	µg/L	50	P	ND	ND	ND	ND	ND	ND	1.3	1.1	1.2	ND
Copper, Total	µg/L	1300	P	ND	ND	ND	ND	ND	ND	ND	20	ND	19
Hexavalent Chromium (Cr VI)	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total	µg/L	15	A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	7.3	ND	7.2
Selenium, Total	µg/L	50	P	ND	ND	ND	ND	ND	ND	16	26	16	32
Silver, Total	µg/L	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	µg/L	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds													
1,1-Dichloroethane	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	µg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	µg/L	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-Isopropyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/L	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	µg/L	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	µg/L	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Trihalomethanes	µg/L	80	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	µg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride (VC)	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (Total)	µg/L	1750	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 (N): Notification Level (A): Action Level (ND): Not Detected

TABLE 3.2
WEST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2012-13

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Constituents	Units	MCL	MCL Type	Manhattan Beach #1								
				Zone 1	Zone 1	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 7
				10/18/12	8/27/13	8/28/13	8/28/13	8/28/13	8/28/13	8/28/13	8/28/13	8/28/13
General Minerals												
Alkalinity	mg/L	-		560	570	540	430	890	460	120	150	130
Anion Sum	meq/L	-		140	130	130	47	21	10	390	140	10
Bicarbonate as HCO3	mg/L	-		680	700	660	520	1100	560	150	190	160
Boron	mg/L	1	N	15	14	15	6.9	3.8	0.34	ND	ND	0.15
Calcium, Total	mg/L	-		44	50	49	31	16	23	1800	960	51
Carbon Dioxide	mg/L	-		15	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/L	-		3.2	3.6	3.7	6.3	13	5.8	ND	ND	ND
Cation Sum	meq/l	-		120	130	140	49	24	10	380	130	10
Chloride	mg/L	500	S	4400	4100	4100	1400	120	33	12000	4400	130
Fluoride	mg/L	2	P	0.78	0.79	0.75	0.54	0.32	0.19	0.09	0.14	0.26
Hardness (Total, as CaCO3)	mg/L	-		250	290	280	130	90	98	8600	3600	190
Iron, Total	mg/L	0.3	S	1.2	0.8	0.57	0.18	0.44	0.075	4.1	1.6	ND
Langelier Index - 25 degree	None	-		0.89	0.96	1	1	1.1	0.87	1.4	1.4	0.21
Magnesium, Total	None	-		34	39	38	13	12	9.6	1000	300	16
Manganese, Total	µg/L	50	S	100	90	74	53	48	69	1100	1100	68
Nitrate as Nitrogen	mg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	4.5
Nitrate (as NO3)	mg/L	45	P	ND	ND	ND	ND	ND	ND	ND	ND	20
Nitrite, as Nitrogen	mg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/L	-		24	29	30	21	29	10	100	39	5.6
Sodium, Total	mg/L	-		2700	2900	3000	1000	490	190	4700	1400	140
Sulfate	mg/L	500	S	ND	ND	ND	0.94	3	ND	1600	540	170
Surfactants	mg/L	0.5	S	0.068	0.12	0.058	0.084	0.056	ND	0.15	0.076	0.11
Total Dissolved Solid (TDS)	mg/L	1000	S	6900	7100	7300	2700	1300	640	24000	9600	680
Total Nitrogen, Nitrate+Nitrite	mg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	4.5
Total Organic Carbon	mg/L	-		4.5	4.5	4.4	15	43	5.2	1	0.38	1.4
General Physical Properties												
Apparent Color	ACU	15	S		50	100	150	200	25	30	20	10
Lab pH	Units	-		7.9	7.9	7.9	8.3	8.3	8.2	7.4	7.6	7.7
Odor	TON	3	S			17	17	17	2	2	1	2
Specific Conductance	µmho/cm	1600	S	13000	12000	12000	4900	2000	980	32000	12000	1100
Turbidity	NTU	5	S		13	0.42	2.7	1.1	3.5	43	23	0.48
Metals												
Aluminum, Total	µg/L	1000	P	100	ND	ND	ND	ND	ND	ND	ND	23
Antimony, Total	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	µg/L	10	P	20	ND	11	5	3	1	ND	26	3.7
Barium, Total	µg/L	1000	P	640	640	640	190	84	42	220	220	22
Beryllium, Total	µg/L	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	µg/L	50	P	ND	ND	ND	ND	1.5	1.1	ND	1.1	ND
Copper, Total	µg/L	1300	P	5.4	ND	ND	ND	ND	ND	220	24	ND
Hexavalent Chromium (Cr VI)	µg/L	-			ND	ND	ND	0.02	ND	ND	ND	ND
Lead, Total	µg/L	15	A	ND	ND	ND	µg/L	ND	ND	ND	ND	ND
Mercury	µg/L	2	P		ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	6.7	ND
Selenium, Total	µg/L	50	P	53	54	34	14	ND	ND	110	24	5.1
Silver, Total	µg/L	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	µg/L	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds												
1,1-Dichloroethane	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	µg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	µg/L	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-Isopropyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/L	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	µg/L	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	µg/L	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	µg/L	6	P		ND	ND	ND	ND	ND	ND	ND	2.8
Styrene	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Trihalomethanes	µg/L	80	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	µg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride (VC)	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (Total)	µg/L	1750	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 (N): Notification Level (A): Action Level (ND): Not Detected

TABLE 3.2
WEST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2012-13

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Constituents	Units	MCL	MCL Type	PM-3 Madrid							
				Zone 1		Zone 2		Zone 3		Zone 4	
				4/9/13	9/3/13	4/9/13	9/3/13	4/9/13	9/3/13	4/9/13	9/3/13
General Minerals											
Alkalinity	mg/L	-		290	290	190	180	190	180	200	200
Anion Sum	meq/L	-		6.5	6.6	7.5	8.8	10	9.8	15	15
Bicarbonate as HCO3	mg/L	-		350	360	230	220	230	220	240	240
Boron	mg/L	1	N	0.34	0.31	0.18	0.13	0.19	0.17	0.39	0.37
Calcium, Total	mg/L	-		12	12	61	77	80	84	110	120
Carbon Dioxide	mg/L	-		ND	ND	ND	ND	5.3	ND	7.8	ND
Carbonate as CO3	mg/L	-		5.3	2.8	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l	-		7.4	7.5	7.9	9.5	10	10	15	16
Chloride	mg/L	500	S	23	24	130	180	220	220	350	340
Fluoride	mg/L	2	P	0.3	0.32	0.32	0.32	0.34	0.34	0.3	0.32
Hardness (Total, as CaCO3)	mg/L	-		70	71	230	290	300	310	430	460
Iron, Total	mg/L	0.3	S	0.047	0.045	0.18	0.17	0.094	0.1	0.37	0.44
Langelier Index - 25 degree	None	-		0.54	0.27	0.62	0.49	0.68	0.48	0.71	0.62
Magnesium, Total	None	-		9.7	10	19	24	23	26	35	39
Manganese, Total	µg/L	50	S	23	24	51	58	48	50	330	330
Nitrate as Nitrogen	mg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/L	45	P	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, as Nitrogen	mg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/L	-		13	13	4.6	4.9	5.4	5.5	7.2	7.4
Sodium, Total	mg/L	-		130	130	74	81	90	93	150	160
Sulfate	mg/L	500	S	ND	ND	ND	ND	ND	0.59	79	84
Surfactants	mg/L	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/L	1000	S	370	370	420	590	600	670	930	1000
Total Nitrogen, Nitrate+Nitrite	mg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/L	-		3.2	3	0.66	0.68	0.81	0.8	1.2	1.2
General Physical Properties											
Apparent Color	ACU	15	S	30	40	5	5	ND	5	ND	15
Lab pH	Units	-		8.4	8.1	7.9	7.7	7.9	7.7	7.7	7.6
Odor	TON	3	S	2	1	2	ND	3	2	2	4
Specific Conductance	µmho/cm	1600	S	660	660	800	950	1100	1100	1600	1600
Turbidity	NTU	5	S	2	2.3	0.54	0.89	1.8	2	3.7	7.1
Metals											
Aluminum, Total	µg/L	1000	P	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	µg/L	10	P	ND	ND	ND	1.1	ND	1.3	4.6	7.3
Barium, Total	µg/L	1000	P	20	18	30	34	57	52	81	85
Beryllium, Total	µg/L	4	P	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	µg/L	50	P	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	µg/L	1300	P	ND	ND	ND	2.5	ND	ND	ND	4.7
Hexavalent Chromium (Cr VI)	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total	µg/L	15	A	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total	µg/L	50	P	ND	ND	ND	ND	ND	ND	ND	9.2
Silver, Total	µg/L	100	S	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	µg/L	5000	S	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds											
1,1-Dichloroethane	µg/L	5	P	ND	ND	ND	ND	ND	ND	0.99	0.73
1,1-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	1.5	1.4	19	12
1,2-Dichloroethane	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	µg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	µg/L	70	P	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	0.62	0.59	3.4	2.7
Di-Isopropyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/L	300	P	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	µg/L	1200	P	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	µg/L	13	P	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND
Total Trihalomethanes	µg/L	80	P	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	µg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	1.3	1.1
Vinyl chloride (VC)	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (Total)	µg/L	1750	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 (N): Notification Level (A): Action Level (ND): Not Detected

TABLE 3.2
WEST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2012-13

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Constituents	Units	MCL	MCL Type	PM-4 Mariner							
				Zone 1		Zone 2		Zone 3		Zone 4	
				4/28/13	9/8/13	4/28/13	9/8/13	4/28/13	9/8/13	4/28/13	9/9/13
General Minerals											
Alkalinity	mg/L	-		250	250	150	150	200	180	190	180
Anion Sum	meq/L	-		5.8	5.7	210	200	11	11	10	10
Bicarbonate as HCO3	mg/L	-		300	300	190	190	250	230	230	220
Boron	mg/L	1	N	0.16	0.15	0.23	0.2	0.26	0.21	0.24	0.22
Calcium, Total	mg/L	-		28	27	1400	1400	57	60	71	69
Carbon Dioxide	mg/L	-		ND	ND	8.8	ND	ND	ND	2.4	ND
Carbonate as CO3	mg/L	-		3.5	ND	ND	ND	2.5	ND	2.3	ND
Cation Sum	meq/l	-		6.1	5.9	210	200	11	11	10	10
Chloride	mg/L	500	S	28	28	6600	6400	120	120	120	120
Fluoride	mg/L	2	P	0.34	0.35	0.1	0.11	0.47	0.44	0.26	0.27
Hardness (Total, as CaCO3)	mg/L	-		120	120	5500	5400	210	220	260	250
Iron, Total	mg/L	0.3	S	0.065	0.063	0.23	0.24	0.028	0.026	0.15	0.15
Langelier Index - 25 degree	None	-		0.72	0.32	1.5	1.7	0.91	0.66	0.95	0.73
Magnesium, Total	None	-		12	12	460	460	16	17	20	20
Manganese, Total	µg/L	50	S	28	31	850	980	39	50	66	73
Nitrate as Nitrogen	mg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/L	45	P	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, as Nitrogen	mg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/L	-		7.1	7.4	63	66	6.7	7.3	6.2	6.4
Sodium, Total	mg/L	-		82	78	2200	2100	160	150	120	110
Sulfate	mg/L	500	S	ND	ND	820	810	180	180	150	150
Surfactants	mg/L	0.5	S	ND	ND	0.2	0.1	ND	ND	ND	0.052
Total Dissolved Solid (TDS)	mg/L	1000	S	350	330	14000	15000	720	670	660	620
Total Nitrogen, Nitrate+Nitrite	mg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/L	-		1.8	1.7	1.7	0.65	1.2	1.3	1.1	1.2
General Physical Properties											
Apparent Color	ACU	15	S	15	15	10	5	10	5	5	5
Lab pH	Units	-		8.2	7.9	7.5	7.7	8.2	8	8.2	8
Odor	TON	3	S	2	1	2	2	2	1	1	2
Specific Conductance	µmho/cm	1600	S	560	540	19000	18000	1100	1100	1000	1000
Turbidity	NTU	5	S	0.1	0.22	2	1.6	0.55	1.3	0.47	0.78
Metals											
Aluminum, Total	µg/L	1000	P	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	µg/L	10	P	ND	ND	23	8.9	ND	ND	ND	ND
Barium, Total	µg/L	1000	P	20	20	210	200	92	96	46	46
Beryllium, Total	µg/L	4	P	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	µg/L	50	P	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	µg/L	1300	P	ND	ND	ND	ND	ND	ND	ND	6.6
Hexavalent Chromium (Cr VI)	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total	µg/L	15	A	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	µg/L	100	P	ND	ND	13	11	ND	ND	ND	ND
Selenium, Total	µg/L	50	P	ND	ND	44	48	ND	ND	ND	ND
Silver, Total	µg/L	100	S	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	µg/L	5000	S	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds											
1,1-Dichloroethane	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	µg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	µg/L	70	P	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND
Di-Isopropyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/L	300	P	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	µg/L	1200	P	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	µg/L	13	P	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND
Total Trihalomethanes	µg/L	80	P	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	µg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride (VC)	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (Total)	µg/L	1750	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 (N): Notification Level (A): Action Level (ND): Not Detected

TABLE 3.2
WEST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2012-13

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Constituents	Units	MCL	MCL Type	PM-5 Columbia Park											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				4/23/13	9/10/13	4/23/13	9/10/13	4/23/13	9/10/13	4/23/13	9/10/13	4/23/13	9/10/13	4/23/13	9/10/13
General Minerals															
Alkalinity	mg/L	-		380	660	900	850	670	400	290	270	170	160	210	210
Anion Sum	meq/L	-		8.4	16	18	17	16	8.8	6.7	6.4	48	44	13	13
Bicarbonate as HCO3	mg/L	-		460	800	1100	1000	820	480	350	330	200	200	260	260
Boron	mg/L	1	N	0.34	2.6	1.8	1.9	2.4	0.36	0.17	0.17	0.21	0.2	0.19	0.18
Calcium, Total	mg/L	-		14	14	7.5	7.6	13	14	24	25	390	390	95	95
Carbon Dioxide	mg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/L	-		7.9	4.1	12	13	9.9	2.8	4.1	ND	ND	ND	2.3	ND
Cation Sum	meq/l	-		9.3	18	19	20	17	9.8	6.7	6.7	47	44	13	13
Chloride	mg/L	500	S	28	99	14	14	100	30	33	32	1300	1200	180	170
Fluoride	mg/L	2	P	0.28	0.61	0.32	0.31	0.6	0.27	0.3	0.32	0.15	0.15	0.32	0.32
Hardness (Total, as CaCO3)	mg/L	-		65	61	42	42	58	66	110	110	1400	1400	330	330
Iron, Total	mg/L	0.3	S	0.053	0.16	0.31	0.3	0.16	0.049	0.021	0.023	0.12	0.12	ND	ND
Langelier Index - 25 degree	None	-		0.78	0.53	0.7	0.74	0.85	0.35	0.74	0.37	1.2	1.1	1.1	0.84
Magnesium, Total	None	-		7.6	6.5	5.5	5.5	6.4	7.6	12	12	96	97	23	22
Manganese, Total	µg/L	50	S	32	60	32	36	47	39	19	21	330	380	120	120
Nitrate as Nitrogen	mg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/L	45	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, as Nitrogen	mg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/L	-		14	15	9.4	12	12	17	10	11	15	14	6.2	6.5
Sodium, Total	mg/L	-		180	380	420	440	350	180	97	97	440	380	140	140
Sulfate	mg/L	500	S	ND	ND	0.69	0.61	ND	ND	ND	ND	350	350	180	180
Surfactants	mg/L	0.5	S	ND	0.057	ND	ND	ND	ND	ND	ND	0.05	ND	ND	ND
Total Dissolved Solid (TDS)	mg/L	1000	S	530	1000	1100	1100	990	510	370	390	3100	3100	800	780
Total Nitrogen, Nitrate+Nitrite	mg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/L	-		40	40	37	30	6.7	5.8	2.7	2.5	0.94	0.67	1.2	1.1
General Physical Properties															
Apparent Color	ACU	15	S	50	750	800	400	350	250	15	20	10	5	ND	3
Lab pH	Units	-		8.4	7.9	8.2	8.3	8.3	8	8.3	7.9	7.8	7.7	8.1	7.9
Odor	TON	3	S	1	3	4	2	3	2	1	2	1	1	1	1
Specific Conductance	µmho/cm	1600	S	860	1600	1600	1600	1600	850	640	630	4600	4500	1300	1300
Turbidity	NTU	5	S	0.42	0.62	0.51	10	0.56	2.1	0.15	0.24	0.62	0.66	0.12	1.1
Metals															
Aluminum, Total	µg/L	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	µg/L	10	P	3.4	ND	5.1	3.2	3.1	1.1	ND	ND	4.2	ND	ND	ND
Barium, Total	µg/L	1000	P	25	95	24	23	91	26	19	18	160	140	150	150
Beryllium, Total	µg/L	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	µg/L	50	P	ND	1.2	2.9	2.8	1.1	ND	ND	ND	ND	ND	ND	ND
Copper, Total	µg/L	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	µg/L	-		ND	0.034	ND	0.063	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total	µg/L	15	A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total	µg/L	50	P	ND	ND	ND	ND	ND	ND	ND	ND	6.9	8.8	ND	ND
Silver, Total	µg/L	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	µg/L	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds															
1,1-Dichloroethane	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	µg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	µg/L	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-Isopropyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/L	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	µg/L	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	µg/L	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Trihalomethanes	µg/L	80	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	µg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride (VC)	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (Total)	µg/L	1750	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 (N): Notification Level (A): Action Level (ND): Not Detected

TABLE 3.2
WEST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2012-13

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Constituents	Units	MCL	MCL Type	PM-6 Madrona Marsh											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				4/16/13	9/30/13	4/16/13	9/30/13	4/16/13	9/30/13	4/16/13	9/30/13	4/16/13	9/30/13	4/16/13	9/30/13
General Minerals															
Alkalinity	mg/L	-		440	420	130	130	160	160	240	230	160	150	190	180
Anion Sum	meq/L	-		38	43	80	77	200	180	6.2	6.1	55	53	13	12
Bicarbonate as HCO3	mg/L	-		540	510	160	160	200	200	290	280	190	180	230	210
Boron	mg/L	1	N	0.75	0.79	0.55	0.6	ND	ND	0.24	0.24	0.25	0.3	0.17	0.17
Calcium, Total	mg/L	-		150	190	190	190	1100	1100	18	18	370	350	100	95
Carbon Dioxide	mg/L	-		ND	6.6	ND	2.6	ND	2.1	ND	2.3	ND	4.7	ND	3.4
Carbonate as CO3	mg/L	-		3.8	4.2	ND	ND	ND	2	3.3	3.6	ND	ND	ND	ND
Cation Sum	meq/l	-		39	46	76	74	190	190	6.6	6.4	55	53	14	13
Chloride	mg/L	500	S	1000	1200	2700	2600	6900	6400	52	53	1500	1400	230	230
Fluoride	mg/L	2	P	0.42	0.45	0.057	0.088	0.076	0.1	0.49	0.54	0.11	0.15	0.21	0.24
Hardness (Total, as CaCO3)	mg/L	-		890	1100	880	870	6000	6000	93	90	1400	1300	380	350
Iron, Total	mg/L	0.3	S	0.081	0.075	ND	ND	ND	ND	0.081	0.083	1.1	0.99	0.34	0.28
Langelier Index - 25 degree	None	-		1.5	1.7	0.94	1.1	2	2.1	0.53	0.59	1	1.1	0.89	0.9
Magnesium, Total	None	-		120	150	97	97	800	780	11	11	120	110	30	27
Manganese, Total	mg/L	50	S	64	82	180	210	210	270	77	79	700	790	150	140
Nitrate as Nitrogen	mg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/L	45	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, as Nitrogen	mg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/L	-		21	27	43	43	90	92	5.6	5.7	20	21	6.7	6.8
Sodium, Total	mg/L	-		480	540	1300	1300	1600	1500	100	100	610	600	140	130
Sulfate	mg/L	500	S	7.7	7.8	ND	ND	62	6.2	ND	ND	420	410	120	120
Surfactants	mg/L	0.5	S	ND	0.057	ND	0.064	0.075	0.098	ND	ND	ND	0.077	ND	ND
Total Dissolved Solid (TDS)	mg/L	1000	S	2300	2700	4700	4700	10000	12000	380	350	3300	3200	820	780
Total Nitrogen, Nitrate+Nitrite	mg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/L	-		7.6	7.7	1.2	0.96	2.2	0.82	2.3	2.2	1.3	0.98	1.6	1.3
General Physical Properties															
Apparent Color	ACU	15	S	250	300	10	5	20	40	25	15	20	15	10	10
Lab pH	Units	-		8	8.1	7.9	8	8.1	8.2	8.2	8.3	7.6	7.8	8	8
Odor	TON	3	S	3	8	2	2	200	200	1	2	1	2	1	2
Specific Conductance	µmho/cm	1600	S	3900	4500	7900	7900	18000	18000	620	620	5400	5200	1400	1300
Turbidity	NTU	5	S	20	24	0.62	0.81	26	24	0.34	0.45	11	7.8	1.3	1.1
Metals															
Aluminum, Total	µg/L	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	µg/L	10	P	3.7	ND	5.6	ND	11	ND	ND	ND	3.3	ND	2.4	2.5
Barium, Total	µg/L	1000	P	430	800	520	520	2500	2600	24	24	170	170	27	24
Beryllium, Total	µg/L	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	µg/L	50	P	1.8	ND	ND	ND	1.7	ND	ND	ND	ND	ND	ND	ND
Copper, Total	µg/L	1300	P	2.1	ND	ND	ND	2.5	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	µg/L	-		ND	0.032	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total	µg/L	15	A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	µg/L	100	P	ND	ND	ND	ND	12	ND	ND	ND	ND	ND	ND	ND
Selenium, Total	µg/L	50	P	6.4	7	14	ND	19	73	ND	ND	7	ND	ND	ND
Silver, Total	µg/L	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	µg/L	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds															
1,1-Dichloroethane	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	µg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	µg/L	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-Isopropyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/L	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	µg/L	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	µg/L	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Trihalomethanes	µg/L	80	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	µg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride (VC)	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (Total)	µg/L	1750	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 (N): Notification Level (A): Action Level (ND): Not Detected

TABLE 3.2
WEST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2012-13

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Constituents	Units	MCL	MCL Type	Westchester #1									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				4/24/13	9/23/13	4/24/13	9/23/13	4/24/13	9/23/13	4/24/13	9/23/13	4/24/13	9/23/13
General Minerals													
Alkalinity	mg/L	-		390	430	530	530	450	440	340	340	290	290
Anion Sum	meq/L	-		11	12	12	12	11	11	10	10	9.4	9.4
Bicarbonate as HCO3	mg/L	-		480	520	640	640	540	540	420	420	360	350
Boron	mg/L	1	N	0.43	0.48	0.77	0.79	0.43	0.44	0.22	0.22	0.21	0.22
Calcium, Total	mg/L	-		70	71	30	31	46	46	70	70	64	66
Carbon Dioxide	mg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/L	-		2.5	2.7	6.8	6.6	4.9	3.5	3.3	2.2	3	ND
Cation Sum	meq/l	-		12	12	13	13	11	11	11	11	9.6	9.8
Chloride	mg/L	500	S	73	73	69	67	63	60	64	62	66	68
Fluoride	mg/L	2	P	0.25	0.28	0.25	0.27	0.24	0.27	0.25	0.27	0.31	0.33
Hardness (Total, as CaCO3)	mg/L	-		300	300	150	150	200	200	300	300	270	280
Iron, Total	mg/L	0.3	S	0.16	0.16	0.12	0.12	0.21	0.2	0.13	0.14	0.3	0.3
Langelier Index - 25 degree	None	-		0.98	1	1	1	1.1	0.94	1.1	0.91	1	0.76
Magnesium, Total	None	-		30	30	18	18	22	22	30	30	26	27
Manganese, Total	µg/L	50	S	100	130	43	50	120	140	110	120	140	140
Nitrate as Nitrogen	mg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/L	45	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, as Nitrogen	mg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/L	-		9.2	10	15	16	12	12	9.3	9.2	7.4	7.4
Sodium, Total	mg/L	-		130	140	220	220	150	150	100	100	93	95
Sulfate	mg/L	500	S	62	58	ND	ND	2.9	2.6	76	74	80	82
Surfactants	mg/L	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/L	1000	S	680	700	730	720	600	620	590	600	550	550
Total Nitrogen, Nitrate+Nitrite	mg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/L	-		7.6	7.8	8	7.6	3.8	3.6	1.8	1.6	1.4	1.3
General Physical Properties													
Apparent Color	ACU	15	S	40	100	50	83	30	25	10	10	10	15
Lab pH	Units	-		7.9	7.9	8.2	8.2	8.1	8	8.1	7.9	8.1	7.8
Odor	TON	3	S	1	2	1	1	1	ND	ND	ND	2	1
Specific Conductance	µmho/cm	1600	S	1100	1100	1200	1200	1000	1000	980	980	910	910
Turbidity	NTU	5	S	0.85	1.2	1.3	1.8	0.34	0.33	0.32	0.34	0.85	1.1
Metals													
Aluminum, Total	µg/L	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	µg/L	10	P	4.5	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium, Total	µg/L	1000	P	88	90	120	120	71	75	75	80	61	61
Beryllium, Total	µg/L	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	µg/L	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	µg/L	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total	µg/L	15	A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total	µg/L	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total	µg/L	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	µg/L	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	µg/L	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds													
1,1-Dichloroethane	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	µg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	µg/L	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-Isopropyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/L	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	µg/L	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	µg/L	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	µg/L	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	µg/L	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	µg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	µg/L	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Trihalomethanes	µg/L	80	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	µg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	µg/L	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride (VC)	µg/L	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (Total)	µg/L	1750	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 (N): Notification Level (A): Action Level (ND): Not Detected

TABLE 3.2
WEST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2012-13

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Constituents	Units	MCL	MCL Type	Wilmington #1									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				2/13/13	8/7/13	2/13/13	8/7/13	2/13/13	8/7/13	2/13/13	8/7/13	2/13/13	8/7/13
General Minerals													
Alkalinity	mg/L	-		140	140	140	150	150	150	150	150	180	150
Anion Sum	meq/L	-		10	10	28	28	26	24	17	17	16	15
Bicarbonate as HCO3	mg/L	-		170	180	180	180	180	180	180	180	220	180
Boron	mg/L	1	N	0.23	0.22	0.19	0.18	0.23	0.22	0.22	0.21	0.21	0.18
Calcium, Total	mg/L	-		58	59	200	200	150	170	84	91	120	120
Carbon Dioxide	mg/L	-			3.4		7.2		6.7		6.5		8.8
Carbonate as CO3	mg/L	-		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l	-		10	10	27	28	24	25	16	18	16	15
Chloride	mg/L	500	S	270	270	790	780	760	710	350	360	310	290
Fluoride	mg/L	2	P	0.13	0.12	0.054	0.057	0.071	0.074	0.11	0.1	0.12	0.11
Hardness (Total, as CaCO3)	mg/L	-		230	230	730	720	540	600	340	370	460	440
Iron, Total	mg/L	0.3	S	ND	ND	0.052	0.048	ND	ND	ND	ND	0.34	0.065
Langelier Index - 25 degree	None	-		0.65	0.5	0.88	0.75	0.53	0.71	0.71	0.43	0.87	0.43
Magnesium, Total	None	-		20	19	54	51	40	45	32	34	40	37
Manganese, Total	µg/L	50	S	20	23	36	26	6.8	7.5	12	15	91	69
Nitrate as Nitrogen	mg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/L	45	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, as Nitrogen	mg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/L	-		7.8	8	8.9	9	8.1	8.1	6.3	6.9	7.2	6.9
Sodium, Total	mg/L	-		130	130	280	310	310	300	220	230	160	150
Sulfate	mg/L	500	S	ND	ND	130	120	76	66	200	200	170	170
Surfactants	mg/L	0.5	S	0.4	0.36	0.43	0.39	0.39	0.36	0.095	0.17	0.45	0.44
Total Dissolved Solid (TDS)	mg/L	1000	S	650	690	2000	2200	1800	1900	1000	1100	960	920
Total Nitrogen, Nitrate+Nitrite	mg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/L	-		3.7	4	2.5	1.7	2.9	1.9	2.4	2	5.5	3.3
General Physical Properties													
Apparent Color	ACU	15	S	5	3	10	3	10	5	10	5	15	5
Lab pH	Units	-		8.1	8	7.8	7.7	7.5	7.6	8	7.9	7.9	7.8
Odor	TON	3	S	200	200	100	3	200	200	40	40	200	200
Specific Conductance	µmho/cm	1600	S	1200	1200	2900	2900	2800	2700	1800	1800	1600	1500
Turbidity	NTU	5	S	0.13	0.45	0.25	0.35	0.079	0.11	0.14	0.2	6.7	5
Metals													
Aluminum, Total	µg/L	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	µg/L	6	P		ND		ND		ND		ND		ND
Arsenic, Total	µg/L	10	P		ND		ND		5		ND		ND
Barium, Total	µg/L	1000	P		11		15		19		35		130
Beryllium, Total	µg/L	4	P		ND		ND		ND		ND		ND
Cadmium, Total	µg/L	5	P		ND		ND		ND		ND		ND
Chromium, Total	µg/L	50	P		ND		ND		ND		ND		ND
Copper, Total	µg/L	1300	P		3.5	ND	7.1	ND	ND	ND	4.5	ND	9.2
Hexavalent Chromium (Cr VI)	µg/L	-			ND		ND		ND		ND		ND
Lead, Total	µg/L	15	A		ND		ND		ND		ND		ND
Mercury	µg/L	2	P		ND		ND		ND		ND		ND
Nickel, Total	µg/L	100	P		ND		ND		ND		ND		ND
Selenium, Total	µg/L	50	P		ND		7.2		ND		ND		ND
Silver, Total	µg/L	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	µg/L	2	P		ND		ND		ND		ND		ND
Zinc, Total	µg/L	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds													
1,1-Dichloroethane	µg/L	5	P		ND		ND		ND		ND		ND
1,1-Dichloroethylene	µg/L	6	P		ND		ND		ND		ND		ND
1,2-Dichloroethane	µg/L	0.5	P		ND		ND		ND		ND		ND
Benzene	µg/L	1	P		ND		ND		ND		ND		ND
Carbon Tetrachloride	µg/L	0.5	P		ND		ND		ND		ND		ND
Chlorobenzene	µg/L	70	P		ND		ND		ND		ND		ND
Chloromethane	µg/L	-			ND		ND		ND		ND		ND
cis-1,2-Dichloroethylene	µg/L	6	P		ND		ND		ND		ND		ND
Di-Isopropyl Ether	µg/L	-			7.2		19		16		ND		3.7
Ethylbenzene	µg/L	300	P		ND		ND		ND		ND		ND
Ethyl Tert Butyl Ether	µg/L	-			ND		ND		ND		ND		ND
Freon 11	µg/L	150	P		ND		ND		ND		ND		ND
Freon 113	µg/L	1200	P		ND		ND		ND		ND		ND
Methylene Chloride	µg/L	5	P		ND		ND		ND		ND		ND
MTBE	µg/L	13	P	ND	ND	ND	ND	ND	ND	ND	ND	18	27
Perchlorate	µg/L	6	P		ND		ND		ND		ND		ND
Styrene	µg/L	100	P		ND		ND		ND		ND		ND
Tert Amyl Methyl Ether	µg/L	-			ND		ND		ND		ND		ND
Tetrachloroethylene (PCE)	µg/L	5	P		ND		ND		ND		ND		ND
Toluene	µg/L	150	P		ND		ND		ND		ND		ND
Total Trihalomethanes	µg/L	80	P		ND		ND		ND		ND		ND
trans-1,2-Dichloroethylene	µg/L	10	P		ND		ND		ND		ND		ND
Trichloroethylene (TCE)	µg/L	5	P		ND		ND		ND		ND		ND
Vinyl chloride (VC)	µg/L	0.5	P		ND		ND		ND		ND		ND
Xylenes (Total)	µg/L	1750	P		ND		ND		ND		ND		ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level (A): Action Level (ND): Not Detected

TABLE 3.2
WEST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2012-13

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Constituents	Units	MCL	MCL Type	Wilmington #2									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				2/12/13	8/6/13	2/12/13	8/6/13	2/12/13	8/6/13	2/12/13	8/6/13	2/12/13	8/6/13
General Minerals													
Alkalinity	mg/L	-		260	320	490	470	320	160	270	250	170	170
Anion Sum	meq/L	-		7.7	9	26	25	12	8.9	12	11	79	76
Bicarbonate as HCO3	mg/L	-		320	390	590	580	390	190	330	310	200	200
Boron	mg/L	1	N	0.62	0.55	1.8	1.7	0.18	0.15	0.6	0.56	0.53	ND
Calcium, Total	mg/L	-		3.3	3.4	28	30	38	40	27	26	270	250
Carbon Dioxide	mg/L	-			ND		16		2.3		4.7		23
Carbonate as CO3	mg/L	-		2.5	8.7	5.3	2.2	3.9	ND	3.1	2.1	ND	ND
Cation Sum	meq/l	-		9.2	9.3	26	26	9	9	12	12	79	77
Chloride	mg/L	500	S	83	89	580	560	200	200	240	220	2400	2300
Fluoride	mg/L	2	P	0.88	0.77	0.41	0.35	0.18	0.16	0.73	0.63	0.19	0.18
Hardness (Total, as CaCO3)	mg/L	-		18	19	160	160	160	160	120	110	1200	1100
Iron, Total	mg/L	0.3	S	0.064	0.06	0.064	ND	0.025	0.023	ND	ND	ND	ND
Langelier Index - 25 degree	None	-		-0.35	0.21	0.92	0.55	0.92	0.56	0.67	0.48	1.1	0.43
Magnesium, Total	None	-		2.5	2.5	21	22	15	15	12	11	130	120
Manganese, Total	µg/L	50	S	3.2	3.3	9.6	9.6	9	12	7.6	7.4	54	63
Nitrate as Nitrogen	mg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/L	45	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, as Nitrogen	mg/L	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/L	-		5.1	5	12	12	6.1	6.1	6	5.6	19	19
Sodium, Total	mg/L	-		200	200	520	530	130	130	220	220	1200	1200
Sulfate	mg/L	500	S	ND	ND	ND	ND	ND	ND	5.2	3.8	410	360
Surfactants	mg/L	0.5	S	ND	ND	ND	0.093	ND	0.053	ND	0.066	ND	0.11
Total Dissolved Solid (TDS)	mg/L	1000	S	520	570	1500	1500	490	530	730	720	4800	4600
Total Nitrogen, Nitrate+Nitrite	mg/L	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/L	-		12	11	22	19	5.4	2.5	11	11	1.5	1.3
General Physical Properties													
Apparent Color	ACU	15	S	300	250	180	200	25	15	180	60	20	15
Lab pH	Units	-		8.1	8.4	8.1	8.1	8.2	8	8.2	8	7.8	7.7
Odor	TON	3	S	2	2	8	2	1	3	200	67	4	3
Specific Conductance	µmho/cm	1600	S	1300	920	2700	2600	960	990	1300	1200	8000	7800
Turbidity	NTU	5	S	0.29	0.33	0.3	5.2	0.088	0.13	0.54	0.61	0.22	0.21
Metals													
Aluminum, Total	µg/L	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	µg/L	6	P		ND		ND		ND		ND		ND
Arsenic, Total	µg/L	10	P		2.5		4.2		ND		2.6		ND
Barium, Total	µg/L	1000	P		3.7		43		16		19		67
Beryllium, Total	µg/L	4	P		ND		ND		ND		ND		ND
Cadmium, Total	µg/L	5	P		ND		ND		ND		ND		ND
Chromium, Total	µg/L	50	P		ND		ND		ND		ND		ND
Copper, Total	µg/L	1300	P		ND		ND		ND		ND		18
Hexavalent Chromium (Cr VI)	µg/L	-			ND		ND		ND		0.039		ND
Lead, Total	µg/L	15	A		ND		ND		ND		ND		ND
Mercury	µg/L	2	P		ND		ND		ND		ND		ND
Nickel, Total	µg/L	100	P		ND		ND		ND		ND		ND
Selenium, Total	µg/L	50	P		ND		ND		ND		ND		40
Silver, Total	µg/L	100	S		ND		ND		ND		ND		ND
Thallium, Total	µg/L	2	P		ND		ND		ND		ND		ND
Zinc, Total	µg/L	5000	S		ND		ND		ND		ND		ND
Volatile Organic Compounds													
1,1-Dichloroethane	µg/L	5	P		ND		ND		ND		ND		ND
1,1-Dichloroethylene	µg/L	6	P		ND		ND		ND		ND		ND
1,2-Dichloroethane	µg/L	0.5	P		ND		ND		ND		ND		ND
Benzene	µg/L	1	P		ND		ND		ND		ND		ND
Carbon Tetrachloride	µg/L	0.5	P		ND		ND		ND		ND		ND
Chlorobenzene	µg/L	70	P		ND		ND		ND		ND		ND
Chloromethane	µg/L	-			ND		ND		ND		ND		ND
cis-1,2-Dichloroethylene	µg/L	6	P		ND		ND		ND		ND		ND
Di-Isopropyl Ether	µg/L	-			ND		ND		ND		ND		ND
Ethylbenzene	µg/L	300	P		ND		ND		ND		ND		ND
Ethyl Tert Butyl Ether	µg/L	-			ND		ND		ND		ND		ND
Freon 11	µg/L	150	P		ND		ND		ND		ND		ND
Freon 113	µg/L	1200	P		ND		ND		ND		ND		ND
Methylene Chloride	µg/L	5	P		ND		ND		ND		ND		ND
MTBE	µg/L	13	P		ND		ND		ND		ND		ND
Perchlorate	µg/L	6	P		ND		ND		ND		ND		ND
Styrene	µg/L	100	P		ND		ND		ND		ND		ND
Tert Amyl Methyl Ether	µg/L	-			ND		ND		ND		ND		ND
Tetrachloroethylene (PCE)	µg/L	5	P		ND		ND		ND		ND		ND
Toluene	µg/L	150	P		ND		ND		ND		ND		ND
Total Trihalomethanes	µg/L	80	P		ND		ND		ND		ND		ND
trans-1,2-Dichloroethylene	µg/L	10	P		ND		ND		ND		ND		ND
Trichloroethylene (TCE)	µg/L	5	P		ND		ND		ND		ND		ND
Vinyl chloride (VC)	µg/L	0.5	P		ND		ND		ND		ND		ND
Xylenes (Total)	µg/L	1750	P		ND		ND		ND		ND		ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level (A): Action Level (ND): Not Detected

TABLE 3.3
QUALITY OF REPLENISHMENT WATER

Page 1 of 2

Constituent	Units	Regulatory Limit	IMPORTED WATER			RECYCLED WATER							LOCAL WATER
			Treated Blend of Colorado River & State Water Project ^A	Untreated Colorado River ^B	Untreated State Water Project ^C	WBMWD ELWRF ^D	LADWP TIWRP ^E	WRD LVL AWTF ^F	SDLAC Pomona WRP ^G	SDLAC San Jose Creek East WRP ^G	SDLAC San Jose Creek West WRP ^G	SDLAC Whittier Narrows WRP ^G	Stormwater ^H
			2012	2012	2012	2012	2012	2012	2012-2013	2012-2013	2012-2013	2012-2013	2012-2013
Arsenic	µg/L	MCL = 10	ND / ND	2.2	ND	ND	NS	ND	0.54	1.46	1.12	1.23	2.10
Chloride	mg/L	SMCL = 500	88 ¹ / 74 ¹	83 ¹	79 ¹	23 ^J	105 ^K	43.8 ^L	137	146	107	110	61
Hexavalent Chromium	µg/L	None	ND / ND	ND	ND	NA	NA	NA	0.04	0.06	0.1	0.09	ND
Iron	µg/L	SMCL = 300	ND / ND	ND	ND	ND	NS	ND	30.1	36	27	26.7	2,940
Manganese	µg/L	SMCL = 50	ND / ND	ND	23	1.2	NS	ND	5.22	10.2	4.68	2.72	NA
Nitrate (as N)	mg/L	MCL = 10	ND / ND	ND	0.5	0.62 ^J	0.59	1.02 ^L	6.88	5.15	7.18	7.16	2.70
Perchlorate	µg/L	MCL = 6	ND / ND	ND	ND	ND	NS	ND	NA	NA	NA	NA	NA
Tetrachloroethylene (PCE)	µg/L	MCL = 5	ND / ND	ND	ND	ND	NS	ND	ND	ND	ND	ND	NA
Trichloroethylene (TCE)	µg/L	MCL = 5	ND / ND	ND	ND	ND	NS	ND	ND	ND	ND	ND	NA
Total Dissolved Solids (TDS)	mg/L	SMCL = 1,000	512 ¹ / 281 ¹	571 ¹	278 ¹	122 ^J	300 ^K	225 ^L	571	615	521	558	358
Alkalinity	mg/L	None	105 ¹ / 83 ¹	127 ¹	81 ¹	60	NA	NA	163	170	165	165	87
Boron	µg/L	NL = 1,000	130 / 170	130	140	290 ^J	395 ^K	200 ^L	250	280	330	260	NA
Chromium, Total	µg/L	MCL = 50	ND / ND	ND	ND	1.53	NS	ND	1.3	0.91	1.1	1.6	6.32
Copper, Total	µg/L	SMCL = 1,000	ND / ND	ND	ND	2.1	NS	ND	4.8	5.27	6.04	4.46	27.5
1,4-Dioxane	ug/L	NL = 1	NA	NA	NA	ND	NS	ND	1.3	1.3	0.83	0.88	NA
Hardness	mg/L	None	236 ¹ / 110 ¹	274 ¹	108 ¹	41	NS	6.5	219	224	196	205	162
Lead, Total	µg/L	AL = 15	ND / ND	ND	ND	0.1	NS	ND	0.3	0.27	0.14	0.34	10.2
Methyl tertiary butyl ether (MTBE)	µg/L	MCL = 5	ND / ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	ND
Nitrite (as N)	mg/L	MCL = 1	ND / ND	ND	ND	0.15 ^J	ND	0.07 ^L	0.17	0.082	0.035	0.099	ND
n-Nitrosodimethylamine (NDMA)	ng/L	NL = 10	ND / 3	NA	NA	5.3	4.5	6.5	86	279	258	32	ND
pH	pH Units	None	8.1 / 8.3	8.3	8.2	7.8	8.0	7.9	7.3	7.0	7.1	7.4	7.3
Selenium	µg/L	MCL = 50	ND / ND	ND	ND	ND	NS	ND	ND	ND	ND	ND	0.81
Specific Conductance	µS/cm	SMCL = 1,600	860 ¹ / 515 ¹	929 ¹	512 ¹	72.4	NS	148	NA	NA	NA	NA	549
Sulfate	mg/L	SMCL = 500	183 ¹ / 46 ¹	220 ¹	40 ¹	15 ^J	23.2 ^K	3.4 ^L	77.7	108	80.6	100	70.4
Total Organic Carbon (TOC)	mg/L	None	2.4 / 1.9	2.87 ¹	3.12 ¹	0.23	0.11	ND	6.53	6.04	5.06	5.6	17.9
Turbidity	NTU	SMCL = 5	0.04 ¹ / 0.04 ¹	0.8 ¹	0.93 ¹	0.04	0.02	0.26	0.59	0.64	0.63	0.42	10.04

See footnotes on following page.

TABLE 3.3 QUALITY OF REPLENISHMENT WATER

Page 2 of 2

Notes:

- A = Used at the seawater intrusion barriers: generally, Diemer Plant effluent / Jensen Plant effluent
- B = Used at the Montebello Forebay spreading grounds (Lake Mathews)
- C = Used at the Montebello Forebay spreading grounds (Silverwood Lake)
- D = Effluent of Edward C. Little Water Recycling Facility (ELWRF) before blending with treated water from Colorado River/State Water Project; used at the West Coast Basin Seawater Intrusion Barrier
- E = Effluent of Terminal Island Water Reclamation Plant/Advanced Water Treatment Facilities (TIWRP) before blending with treated water from Colorado River/State Water Project; used at the Dominguez Gap Seawater Intrusion Barrier
- F = Effluent of Leo J. Vander Lans Advanced Water Treatment Facility (LVL AWTF) before blending with treated water from Colorado River/State Water Project; used at the Alamitos Gap Seawater Intrusion Barrier
- G = Effluent of water reclamation plants (WRPs); used at the Montebello Forebay spreading grounds
- H = Average of water samples collected from LACDPW San Gabriel River Monitoring Station S14 from October 2012 through Jan 2013 (6 storm events total)
- I = Average concentration for Water Year October 2012 through September 2013
- J = Average concentration in blended water (treatment plant effluent & treated water from Colorado River/State Water Project), which is delivered to the West Coast Basin Seawater Intrusion Barrier
- K = Average concentration in blended water (treatment plant effluent & treated water from Colorado River/State Water Project), which is delivered to the Dominguez Gap Seawater Intrusion Barrier
- L = Average concentration in blended water (treatment plant effluent & treated water from Colorado River/State Water Project); directly used at the Alamitos Gap Seawater Intrusion Barrier

NA = Not Available/Analyzed

ND = Not Detected

NS = Not sampled due to plant shutdown

mg/L = milligrams per liter

µg/L = micrograms per liter

µS/cm = microSiemen per centimeter

NTU = Nephelometric Turbidity Units

MCL = Maximum Contaminant Level

SMCL = Secondary Maximum Contaminant Level

AL = Action Level

NL = Notification Level

WRP = Water Reclamation Plant

LACDPW = Los Angeles County Department of Public Works

LADWP = Los Angeles Department of Water and Power

MWD = Metropolitan Water District of Southern California

SDLAC = County Sanitation Districts of Los Angeles County

WBMWD = West Basin Municipal Water District

WRD = Water Replenishment District of Southern California

Sources of Data:

- 2012 Water Quality Report to MWD Member Agencies (Metropolitan Water District of Southern California, March 2013)
- Table D, Monthly Analyses of the District Water Supplies (Metropolitan Water District of Southern California, October 2012 - September 2013)
- October 2012 - September 2013 Annual Monitoring Report, Montebello Forebay Groundwater Recharge (Sanitation Districts of Los Angeles County [SDLAC], December 2013)
- 2012 Annual Monitoring Report, West Coast Basin Barrier Project, Edward C. Little Water Recycling Facility (West Basin Municipal Water District [WBMWD], March 2013)
- 2012 - 2013 Annual Stormwater Monitoring Final Report, Los Angeles County (Los Angeles County Department of Public Works [LACDPW], December 2013)
- 2012 Annual Summary Report, Harbor Water Recycling/Dominguez Gap Barrier Project (Los Angeles Department of Water and Power [LADWP], February 2013)
- 2012 Annual Monitoring Report, Alamitos Barrier Recycled Water Project, Leo J. Vander Lans Water Treatment Facility (Water Replenishment District of Southern California [WRD], April 2013)

**TABLE 3.4
MAJOR MINERAL WATER QUALITY GROUPS**

NESTED MONITORING WELL LOCATIONS	GROUP A ZONES Generally Calcium Bicarbonate or Calcium Bicarbonate/Sulfate Dominant	GROUP B ZONES Generally Calcium-Sodium-Bicarbonate or Sodium-Bicarbonate Dominant	GROUP C ZONES Generally Sodium-Chloride Dominant	OTHER ZONES Generally Different Than Groups A, B, and C
CENTRAL BASIN				
Bell #1	2, 3, 4, 5, 6	1		
Bell Gardens #1	1, 2, 3, 4, 5, 6			
Cerritos #1	4, 5, 6	1, 2, 3		
Cerritos #2	1, 2, 3, 4, 5, 6			
Commerce #1	3, 4, 5, 6		1	2
Compton #1	2, 3, 4, 5	1		
Compton #2	2, 3, 4, 5	1		
Downey #1	1, 2, 3, 4, 5, 6			
Huntington Park #1	1, 2, 3, 4			
Inglewood #2		1, 2, 3		
Lakewood #1	2, 3, 4, 5, 6	1		
Lakewood #2		1, 2, 3, 4, 5, 6, 7, 8		
La Mirada #1	4, 5	1, 2, 3		
Long Beach #1	4	1, 2, 3, 5		6
Long Beach #2	4, 5, 6	1, 2, 3		
Long Beach #6	6	1, 2, 3, 4, 5		
Los Angeles #1	1, 2, 3, 4, 5			
Los Angeles #2	2, 3, 4			
Los Angeles #3	2, 3, 4, 5, 6	1		
Los Angeles #4	3, 4, 5, 6	1, 2		
Montebello #1	3, 4, 5	2		1
Norwalk #1	4, 5	1, 2, 3		
Norwalk #2	3, 4, 5, 6	1, 2		
Rio Hondo #1	1, 2, 3, 4, 5, 6			
Pico #1	2, 3, 4	1		
Pico #2	1, 2, 3, 4, 5, 6			
Seal Beach #1	6	1, 2, 3, 4, 5		7
South Gate #1	1, 2, 3, 4, 5			
Willowbrook #1	2, 3, 4	1		
Whittier #1	3, 4, 5		1, 2	
Whittier #2	1, 3, 4, 5, 6	2		
Whittier Narrows #1	3, 4, 5, 6, 7, 8, 9	2	1	
WEST COAST BASIN				
Carson #1	3, 4	1, 2		
Carson #2	1, 2, 3, 4, 5			
Carson #3	5, 6	1, 2, 3, 4		
Chandler #3	2	1		
Gardena #1	2, 3	1	4	
Gardena #2	2, 3, 4, 5	1		
Hawthorne #1	5, 6	1, 2, 3, 4		
Inglewood #1	3, 4, 5			1
Inglewood #3		1, 2, 3, 4, 5	6, 7	
Lomita #1	2, 3, 4, 5			1
Long Beach #3		1, 2, 3	4, 5	
Long Beach #8		1, 2, 3	6	4, 5
Manhattan Beach #1		3	5, 6	7
PM-3 Madrid	3, 4	1, 2		
PM-4 Mariner	4	1	2	3
PM-5 Columbia Park	6	1, 2, 3, 4	5	
PM-6 Madrona Marsh	6	2, 4	3, 5	1
Westchester #1		1, 2, 3, 4, 5		
Wilmington #1			1, 2, 3, 4, 5	
Wilmington #2		1	2, 3, 4, 5	

FIGURES

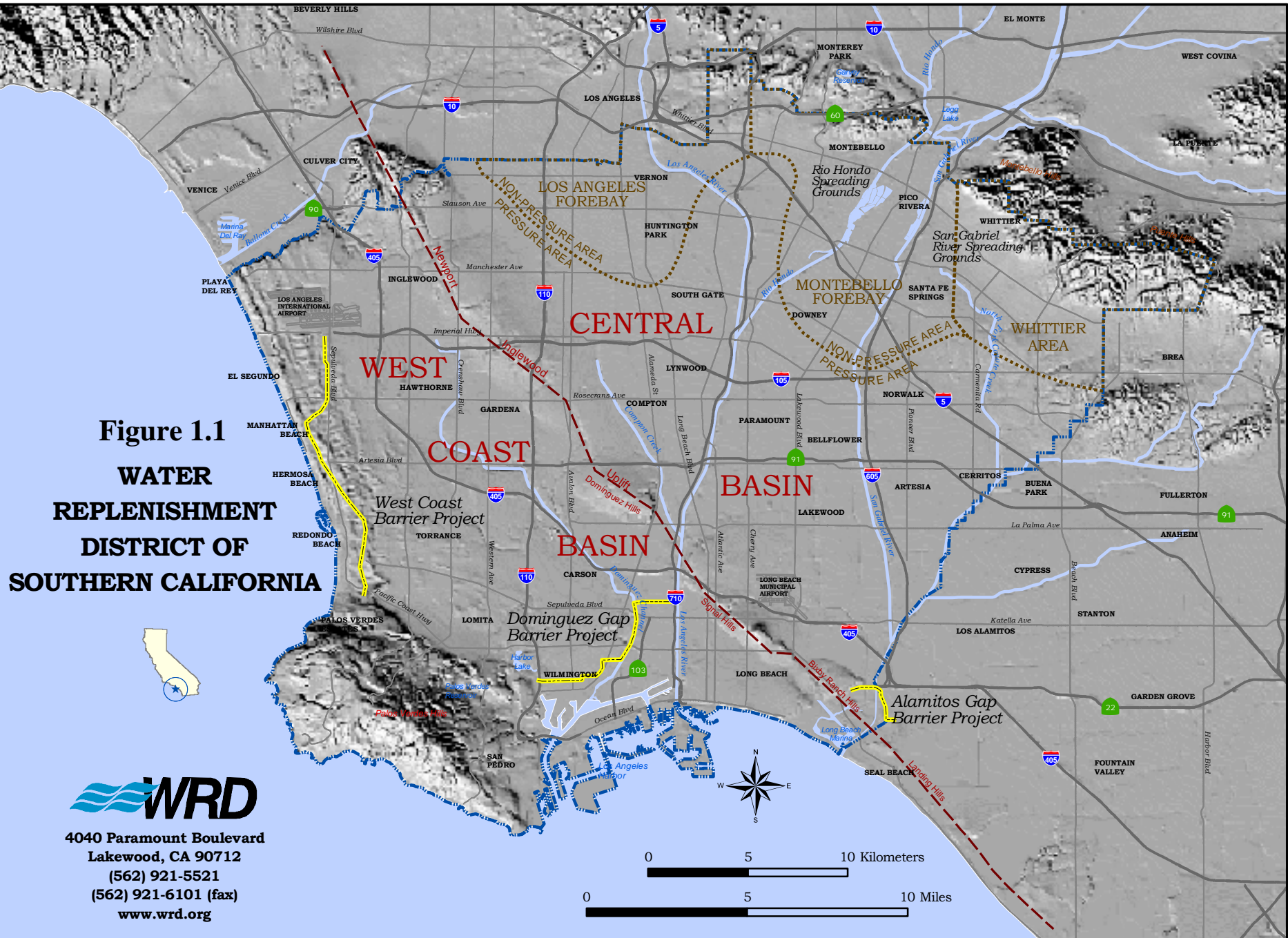
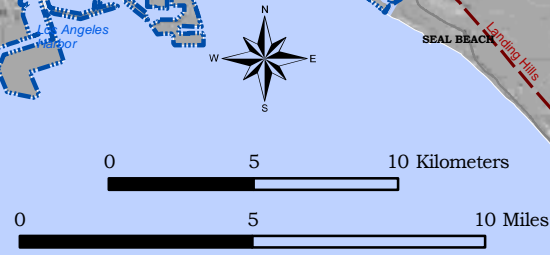


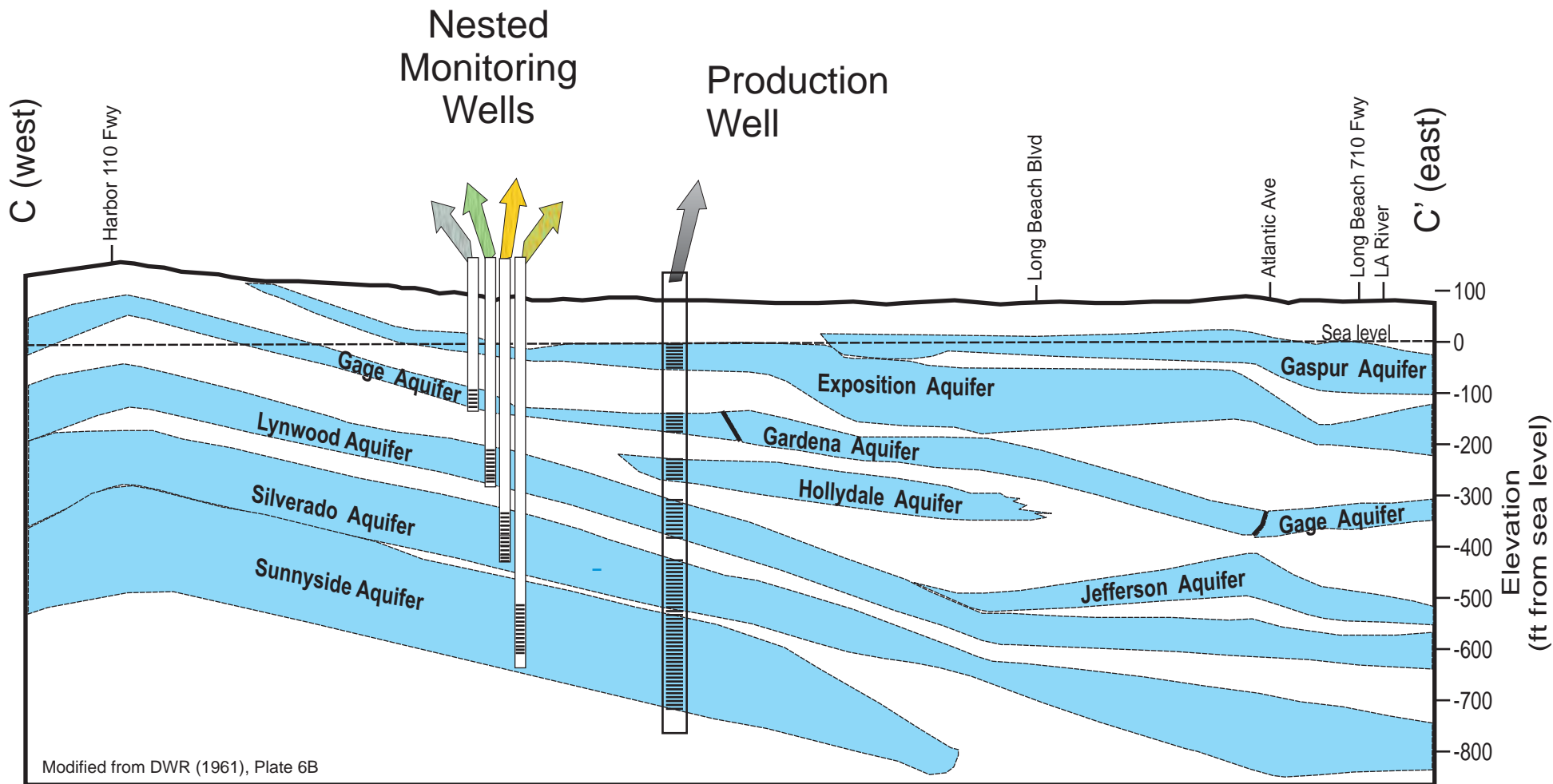
Figure 1.1
WATER
REPLENISHMENT
DISTRICT OF
SOUTHERN CALIFORNIA



4040 Paramount Boulevard
 Lakewood, CA 90712
 (562) 921-5521
 (562) 921-6101 (fax)
 www.wrd.org

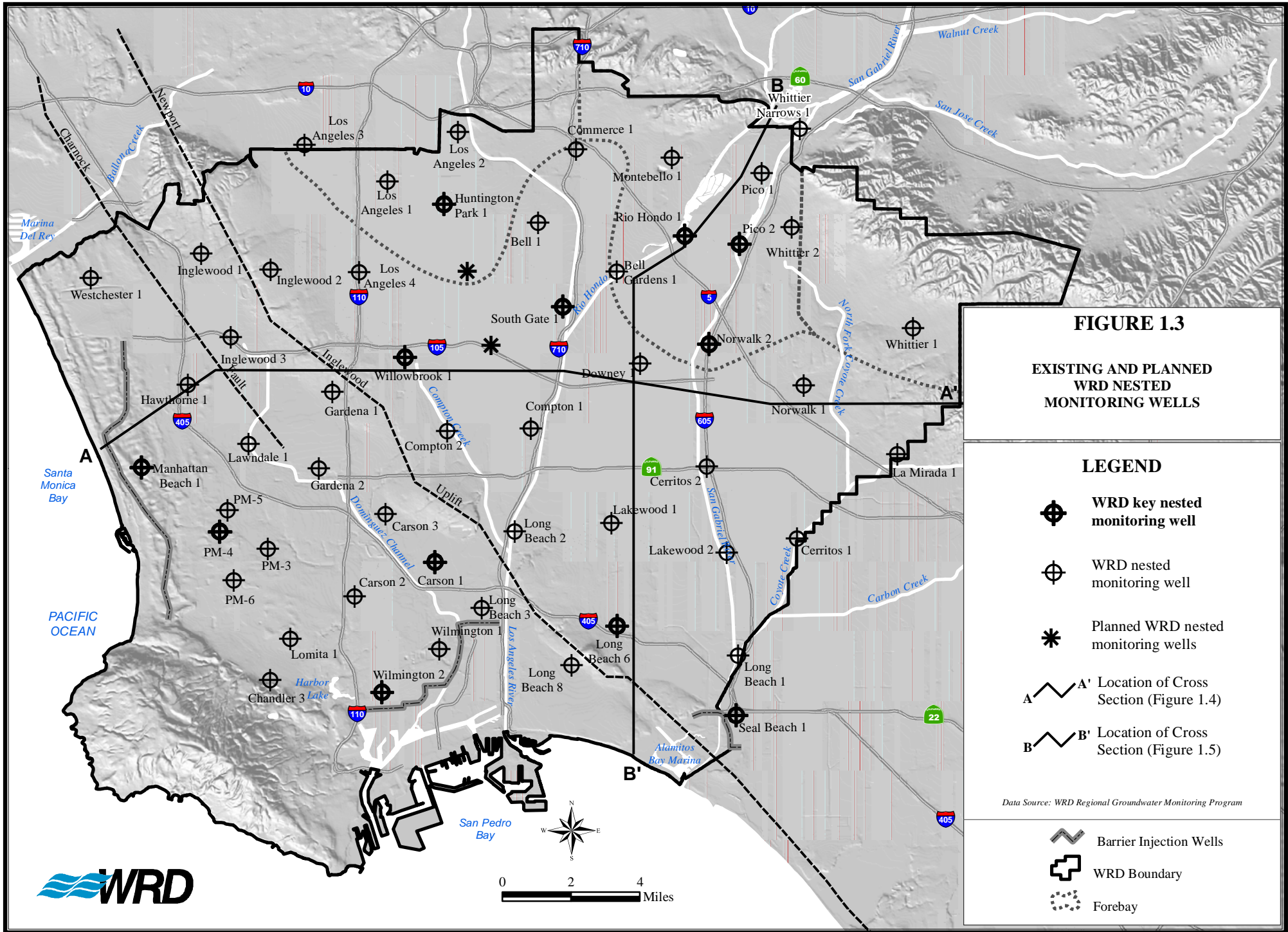


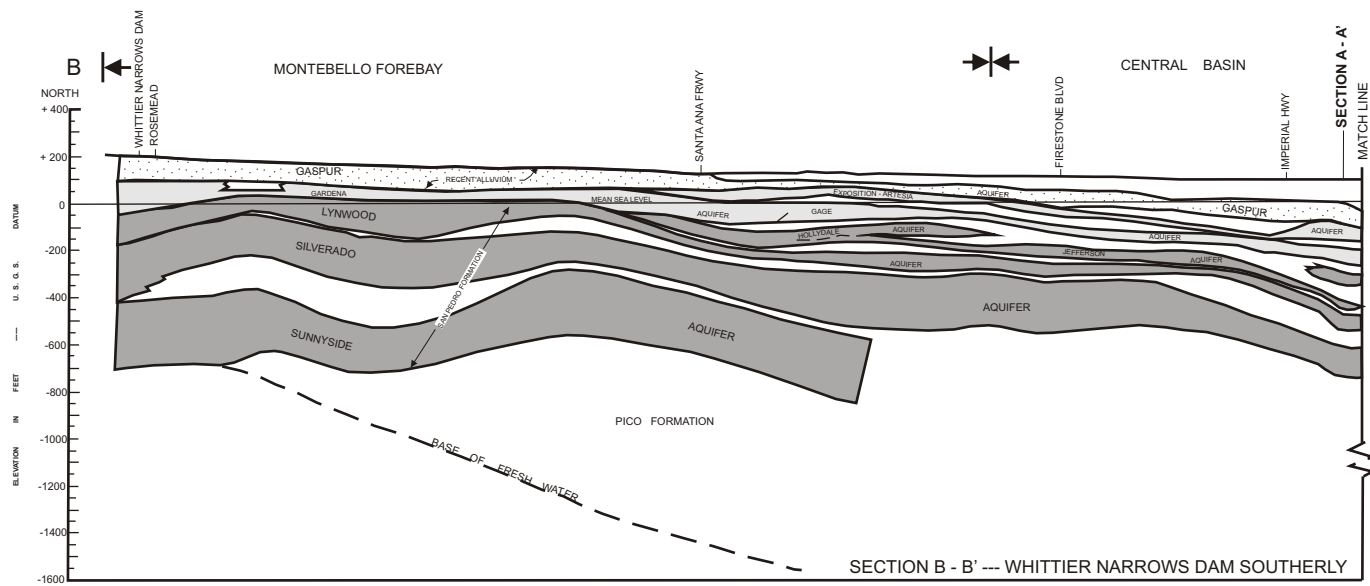
**FIGURE 1.2
 NESTED WELLS vs. PRODUCTION WELLS
 FOR AQUIFER-SPECIFIC DATA**







Modified from DWR (1961), Plate 6B

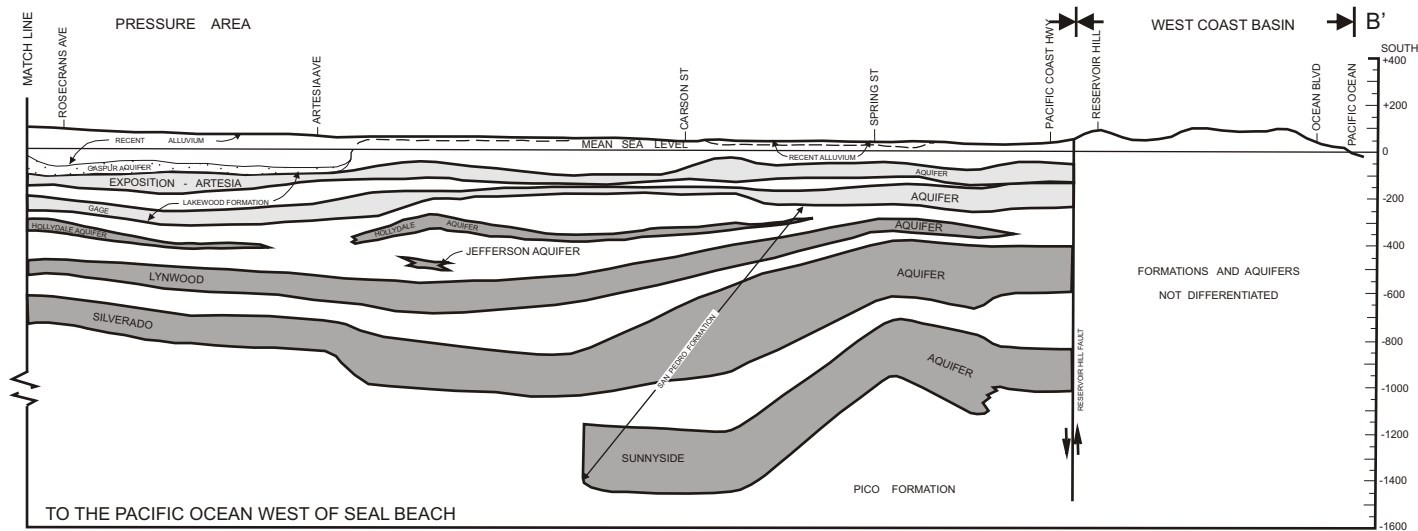
Production wells are typically perforated across multiple aquifers producing an average water quality. Nested monitoring wells are screened in a portion of a specific aquifer, providing water quality and water level information for the specific zone.





LEGEND

-  AQUICLIDES AND DEEPER UNDIFFERENTIATED FORMATIONS
-  AQUIFERS IN RECENT ALLUVIUM (INCLUDES THE GASPUR AND BALLONA AQUIFERS)
-  AQUIFERS IN LAKEWOOD FORMATION (INCLUDES THE ARTESIA, EXPOSITION, GAGE, AND GARDENA AQUIFERS)
-  AQUIFERS IN THE SAN PEDRO FORMATION (INCLUDES THE HOLLYDALE, JEFFERSON, LYNWOOD, SILVERADO AND SUNNYSIDE AQUIFERS)



IDEALIZED GEOLOGIC CROSS SECTION BB'

Adapted from
CDWR Bull. 104 App. B

FIGURE 1.5

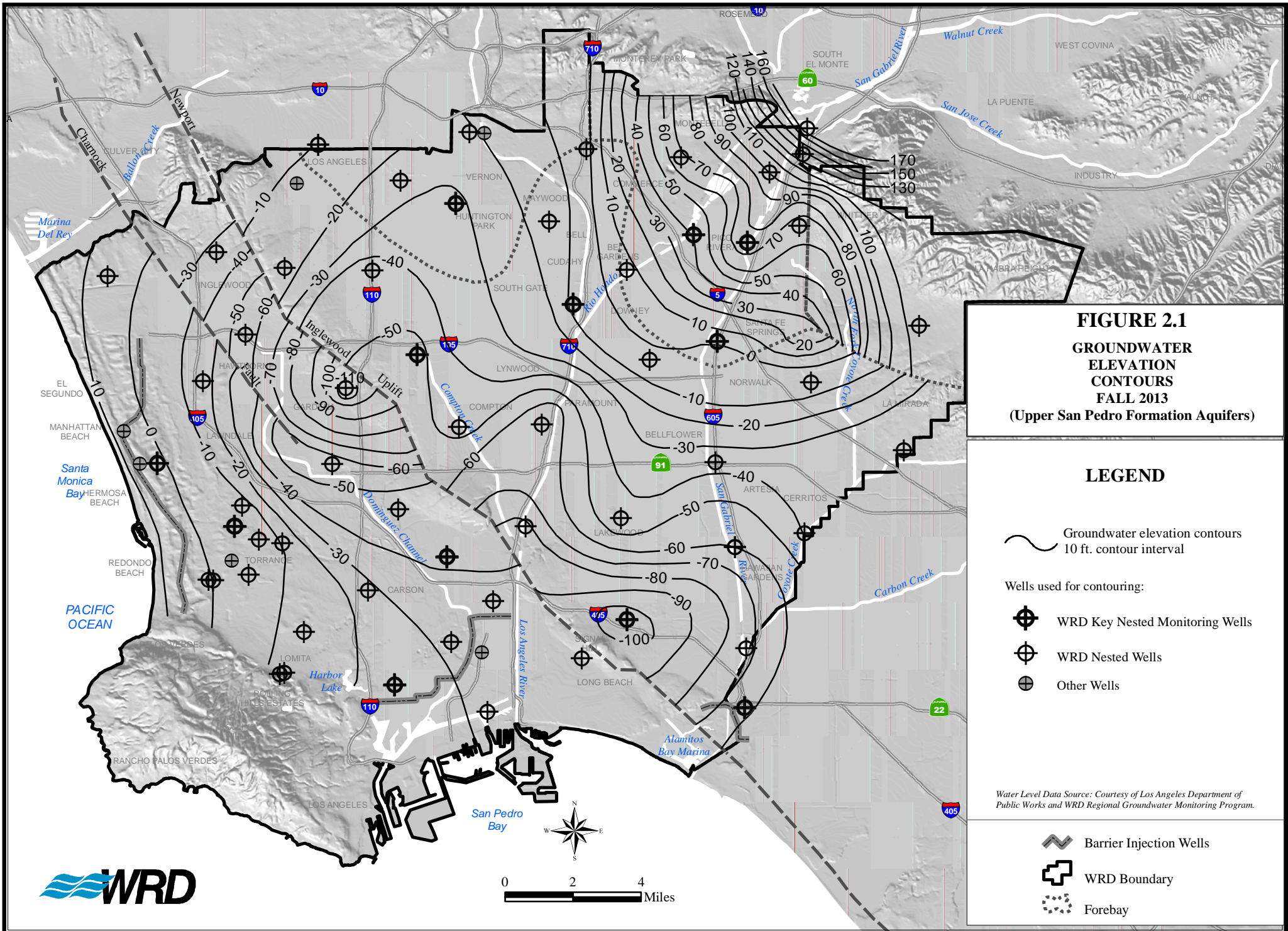









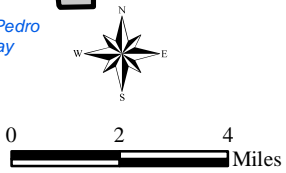
FIGURE 2.1
GROUNDWATER
ELEVATION
CONTOURS
FALL 2013
(Upper San Pedro Formation Aquifers)

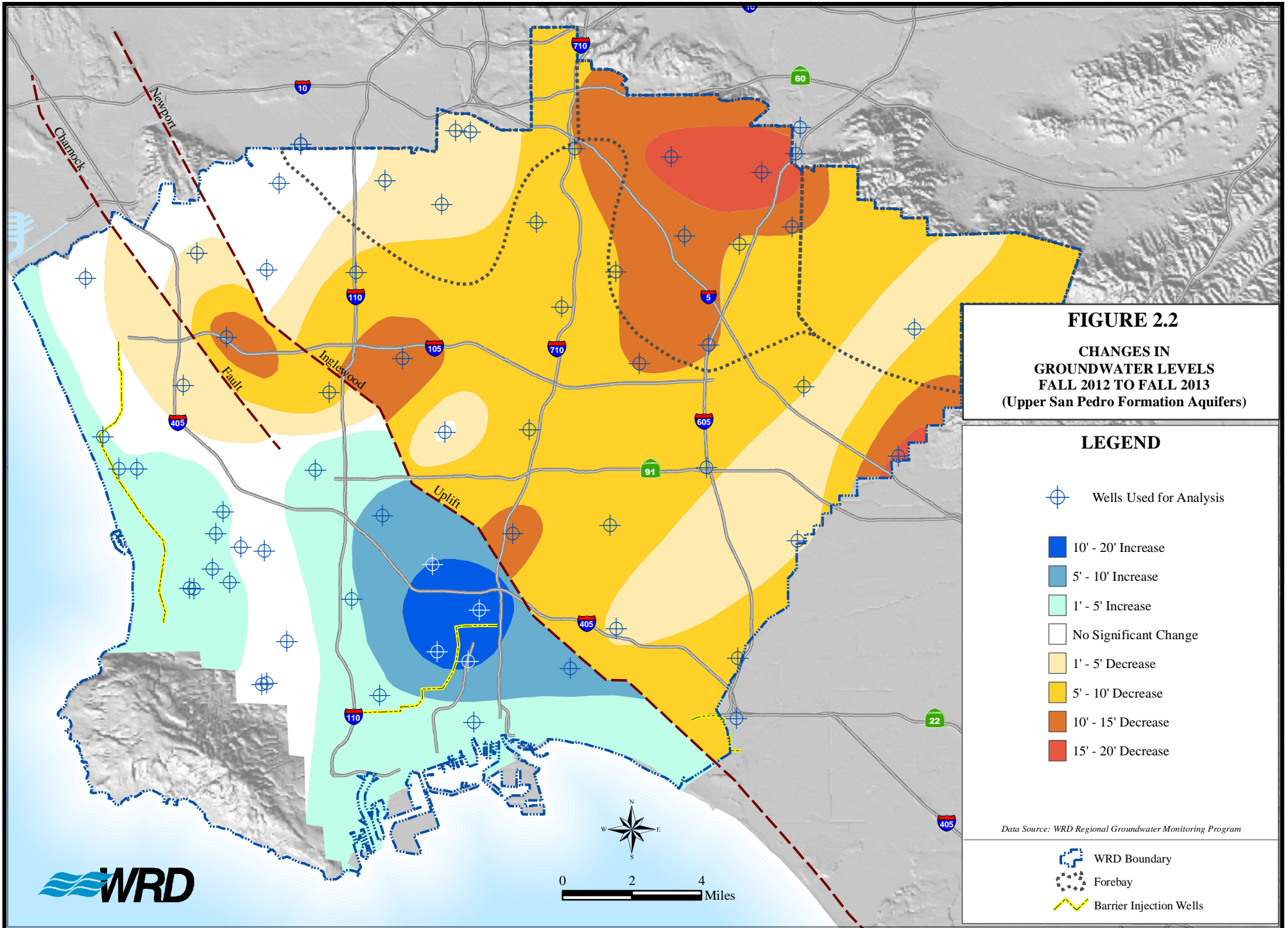
LEGEND

-  Groundwater elevation contours
10 ft. contour interval
- Wells used for contouring:
 -  WRD Key Nested Monitoring Wells
 -  WRD Nested Wells
 -  Other Wells

Water Level Data Source: Courtesy of Los Angeles Department of Public Works and WRD Regional Groundwater Monitoring Program.

-  Barrier Injection Wells
-  WRD Boundary
-  Forebay





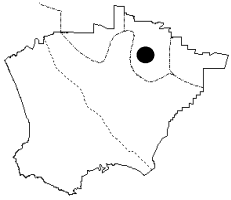
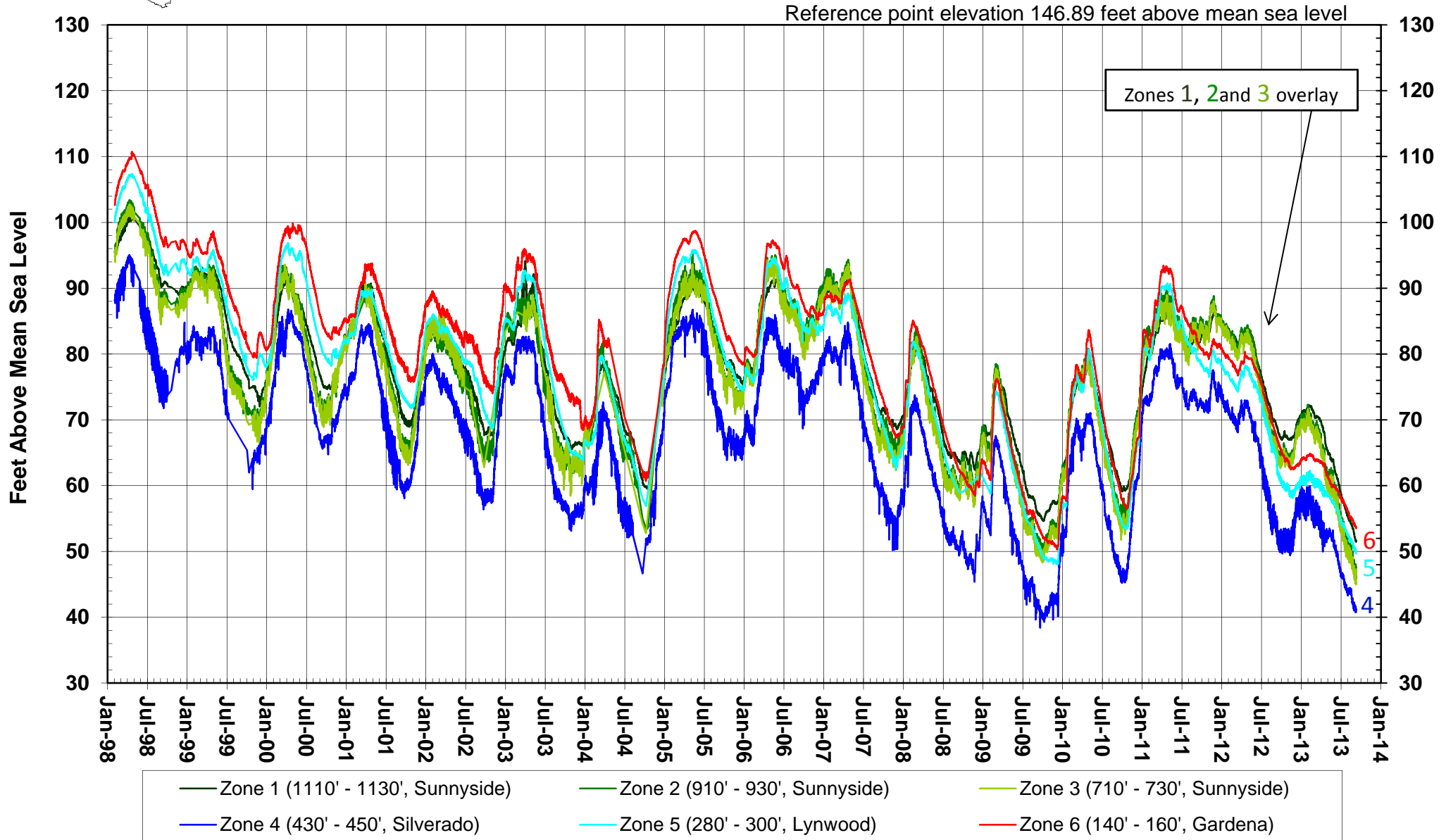


FIGURE 2.3
WATER LEVELS IN WRD KEY NESTED
MONITORING WELL RIO HONDO #1



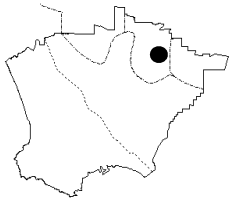
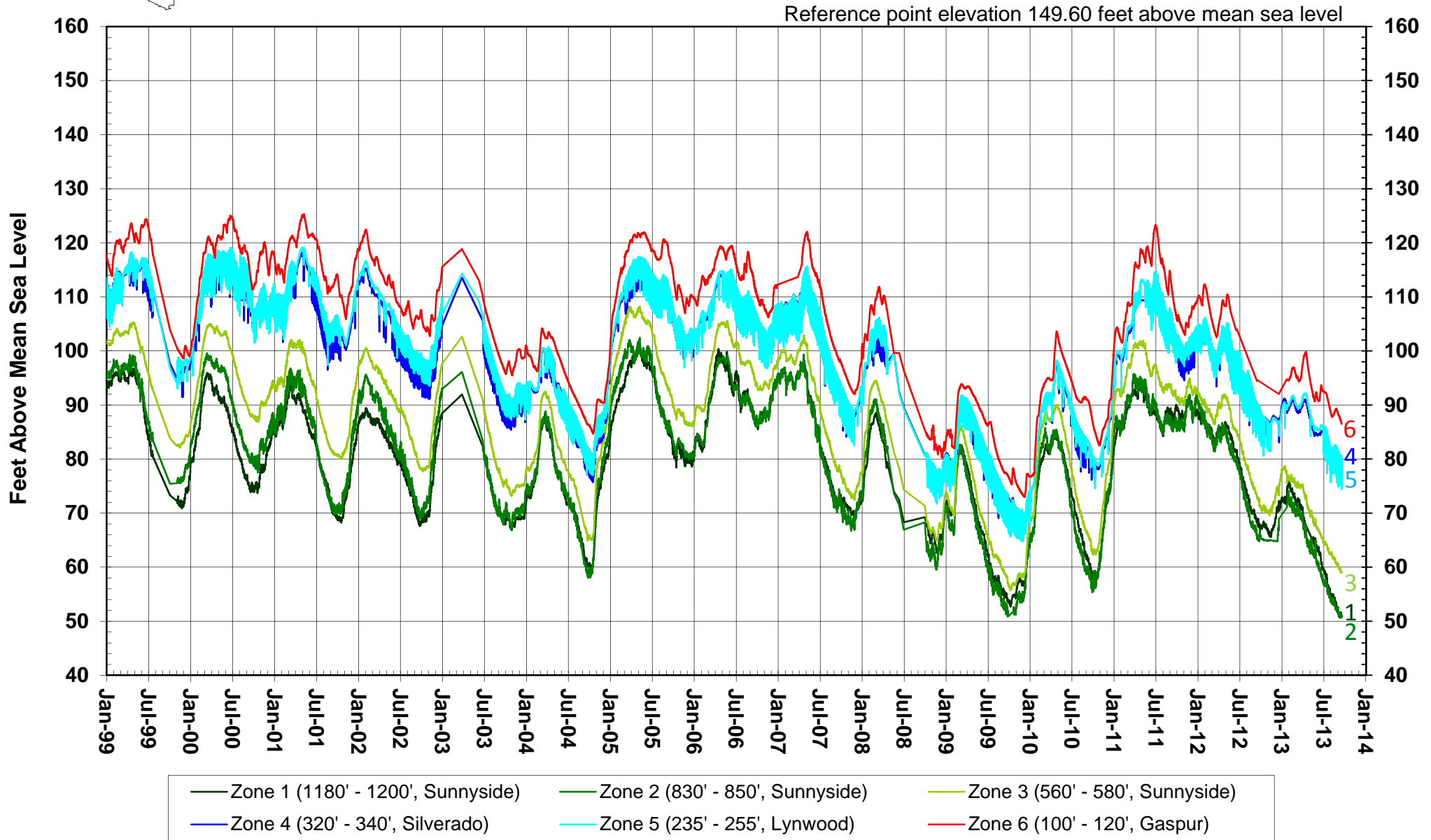


FIGURE 2.4
WATER LEVELS IN WRD KEY NESTED
MONITORING WELL PICO #2



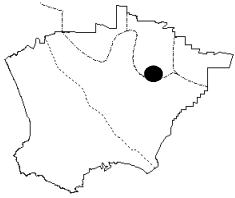
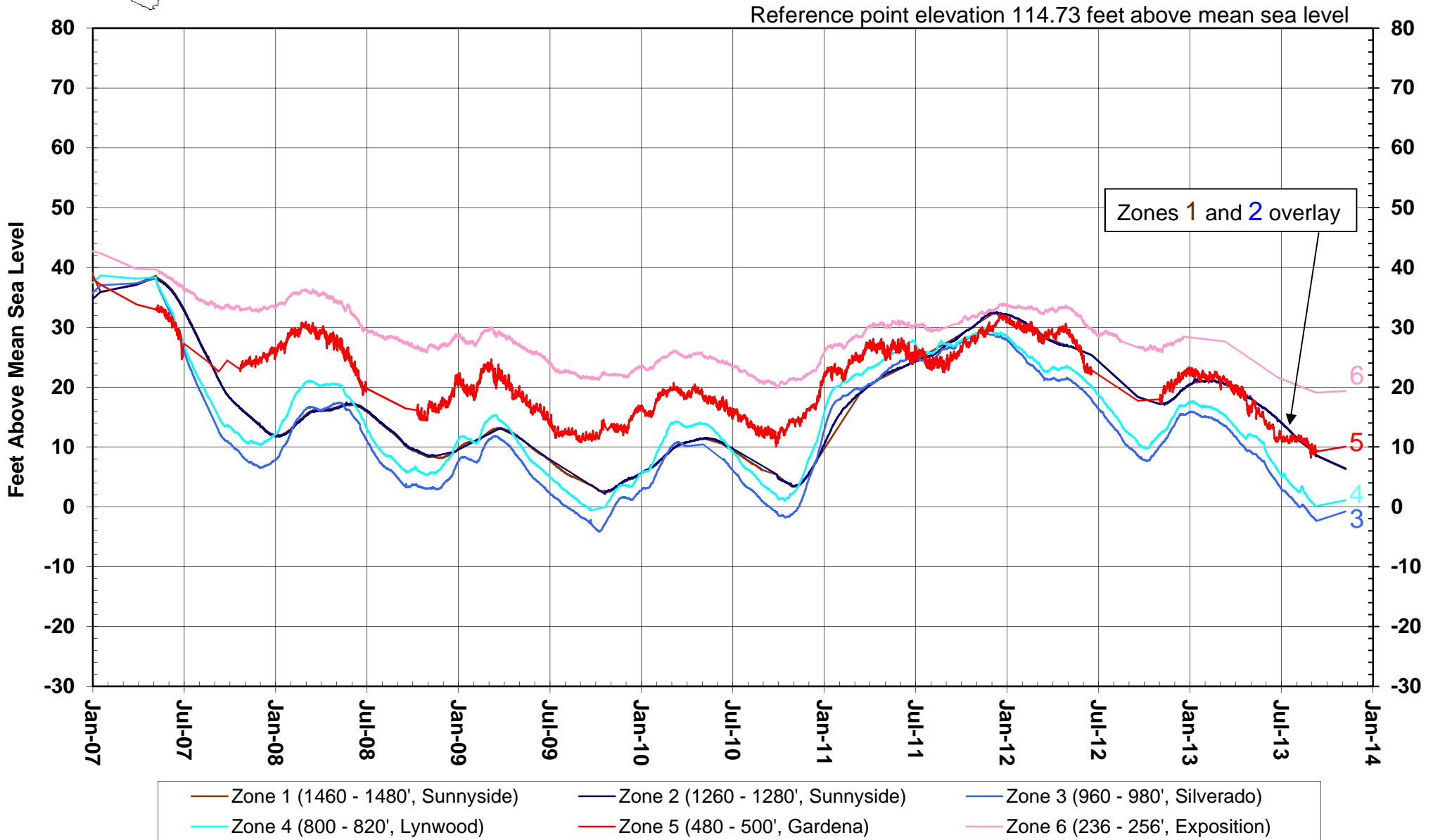


FIGURE 2.5
WATER LEVELS IN WRD KEY NESTED
MONITORING WELL NORWALK #2



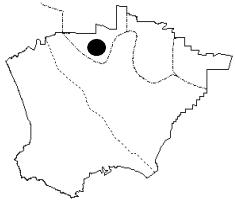
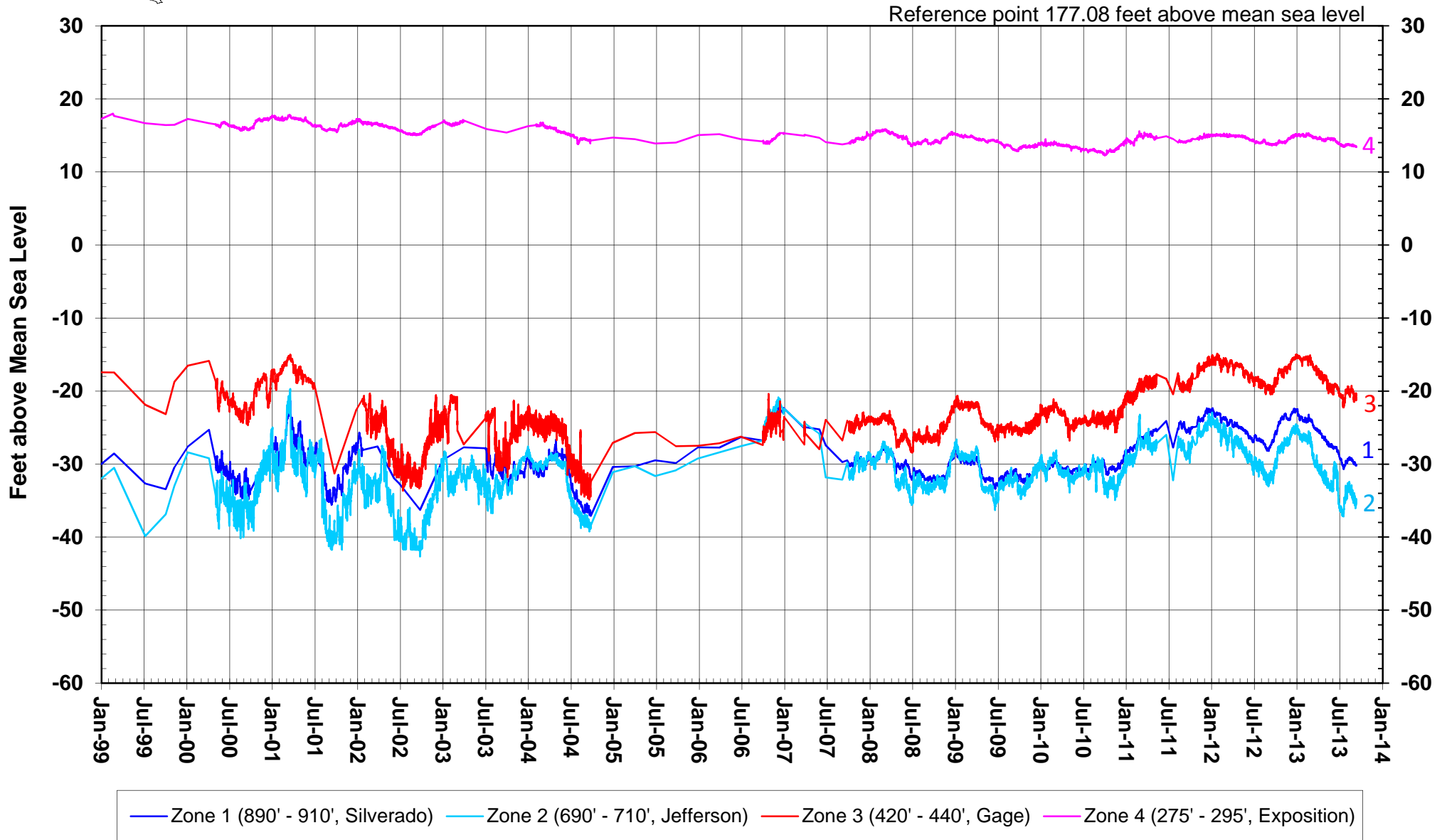


FIGURE 2.6
WATER LEVELS IN WRD KEY NESTED
MONITORING WELL HUNTINGTON PARK #1



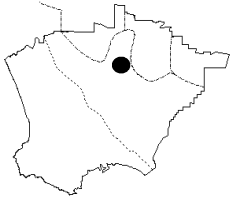
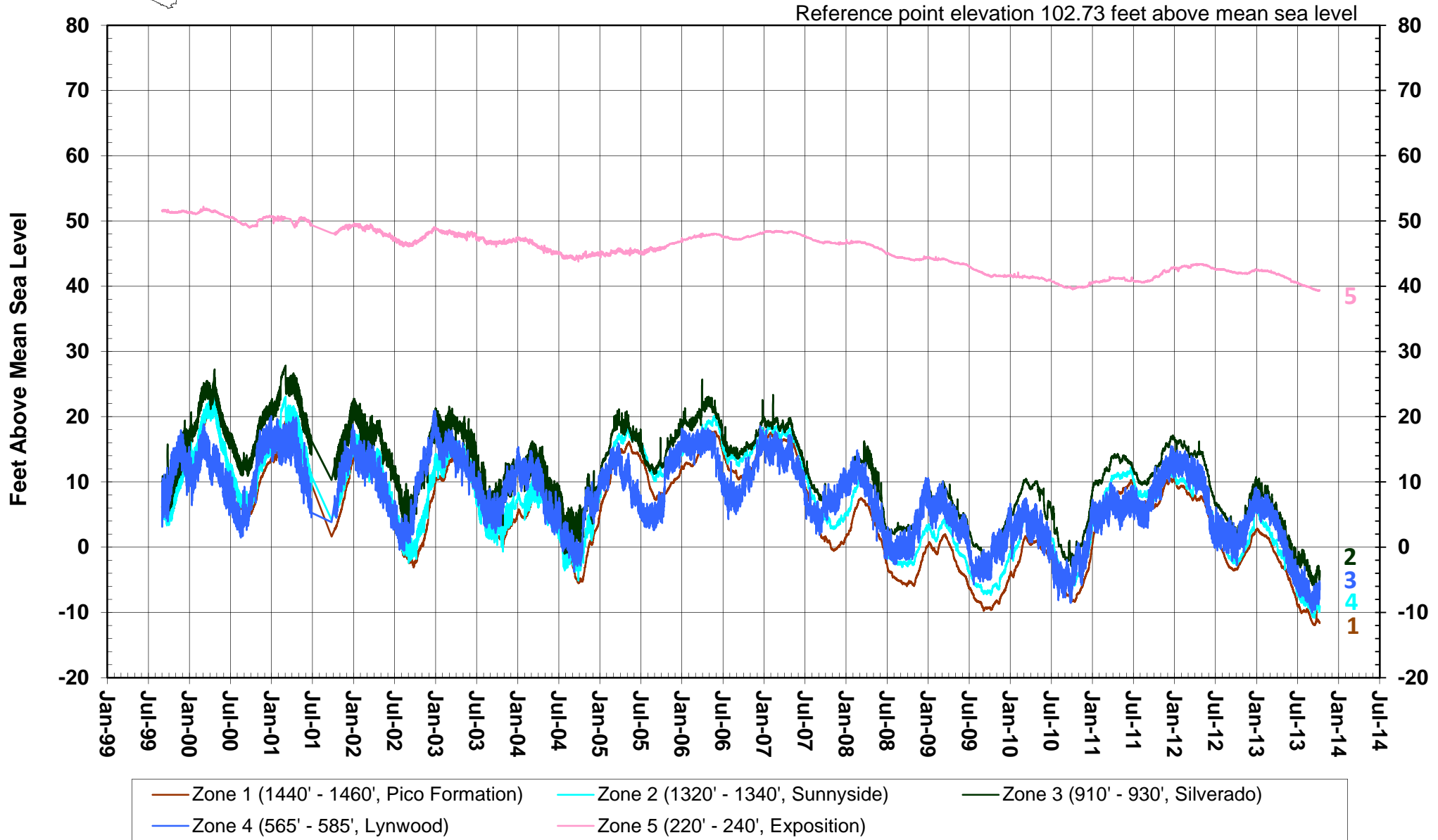


FIGURE 2.7
WATER LEVELS IN WRD KEY NESTED
MONITORING WELL SOUTH GATE #1



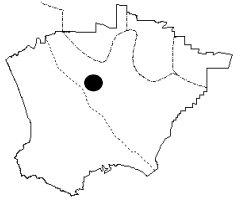
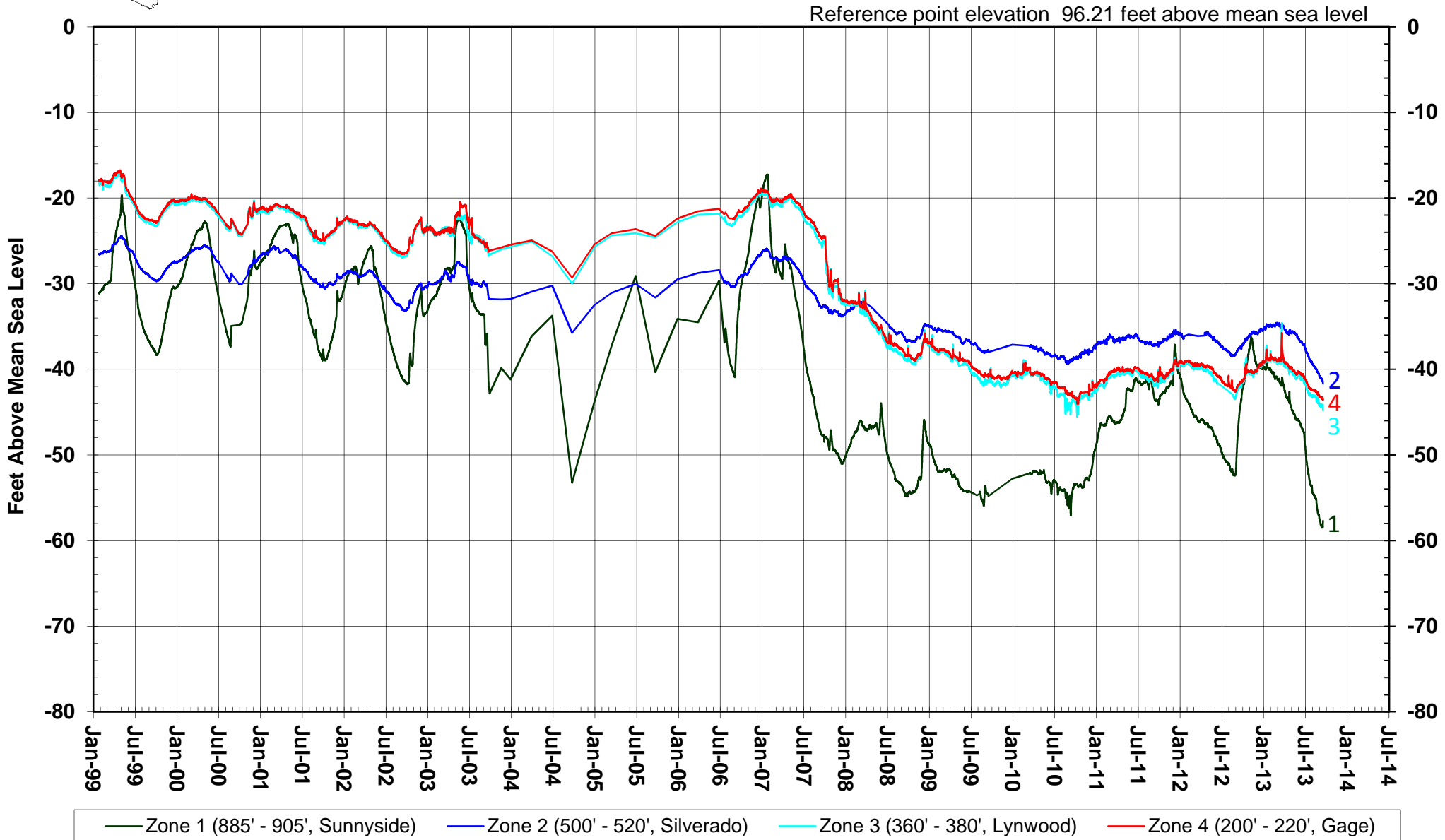


FIGURE 2.8
WATER LEVELS IN WRD KEY NESTED
MONITORING WELL WILLOWBROOK #1



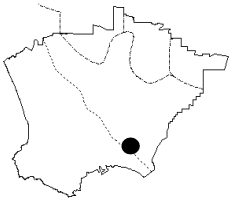
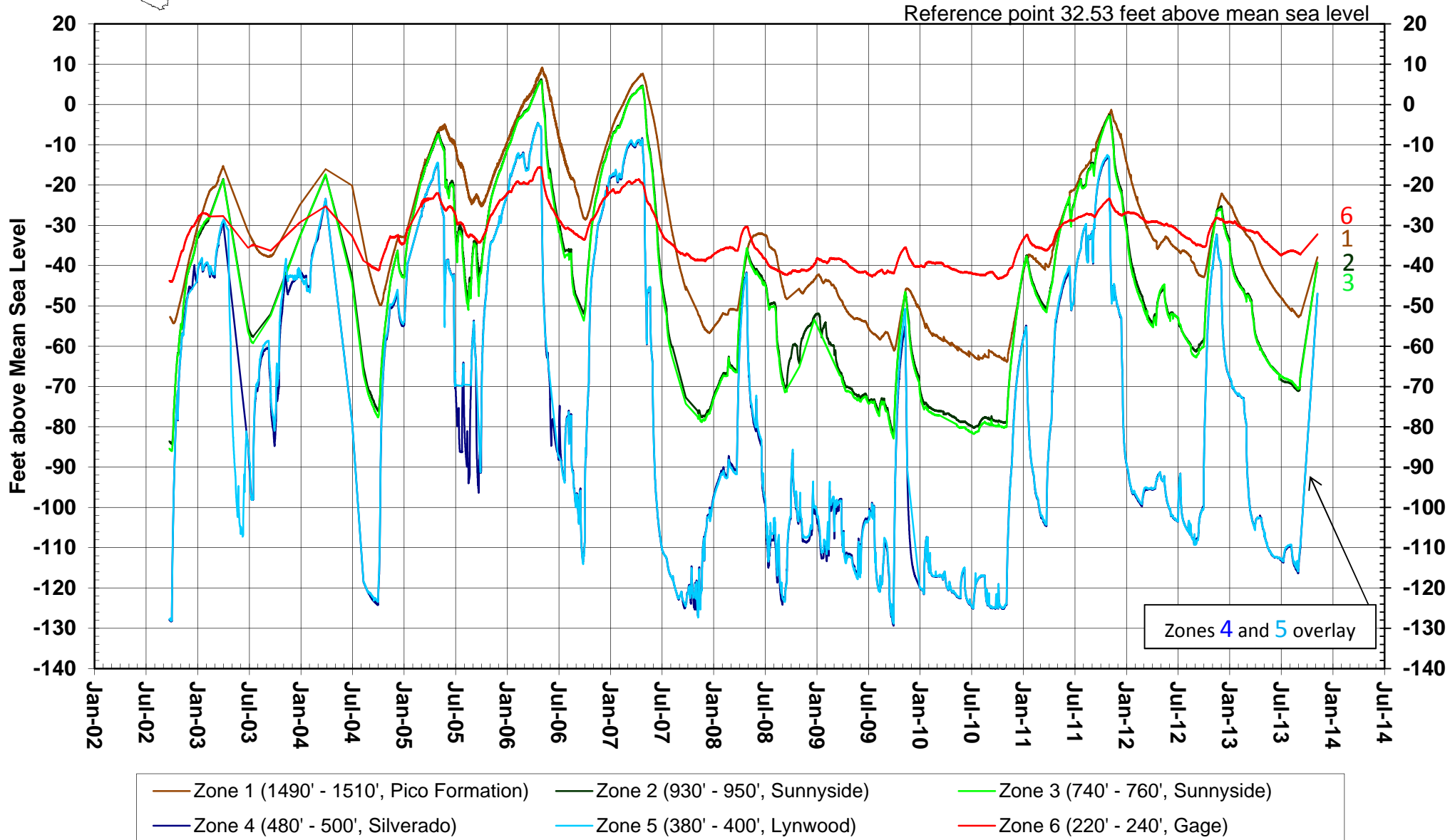


FIGURE 2.9
WATER LEVELS IN WRD KEY NESTED
MONITORING WELL LONG BEACH #6



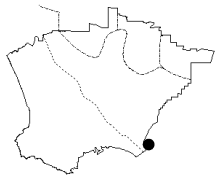
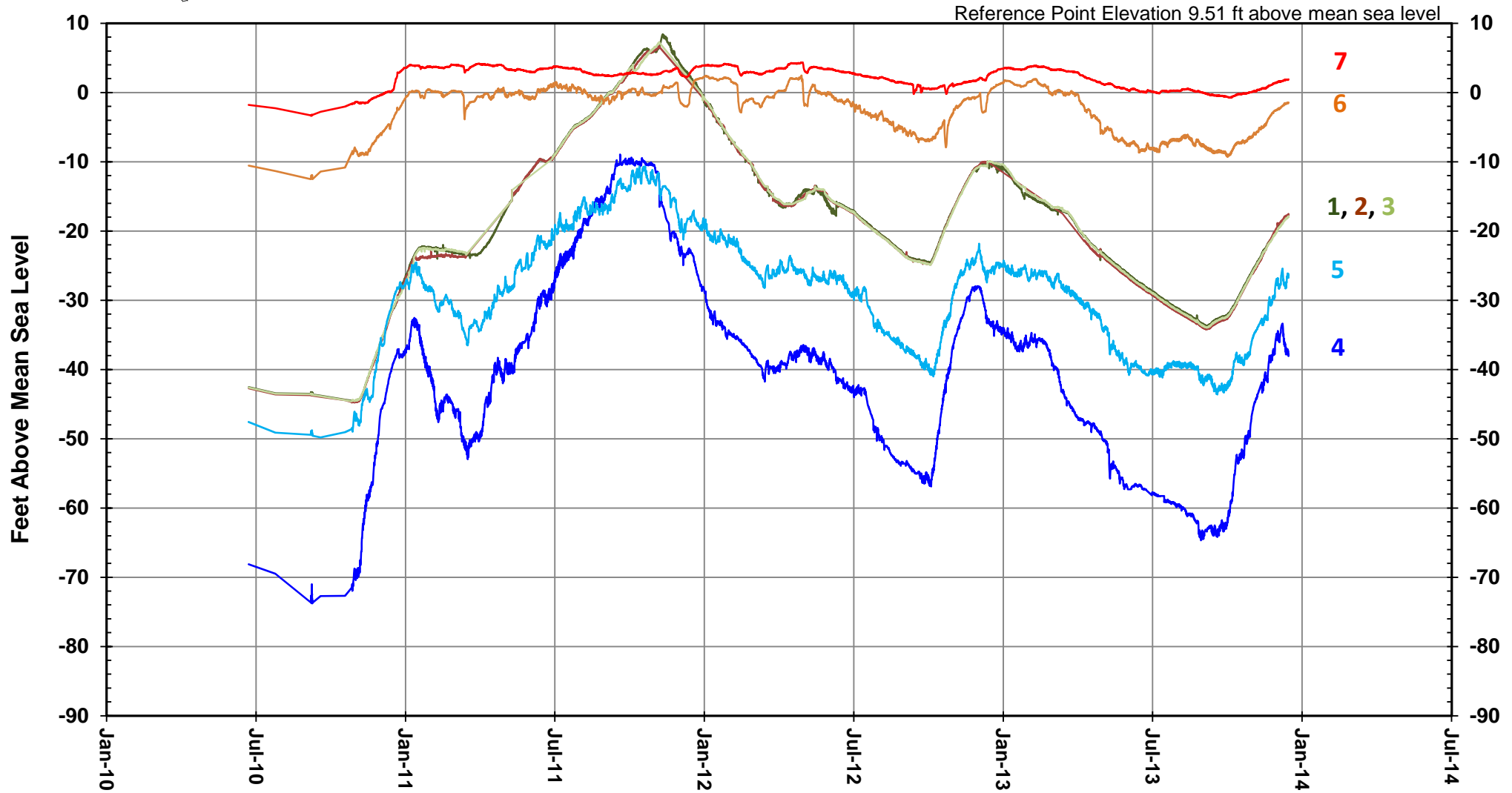


FIGURE 2.10
WATER LEVELS IN WRD KEY NESTED
MONITORING WELL SEAL BEACH #1



- Zone 1 (1345' - 1365', Sunnyside)
- Zone 2 (1160' - 1180', Sunnyside)
- Zone 3 (1020' - 1040', Sunnyside)
- Zone 4 (775' - 795', Silverado)
- Zone 5 (605' - 625', Lynwood)
- Zone 6 (215' - 235', Gage)
- Zone 7 (60' - 70', Gaspar)

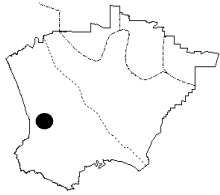
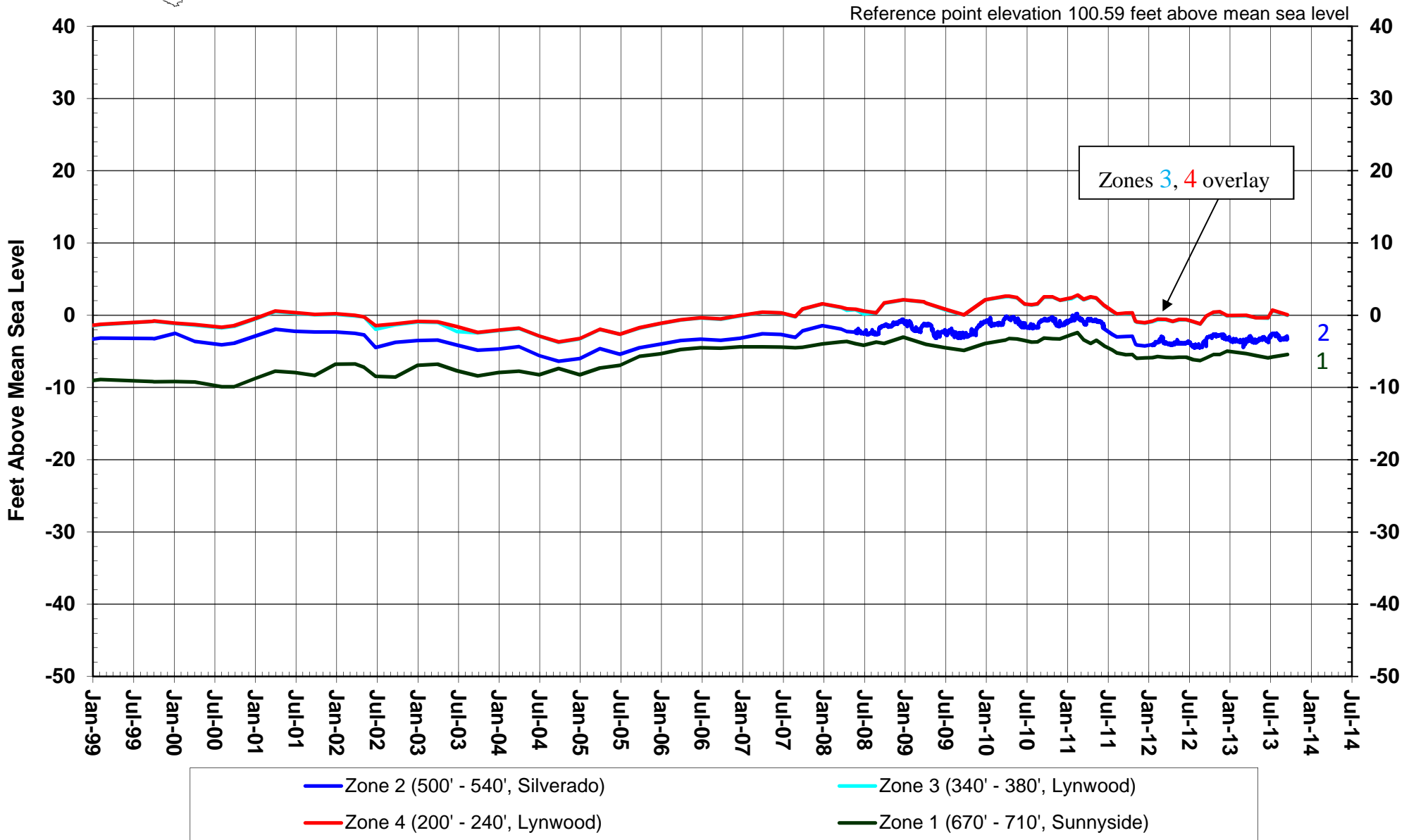


FIGURE 2.11
WATER LEVELS IN WRD NESTED
MONITORING WELL PM-4 MARINER



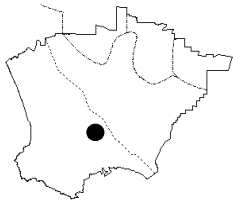
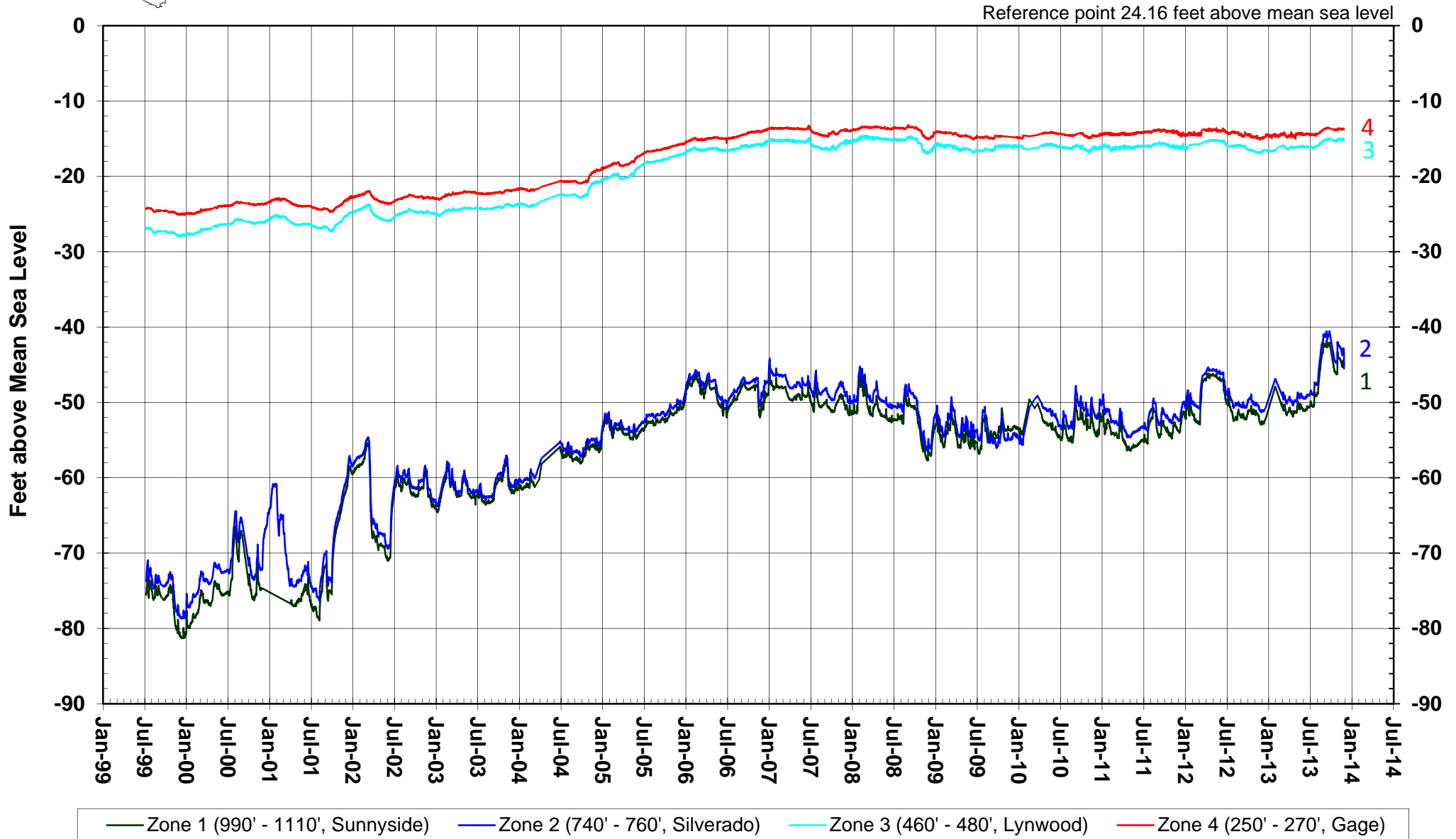


FIGURE 2.12
WATER LEVELS IN WRD KEY NESTED
MONITORING WELL CARSON #1



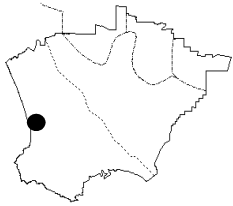
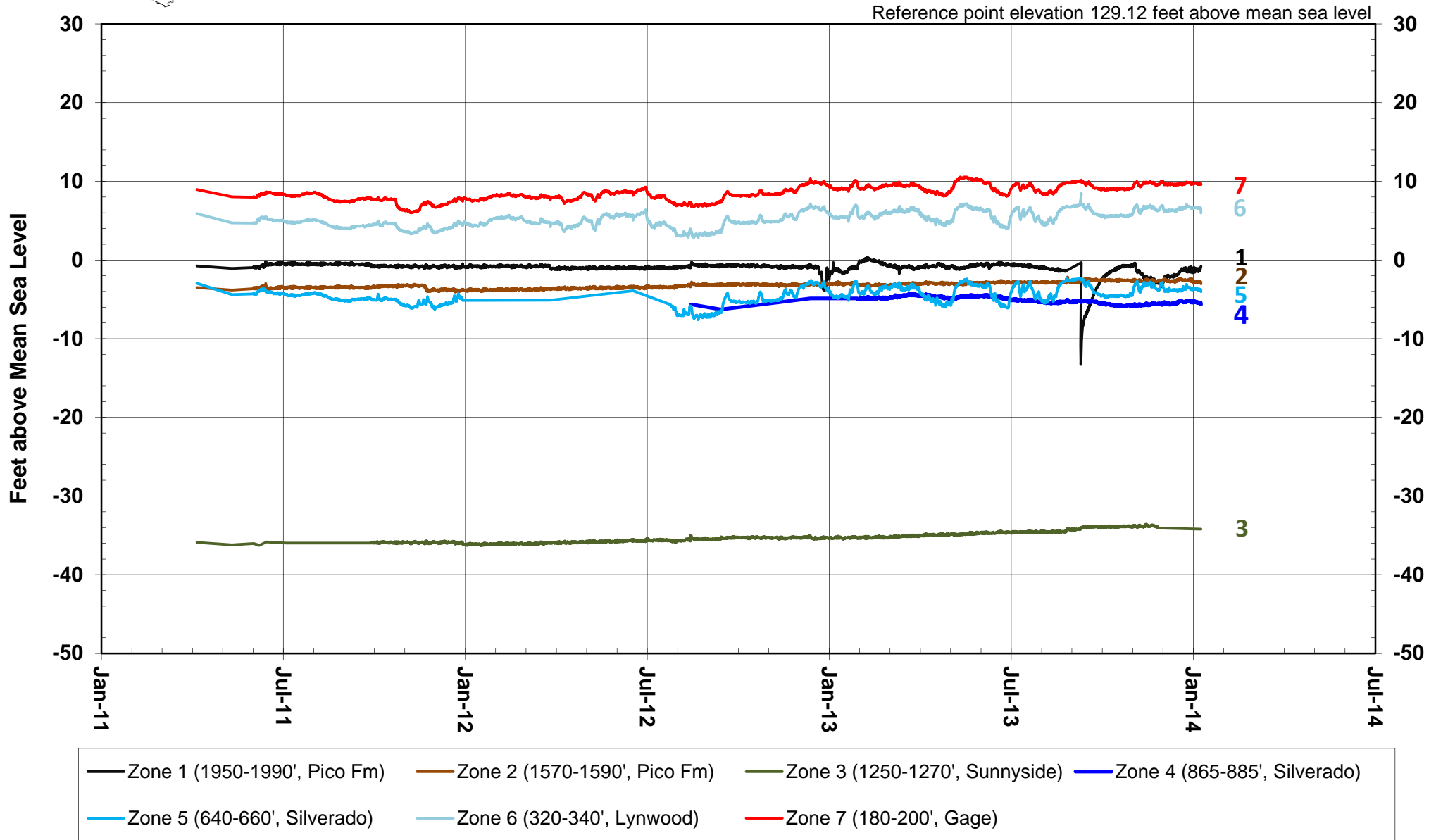


FIGURE 2.13
WATER LEVELS IN WRD KEY NESTED
MONITORING WELL MANHATTAN BEACH #1



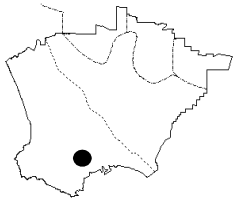
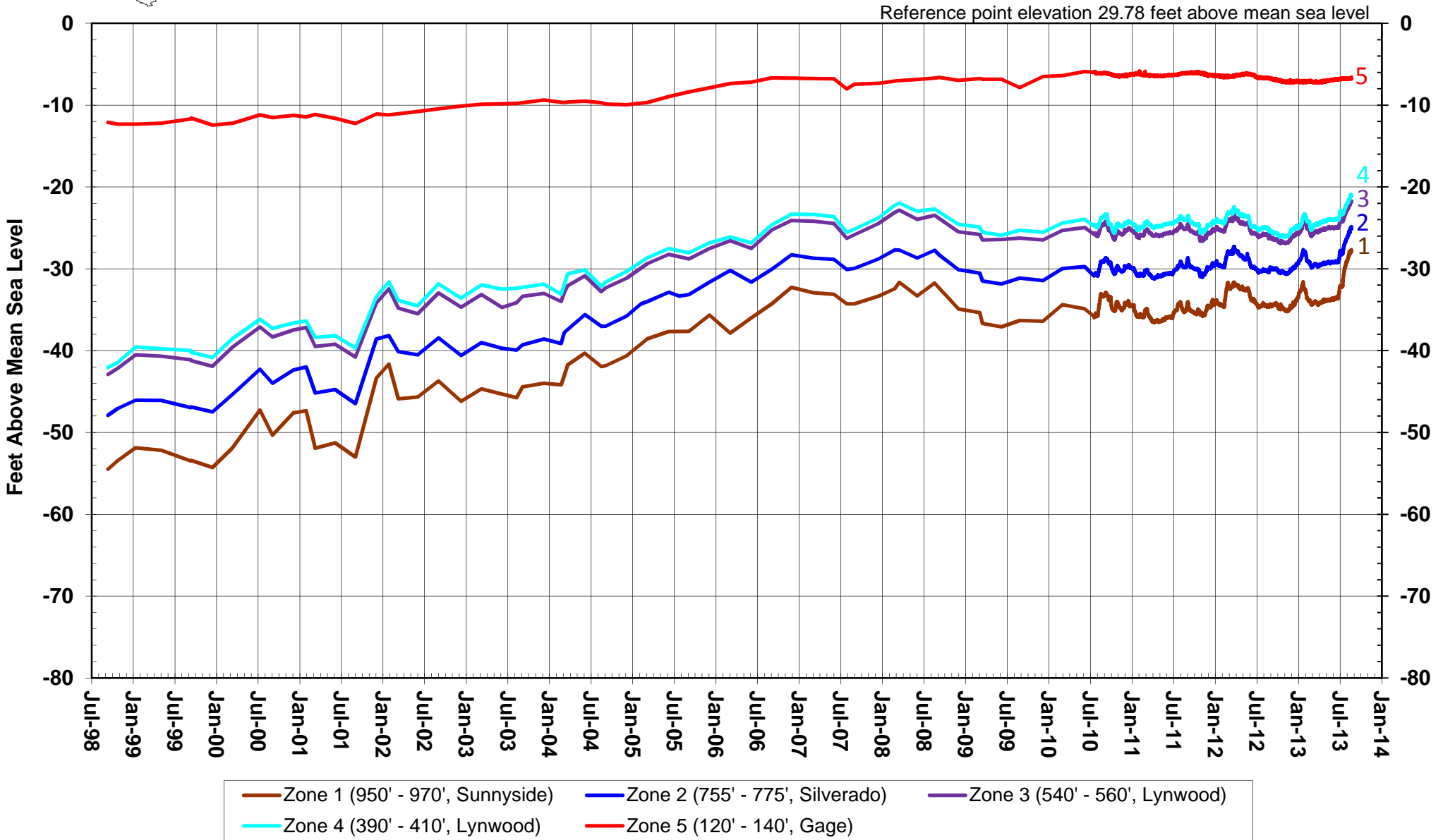
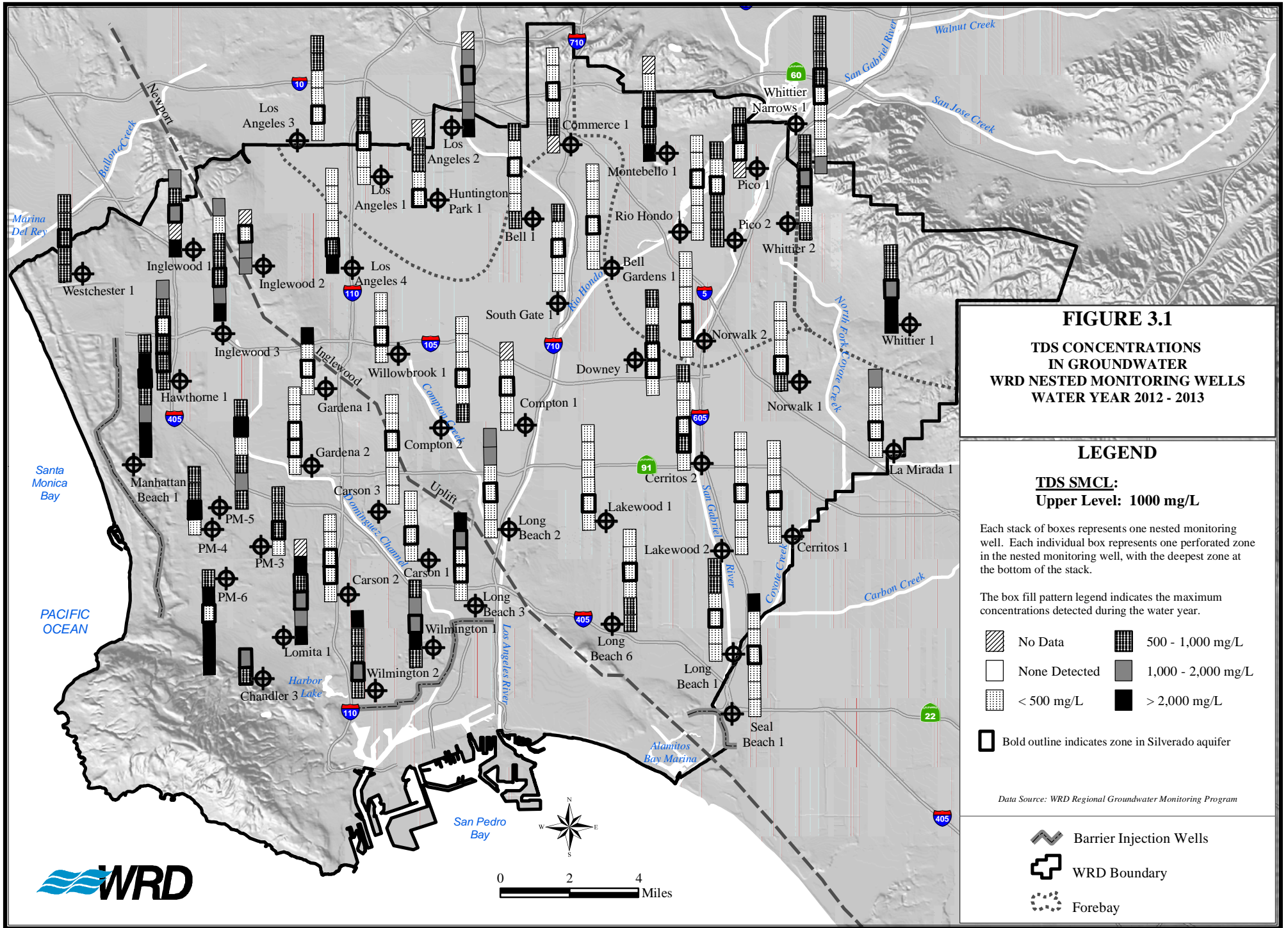


FIGURE 2.14
WATER LEVELS IN WRD KEY NESTED
MONITORING WELL WILMINGTON #2





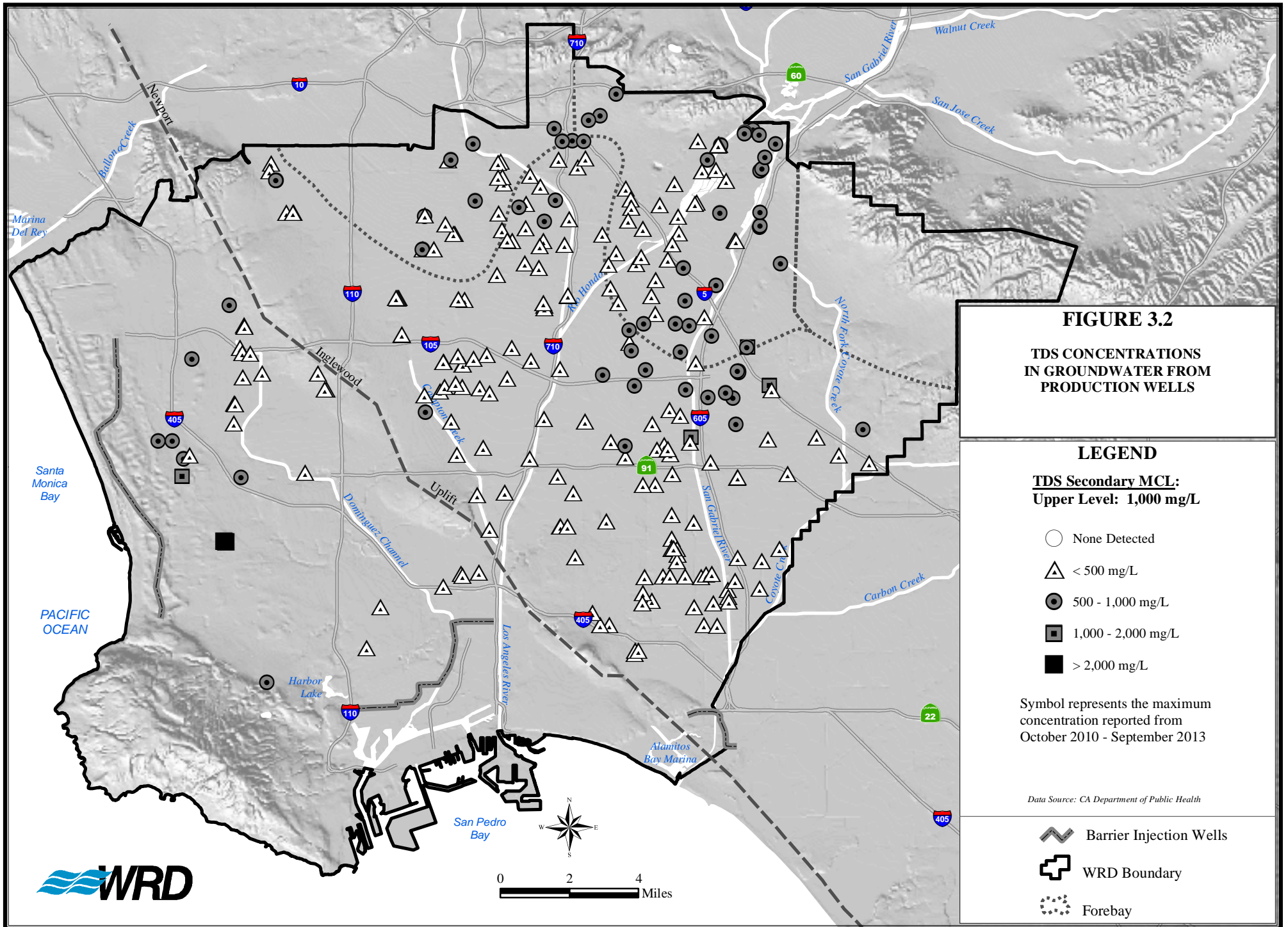


FIGURE 3.2

**TDS CONCENTRATIONS
IN GROUNDWATER FROM
PRODUCTION WELLS**

LEGEND

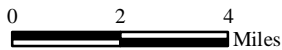
**TDS Secondary MCL:
Upper Level: 1,000 mg/L**

- None Detected
- △ < 500 mg/L
- 500 - 1,000 mg/L
- 1,000 - 2,000 mg/L
- > 2,000 mg/L

Symbol represents the maximum concentration reported from October 2010 - September 2013

Data Source: CA Department of Public Health

- ⚡ Barrier Injection Wells
- ⊕ WRD Boundary
- ⋯ Forebay



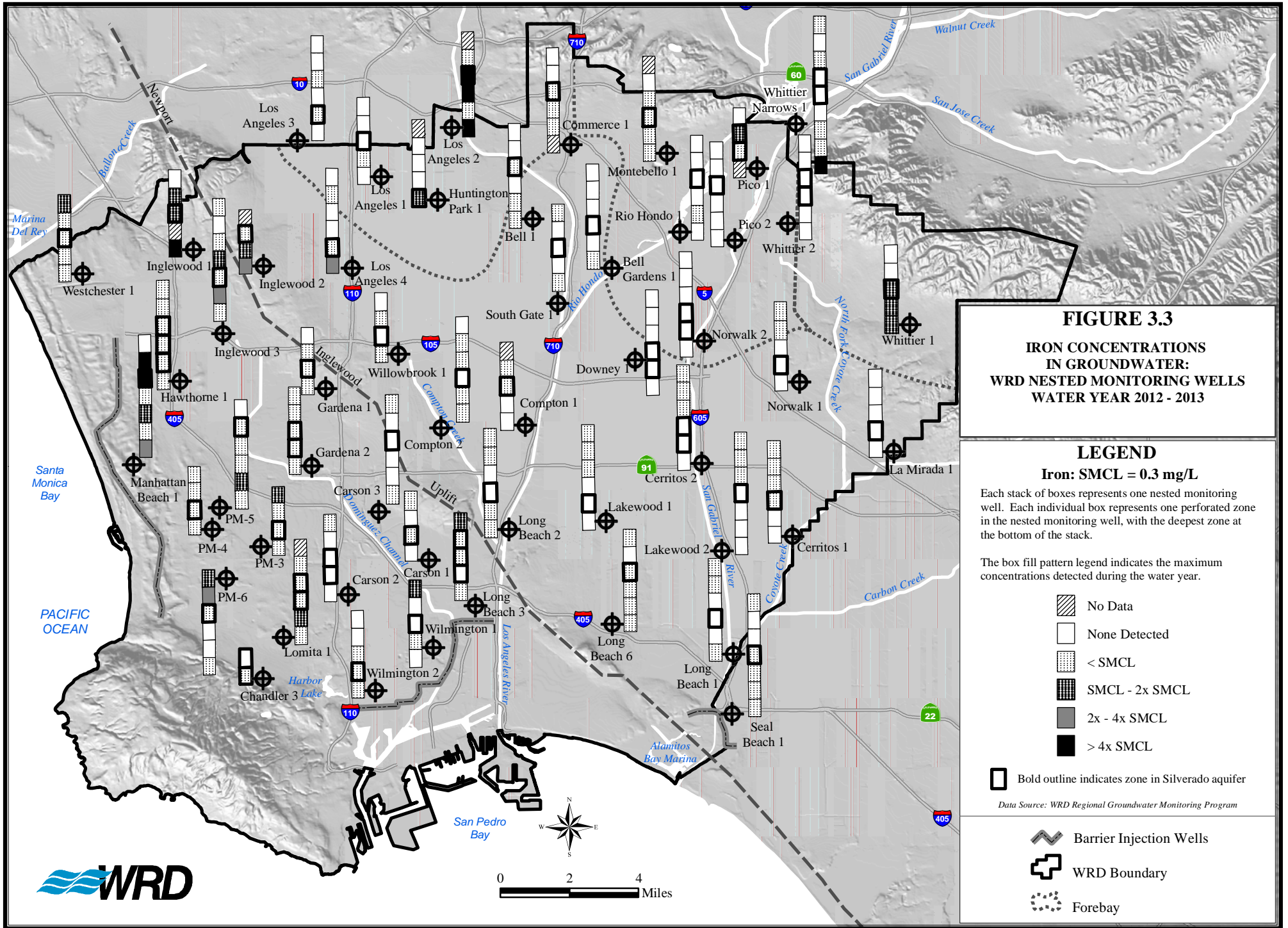


FIGURE 3.3
IRON CONCENTRATIONS
IN GROUNDWATER:
WRD NESTED MONITORING WELLS
WATER YEAR 2012 - 2013

LEGEND
Iron: SMCL = 0.3 mg/L

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

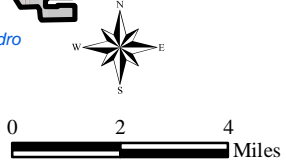
The box fill pattern legend indicates the maximum concentrations detected during the water year.

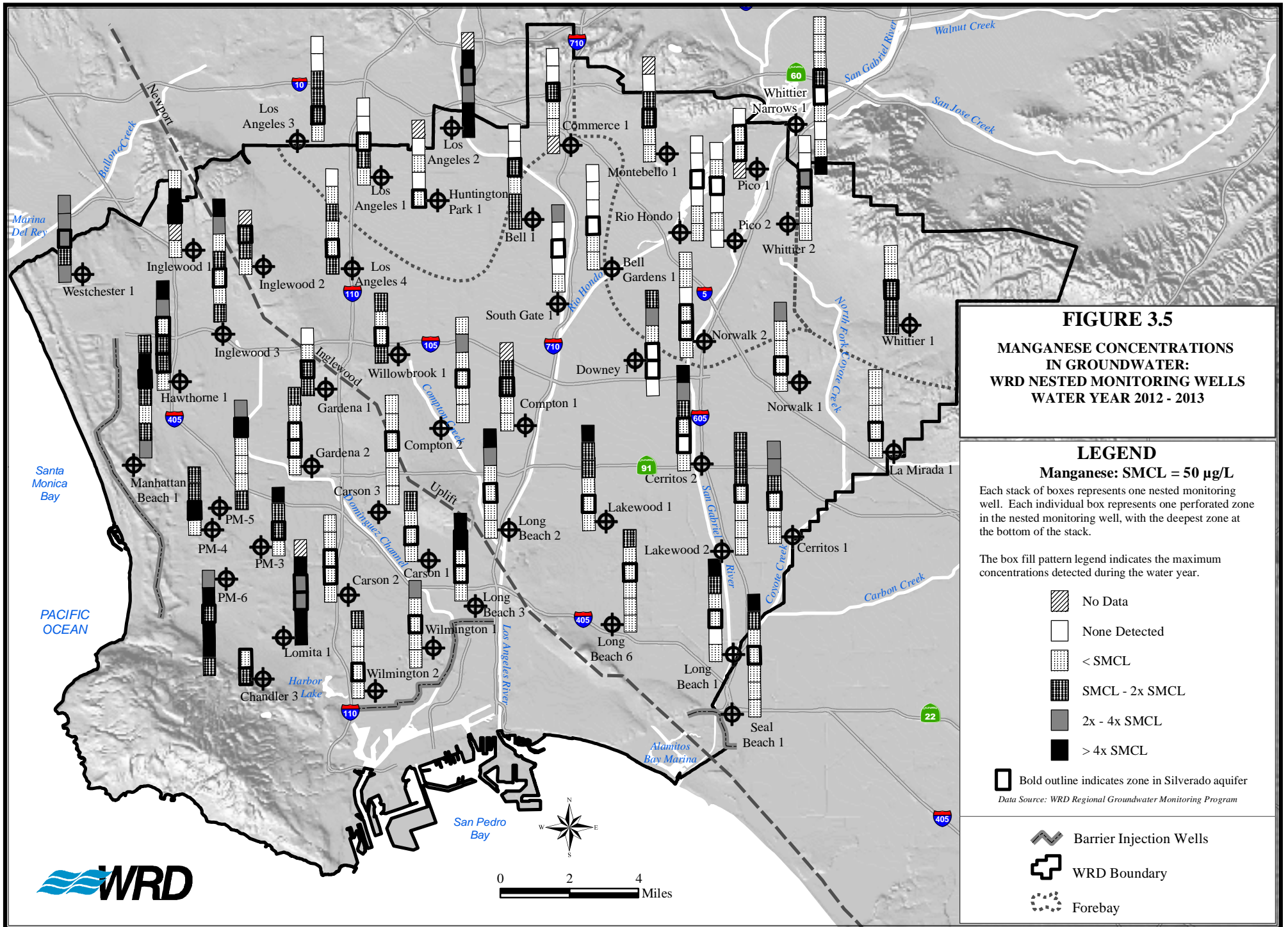
- No Data
- None Detected
- < SMCL
- SMCL - 2x SMCL
- 2x - 4x SMCL
- > 4x SMCL

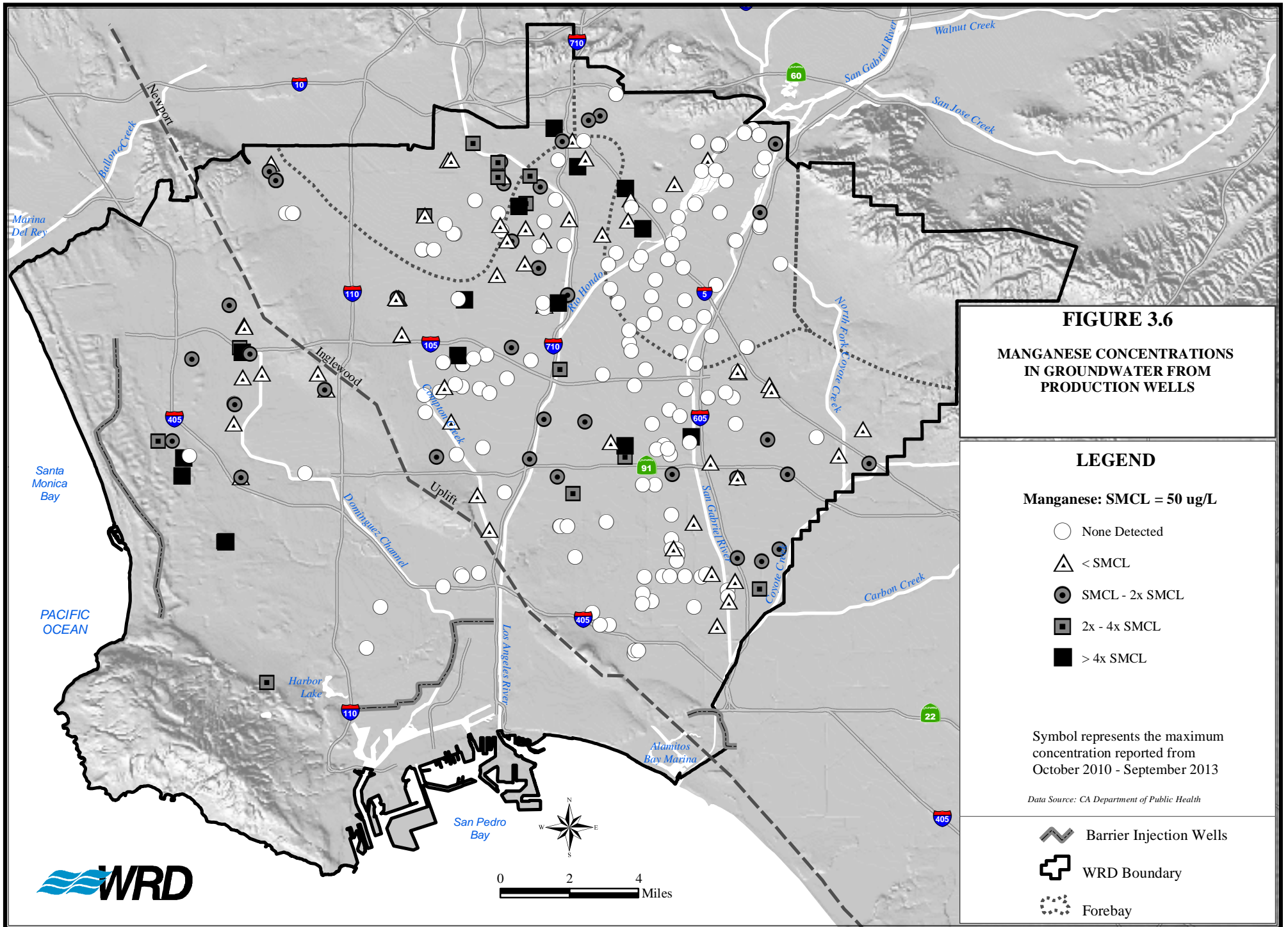
Bold outline indicates zone in Silverado aquifer

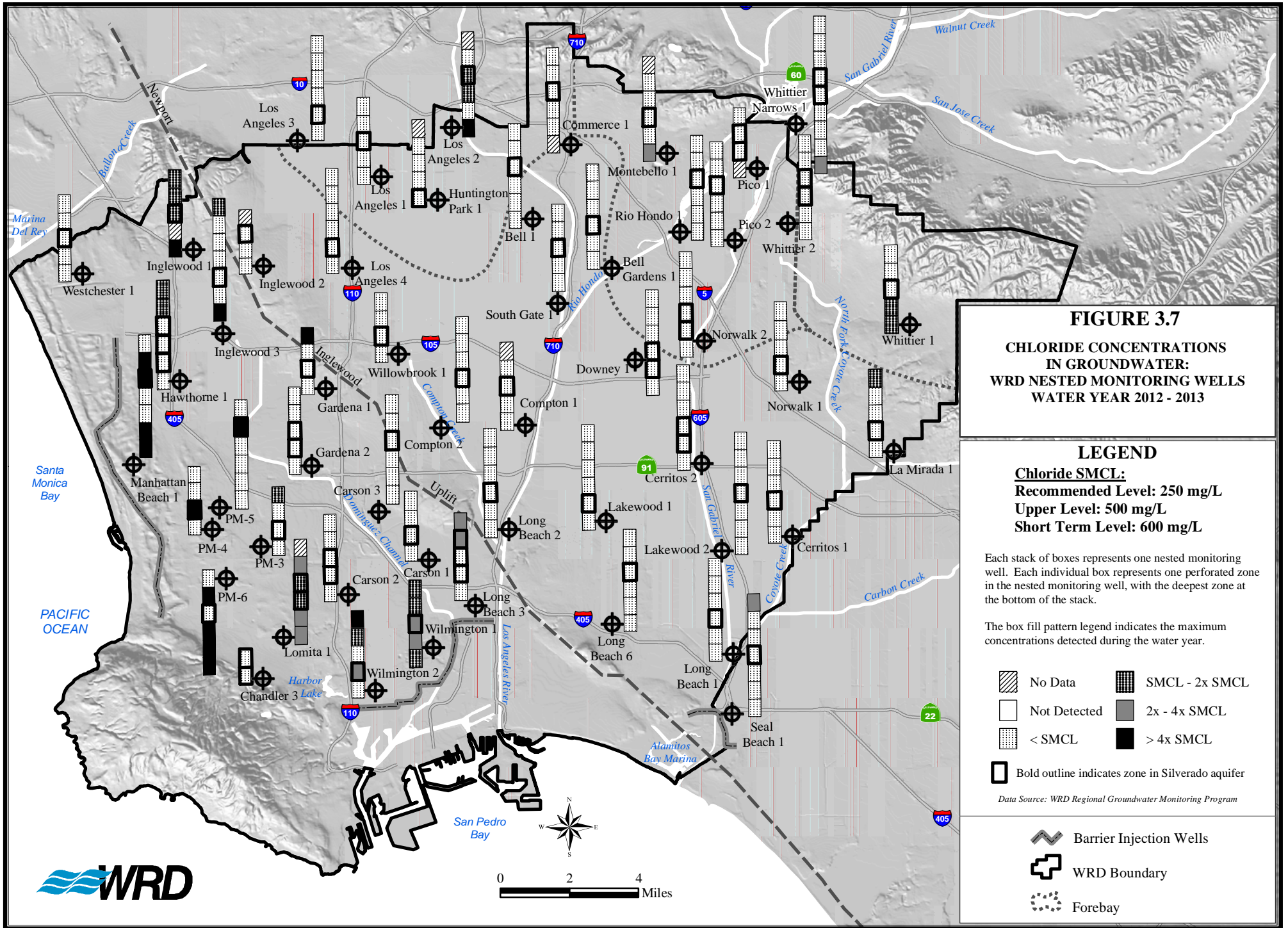
Data Source: WRD Regional Groundwater Monitoring Program

- Barrier Injection Wells
- WRD Boundary
- Forebay









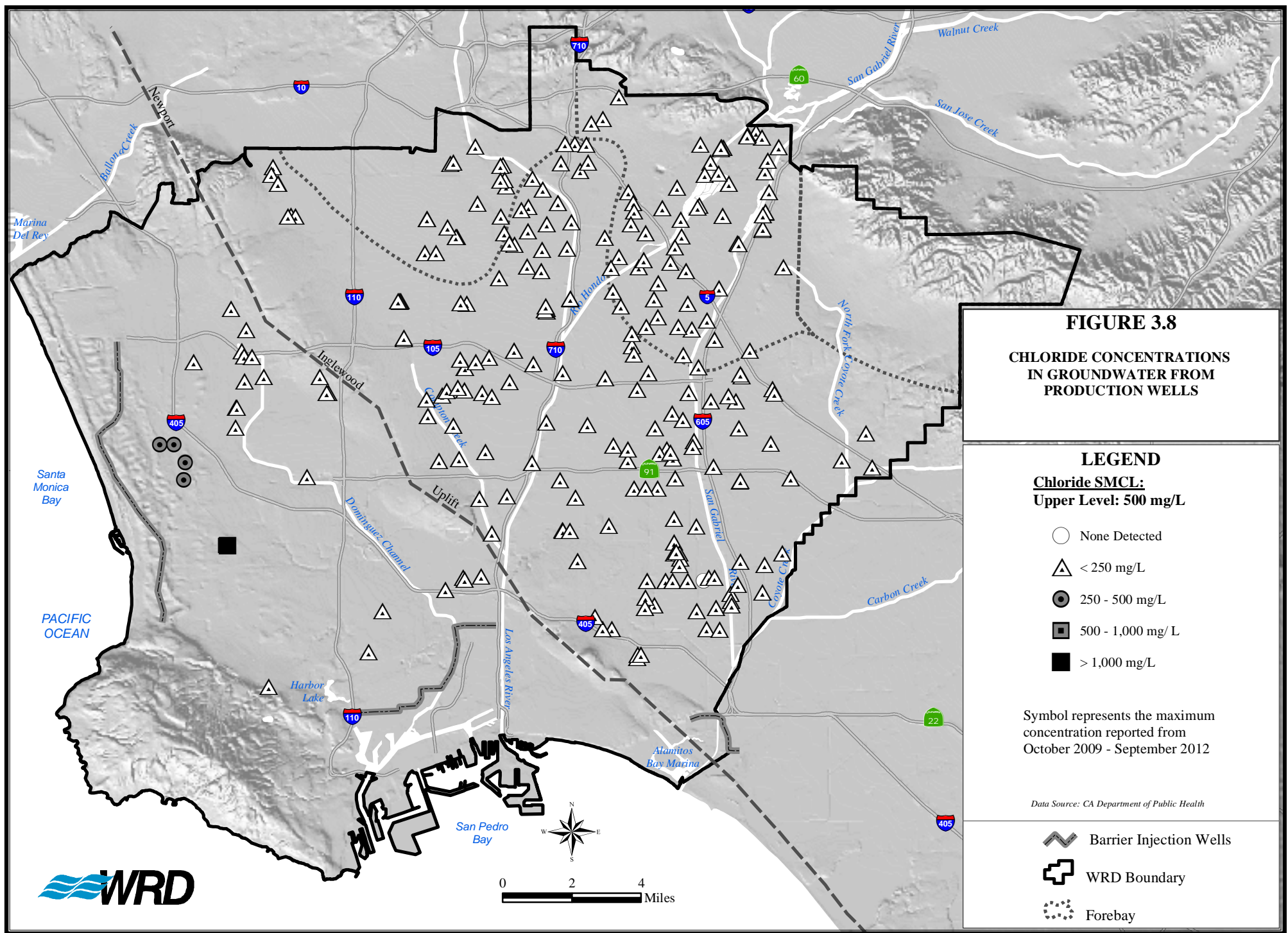


FIGURE 3.8
CHLORIDE CONCENTRATIONS
IN GROUNDWATER FROM
PRODUCTION WELLS

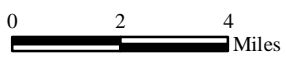
LEGEND
Chloride SMCL:
Upper Level: 500 mg/L

- None Detected
- △ < 250 mg/L
- 250 - 500 mg/L
- 500 - 1,000 mg/L
- > 1,000 mg/L

Symbol represents the maximum concentration reported from October 2009 - September 2012

Data Source: CA Department of Public Health

- ⚡ Barrier Injection Wells
- ⊕ WRD Boundary
- ⋯ Forebay



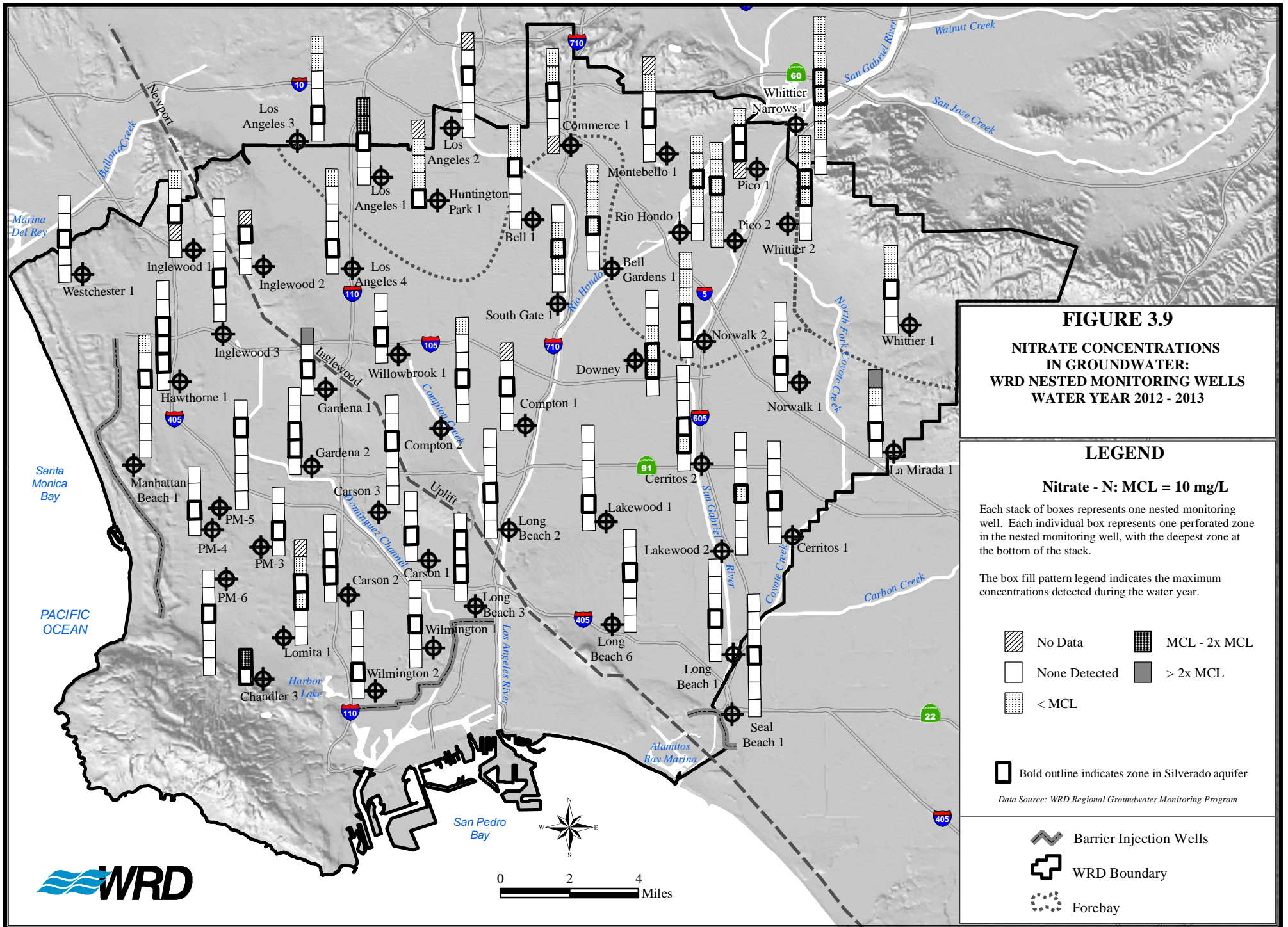


FIGURE 3.9
NITRATE CONCENTRATIONS
IN GROUNDWATER:
WRD NESTED MONITORING WELLS
WATER YEAR 2012 - 2013

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.

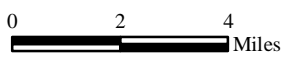
The box fill pattern legend indicates the maximum concentrations detected during the water year.

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

Bold outline indicates zone in Silverado aquifer

Data Source: WRD Regional Groundwater Monitoring Program

	Barrier Injection Wells
	WRD Boundary
	Forebay



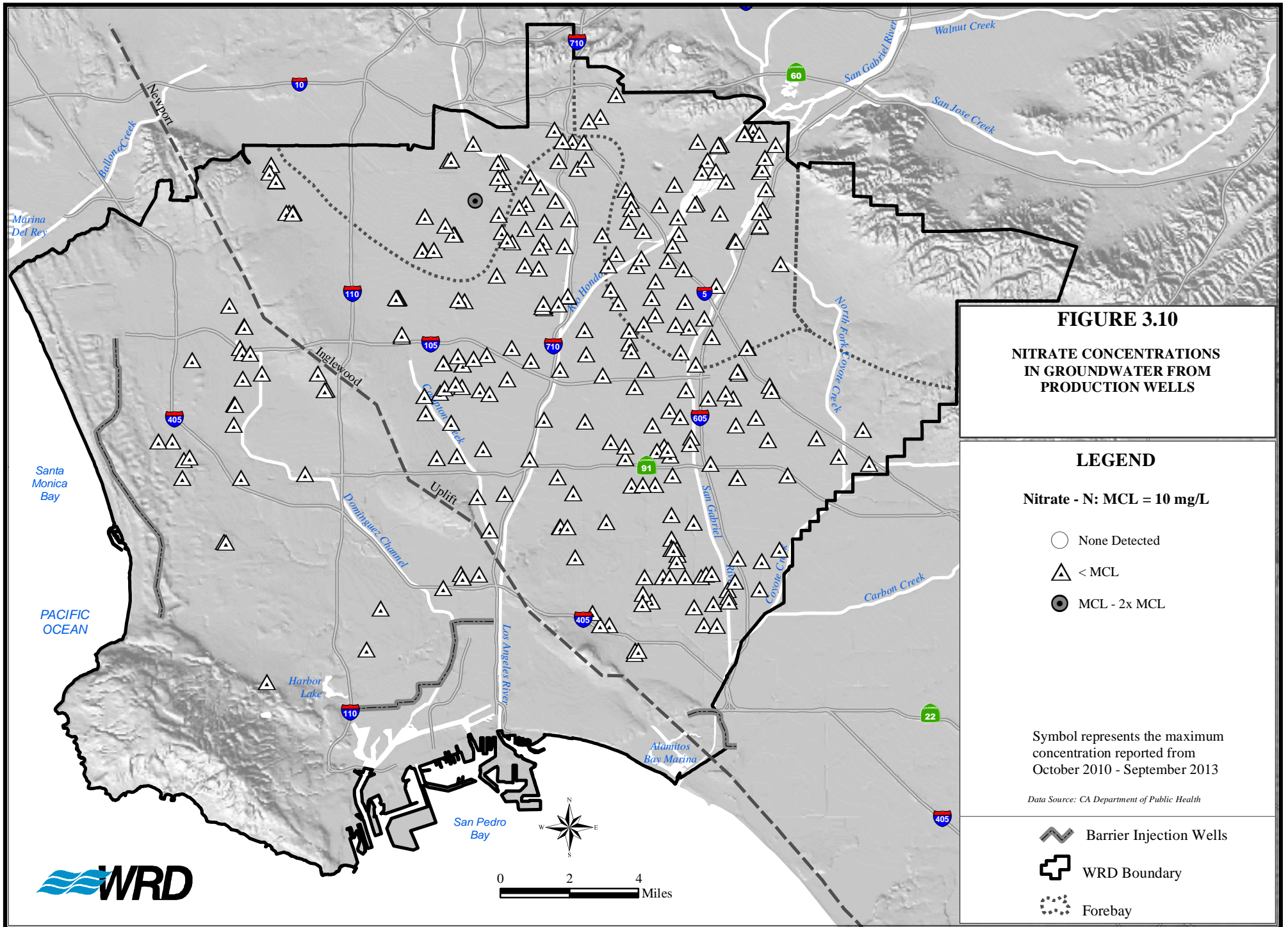


FIGURE 3.10

**NITRATE CONCENTRATIONS
IN GROUNDWATER FROM
PRODUCTION WELLS**

LEGEND

Nitrate - N: MCL = 10 mg/L

○ None Detected

△ < MCL

● MCL - 2x MCL

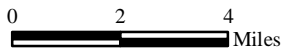
Symbol represents the maximum concentration reported from October 2010 - September 2013

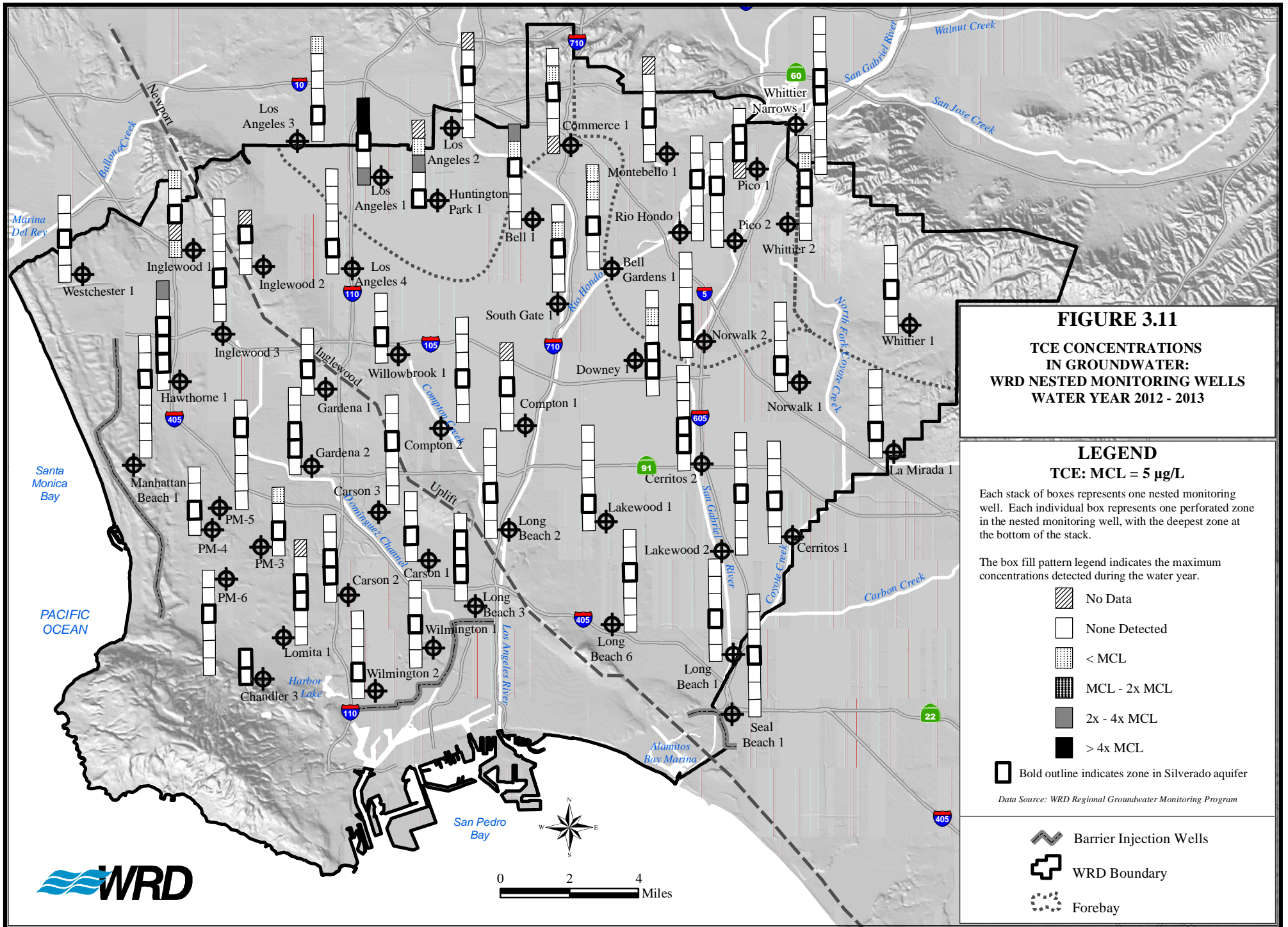
Data Source: CA Department of Public Health

Barrier Injection Wells

WRD Boundary

Forebay





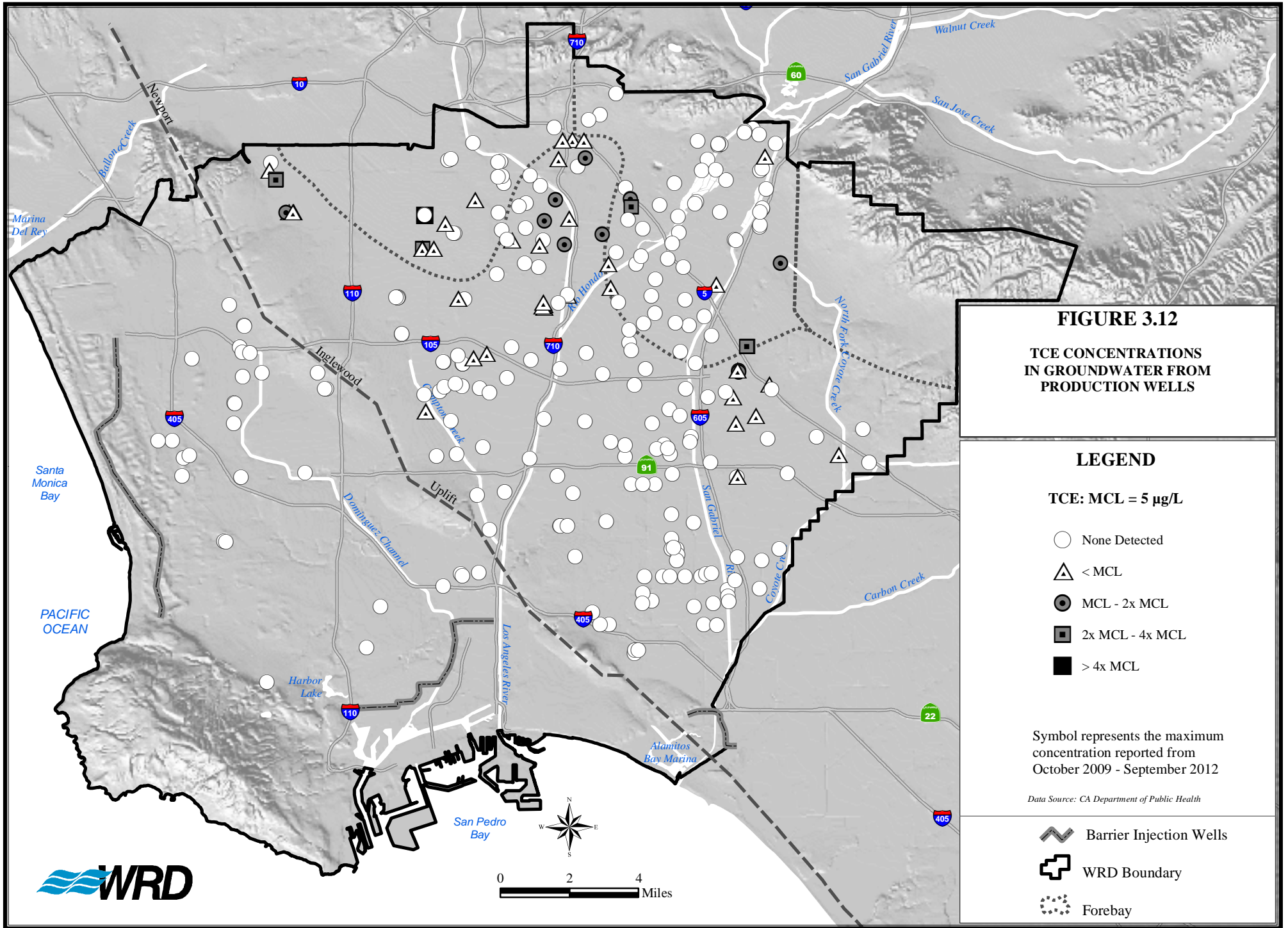


FIGURE 3.12
TCE CONCENTRATIONS
IN GROUNDWATER FROM
PRODUCTION WELLS

LEGEND

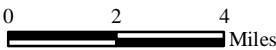
TCE: MCL = 5 µg/L

- None Detected
- △ < MCL
- MCL - 2x MCL
- 2x MCL - 4x MCL
- > 4x MCL

Symbol represents the maximum concentration reported from October 2009 - September 2012

Data Source: CA Department of Public Health

- ⚡ Barrier Injection Wells
- ⊕ WRD Boundary
- ⋯ Forebay



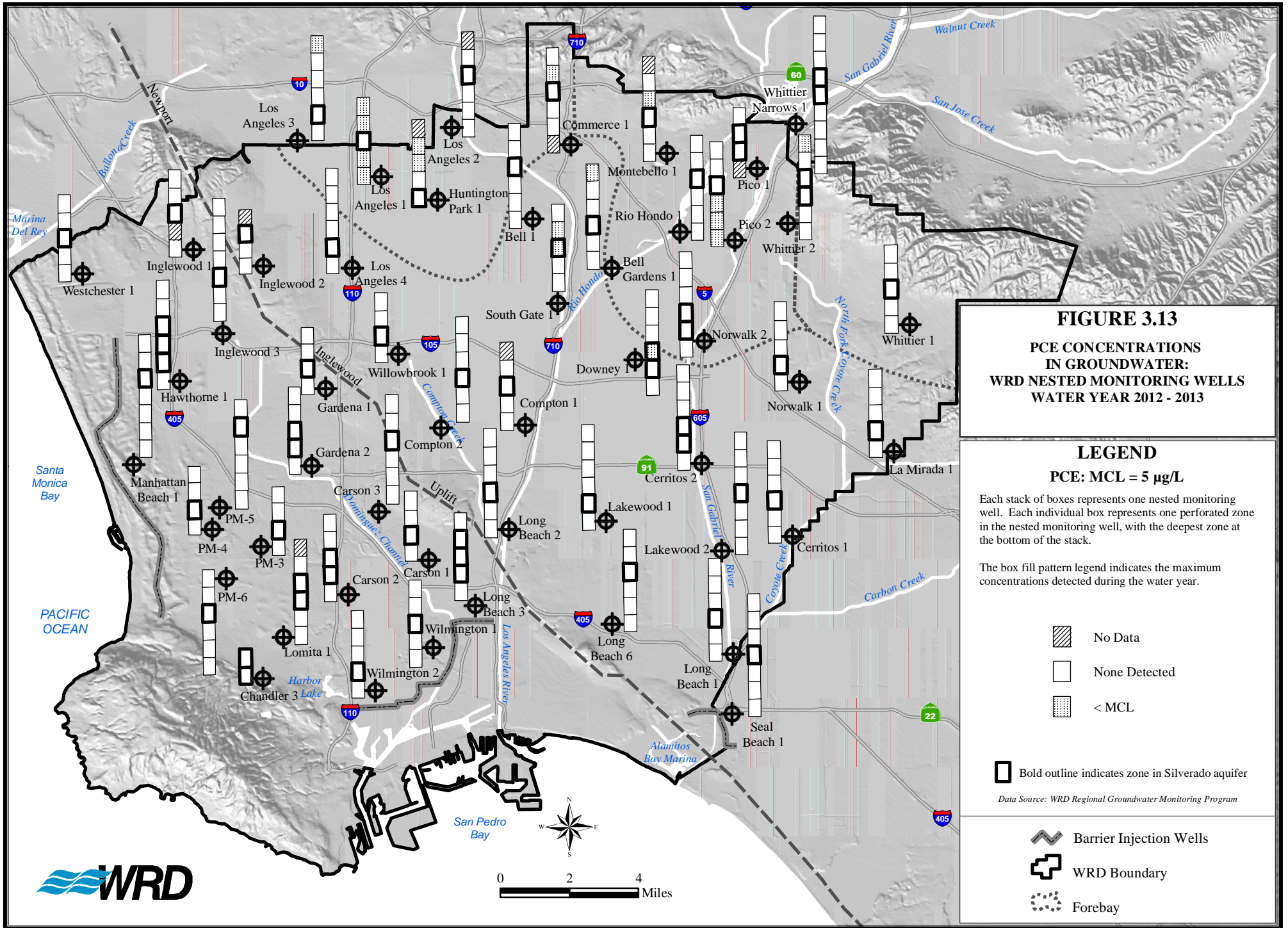









FIGURE 3.13
PCE CONCENTRATIONS
IN GROUNDWATER:
WRD NESTED MONITORING WELLS
WATER YEAR 2012 - 2013

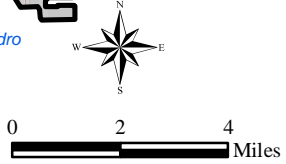
LEGEND
PCE: MCL = 5 µg/L

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

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

-  No Data
 -  None Detected
 -  < MCL
 -  Bold outline indicates zone in Silverado aquifer
- Data Source: WRD Regional Groundwater Monitoring Program*

-  Barrier Injection Wells
-  WRD Boundary
-  Forebay



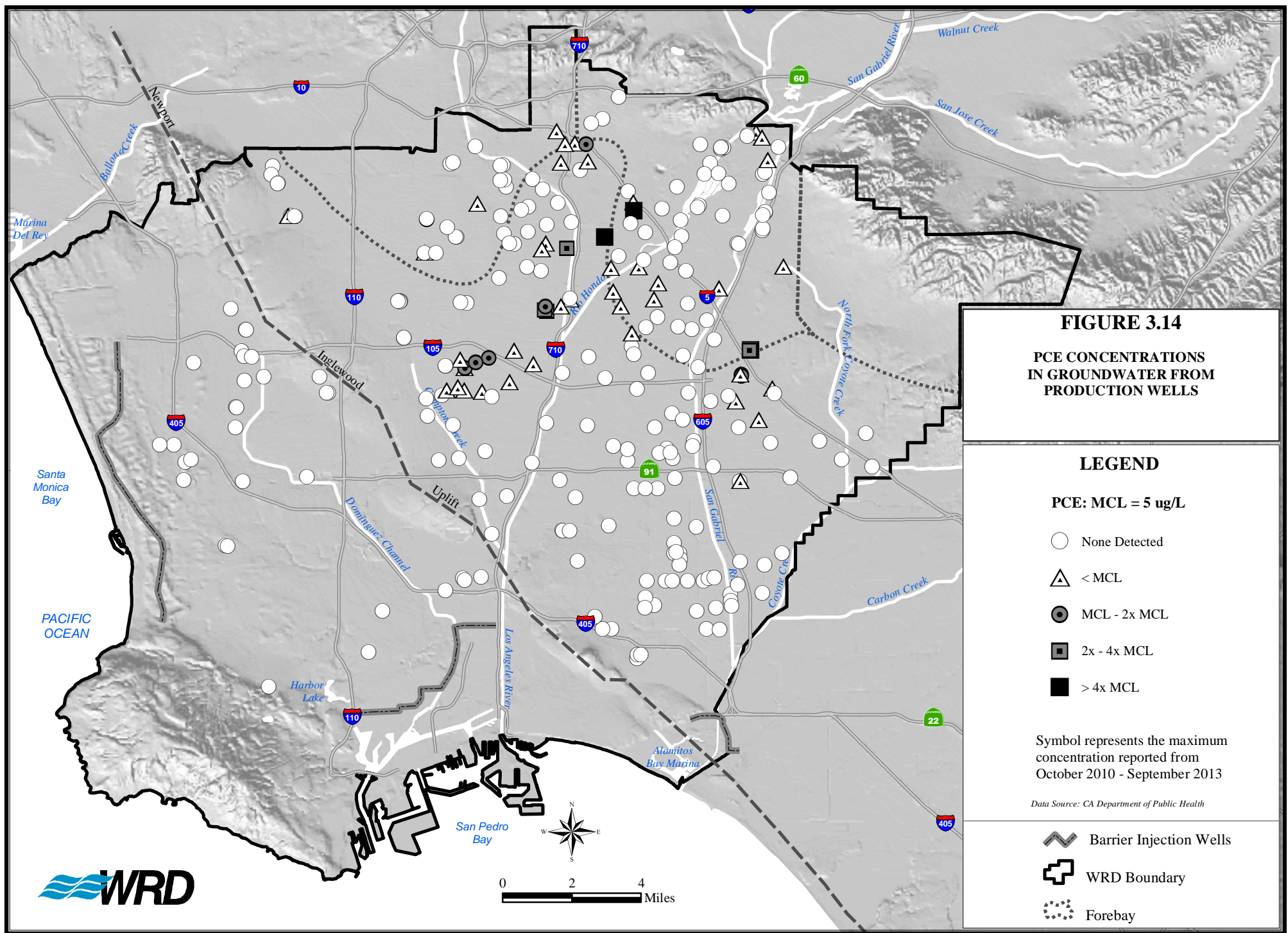


FIGURE 3.14
PCE CONCENTRATIONS
IN GROUNDWATER FROM
PRODUCTION WELLS

LEGEND

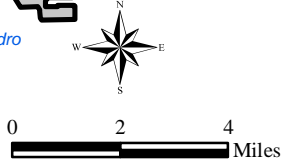
PCE: MCL = 5 ug/L

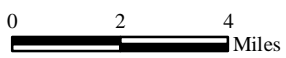
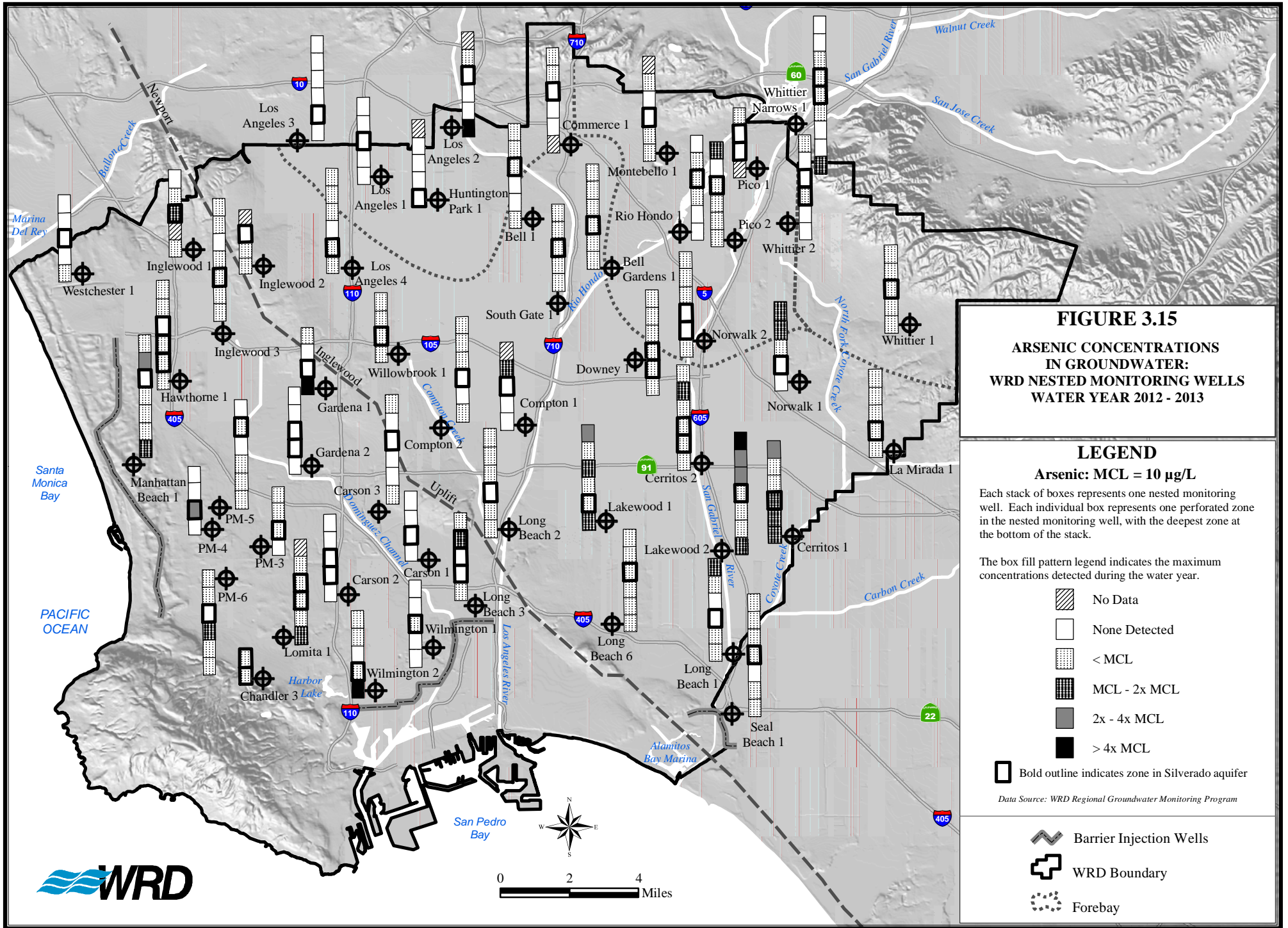
- None Detected
- △ < MCL
- ⊙ MCL - 2x MCL
- 2x - 4x MCL
- > 4x MCL

Symbol represents the maximum concentration reported from October 2010 - September 2013

Data Source: CA Department of Public Health

- ⌘ Barrier Injection Wells
- ⊕ WRD Boundary
- ⋯ Forebay





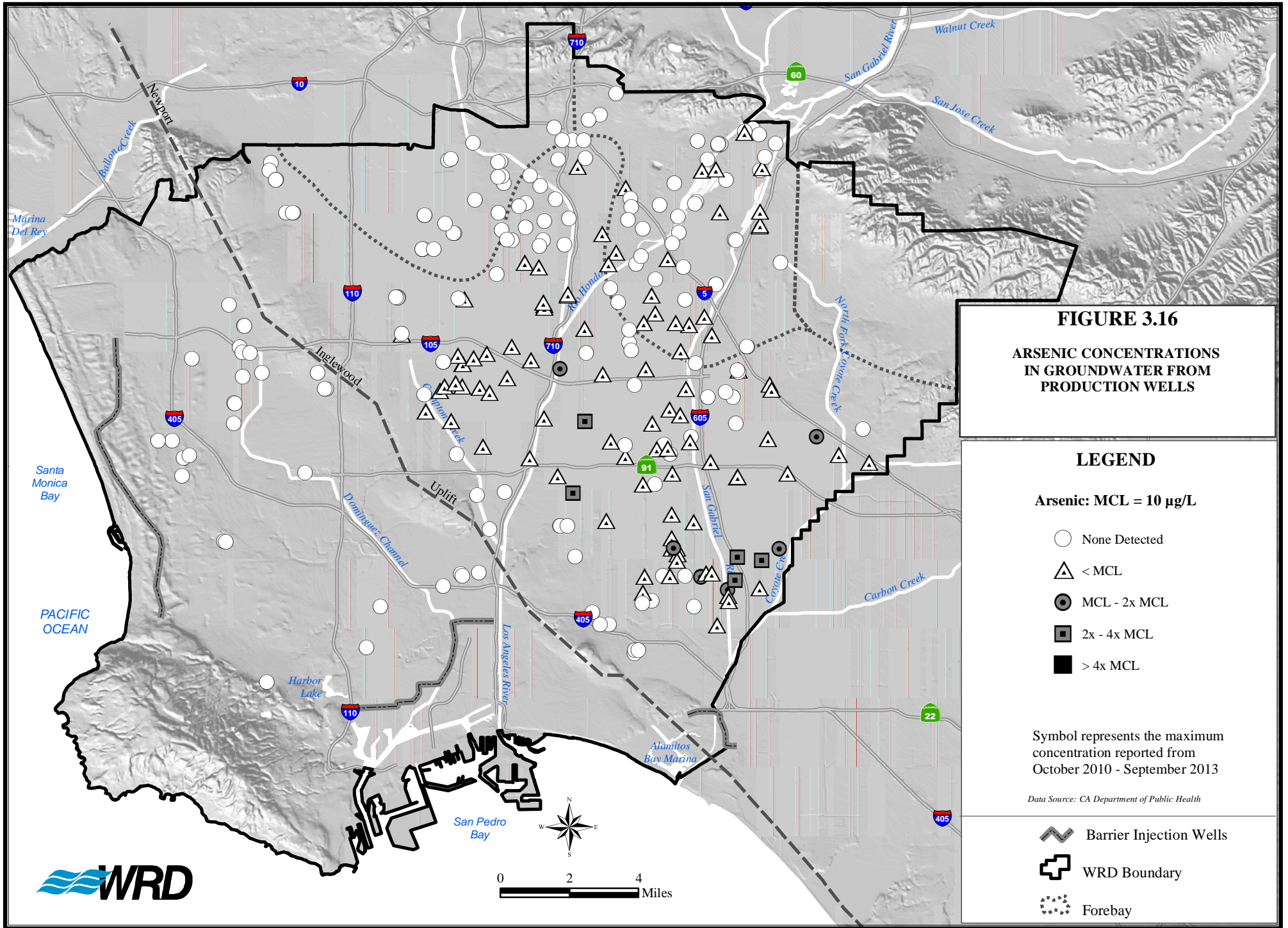


FIGURE 3.16
ARSENIC CONCENTRATIONS
IN GROUNDWATER FROM
PRODUCTION WELLS

LEGEND

Arsenic: MCL = 10 µg/L

- None Detected
- △ < MCL
- ◉ MCL - 2x MCL
- ◻ 2x - 4x MCL
- ◼ > 4x MCL

Symbol represents the maximum concentration reported from October 2010 - September 2013

Data Source: CA Department of Public Health

- Barrier Injection Wells
- ▣ WRD Boundary
- ⋯ Forebay

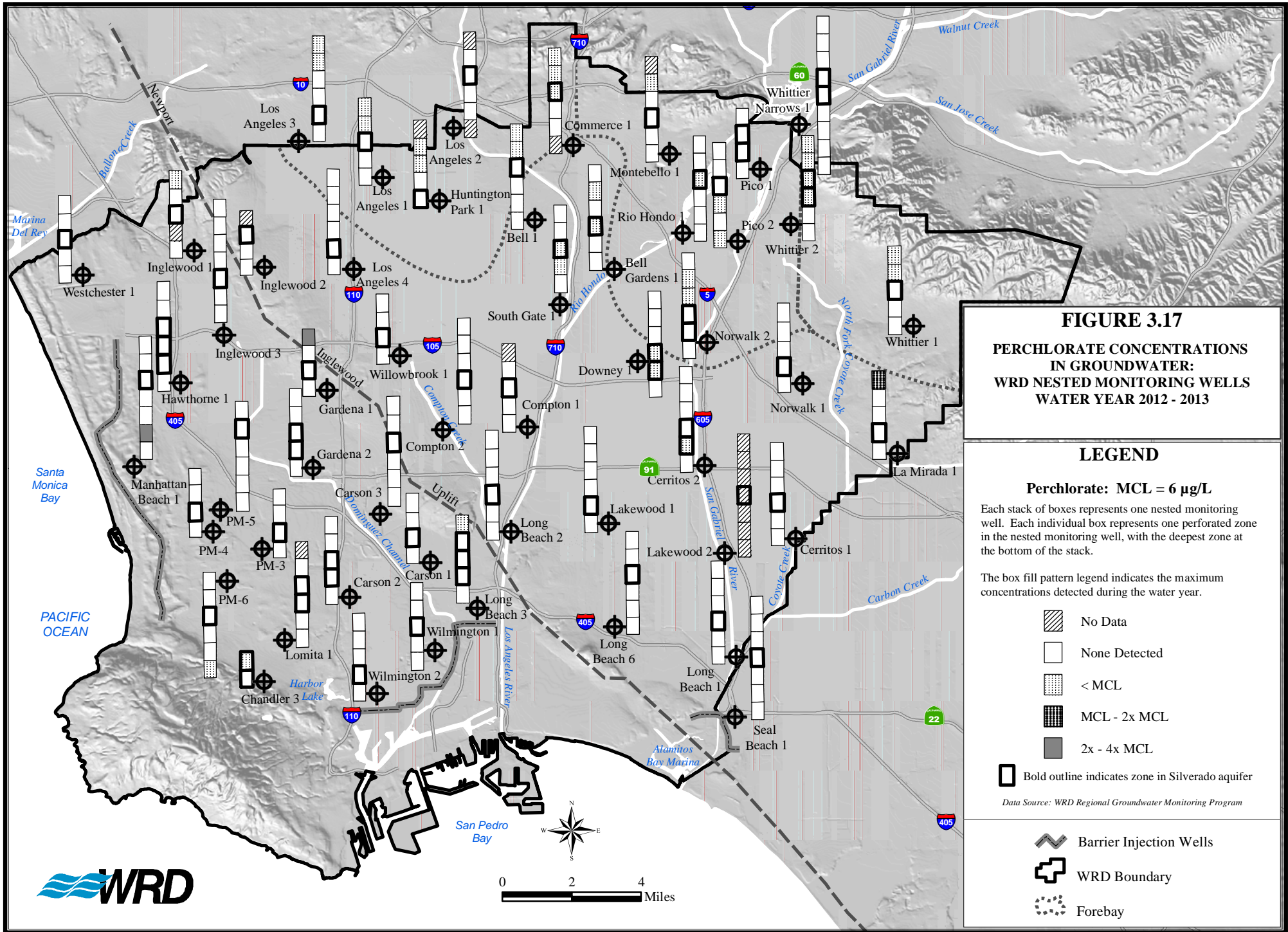


FIGURE 3.17
PERCHLORATE CONCENTRATIONS
IN GROUNDWATER:
WRD NESTED MONITORING WELLS
WATER YEAR 2012 - 2013

LEGEND

Perchlorate: MCL = 6 µg/L

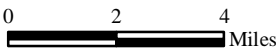
Each stack of boxes represents one nested monitoring well. Each individual box represents one perforated zone in the nested monitoring well, with the deepest zone at the bottom of the stack.

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

- No Data
- None Detected
- < MCL
- MCL - 2x MCL
- 2x - 4x MCL
- Bold outline indicates zone in Silverado aquifer

Data Source: WRD Regional Groundwater Monitoring Program

- Barrier Injection Wells
- WRD Boundary
- Forebay



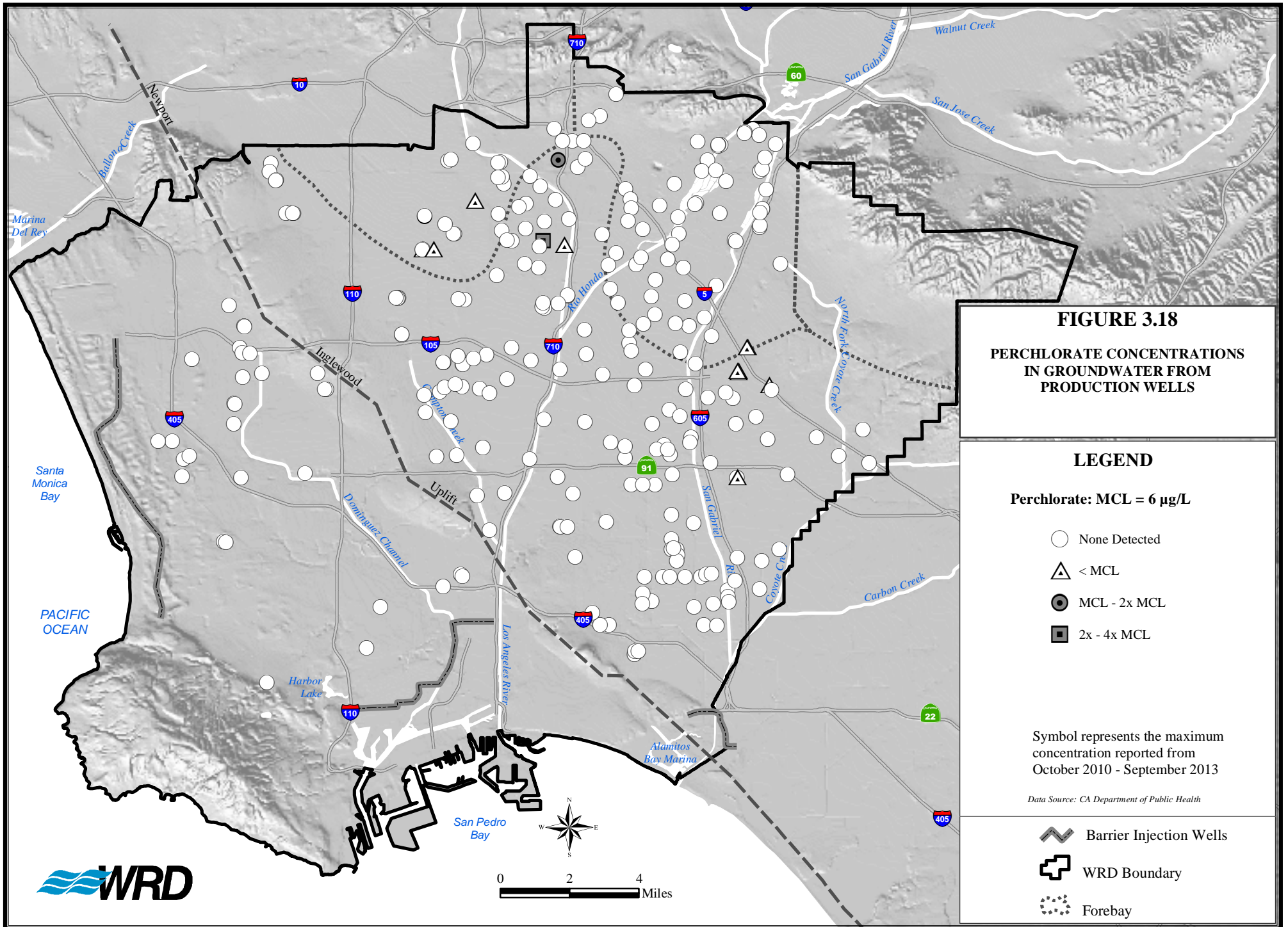


FIGURE 3.18

**PERCHLORATE CONCENTRATIONS
IN GROUNDWATER FROM
PRODUCTION WELLS**

LEGEND

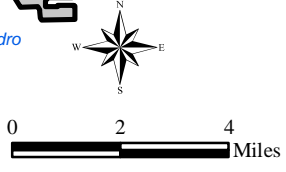
Perchlorate: MCL = 6 µg/L

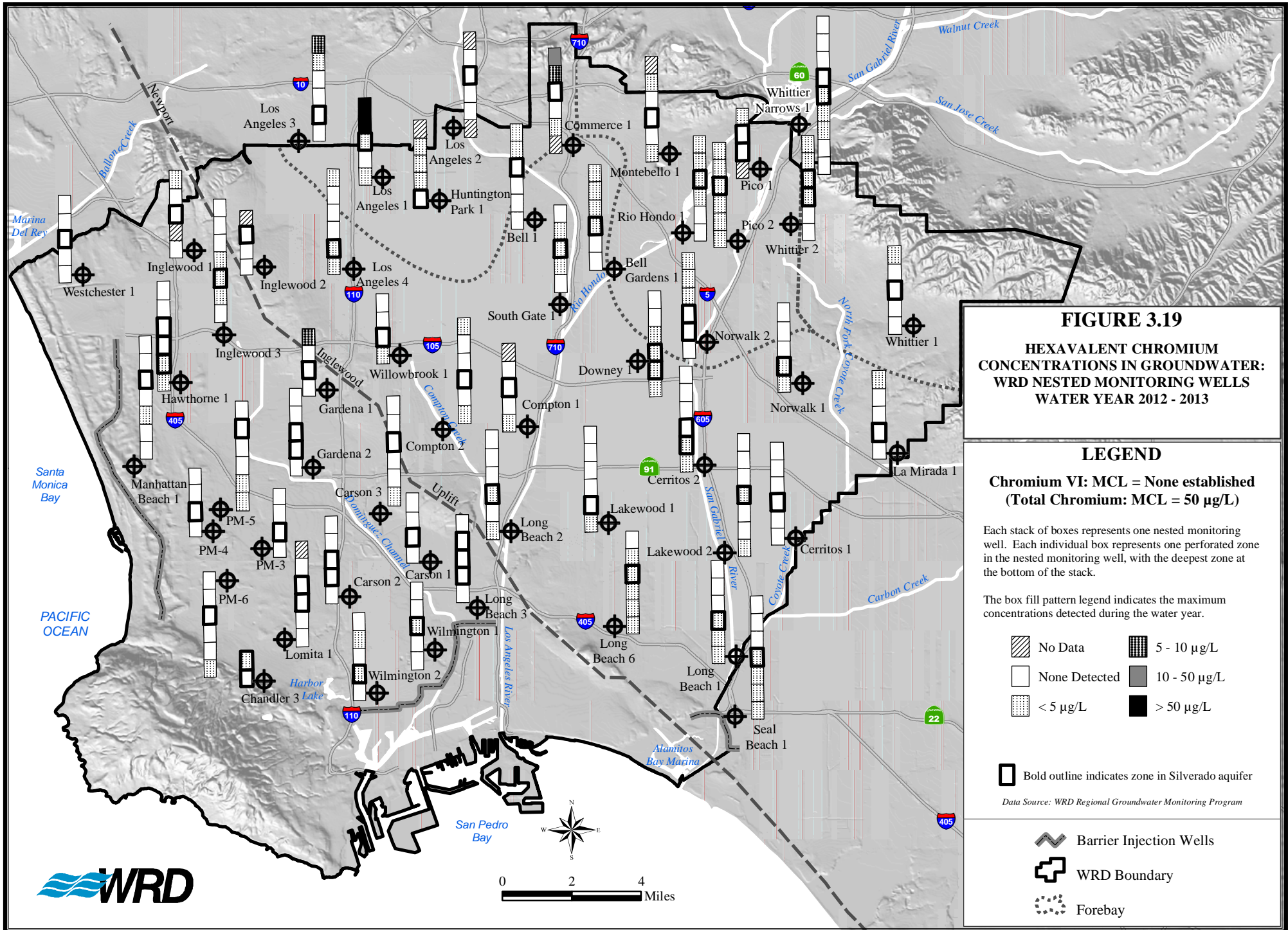
- None Detected
- △ < MCL
- MCL - 2x MCL
- 2x - 4x MCL

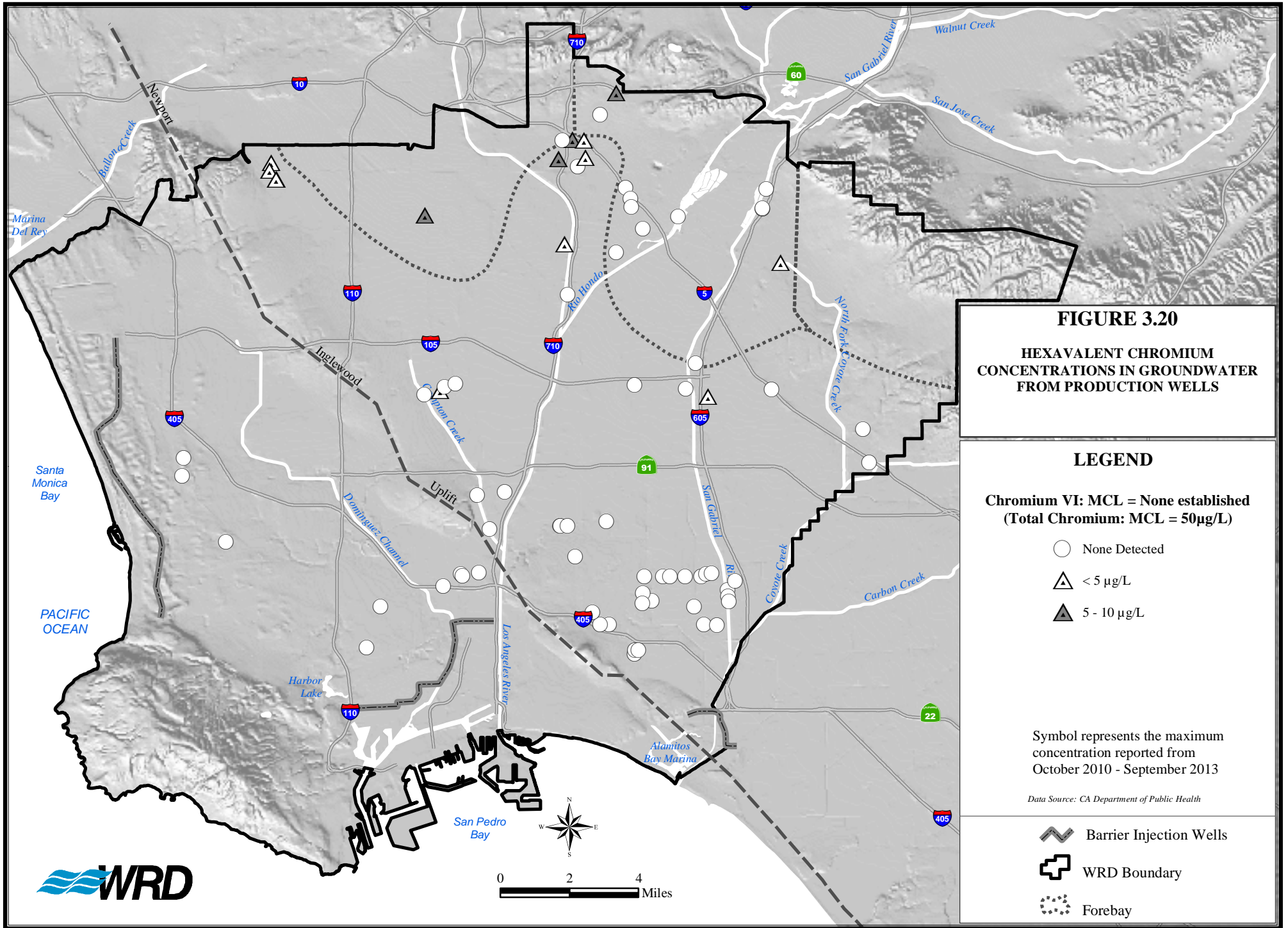
Symbol represents the maximum concentration reported from October 2010 - September 2013

Data Source: CA Department of Public Health

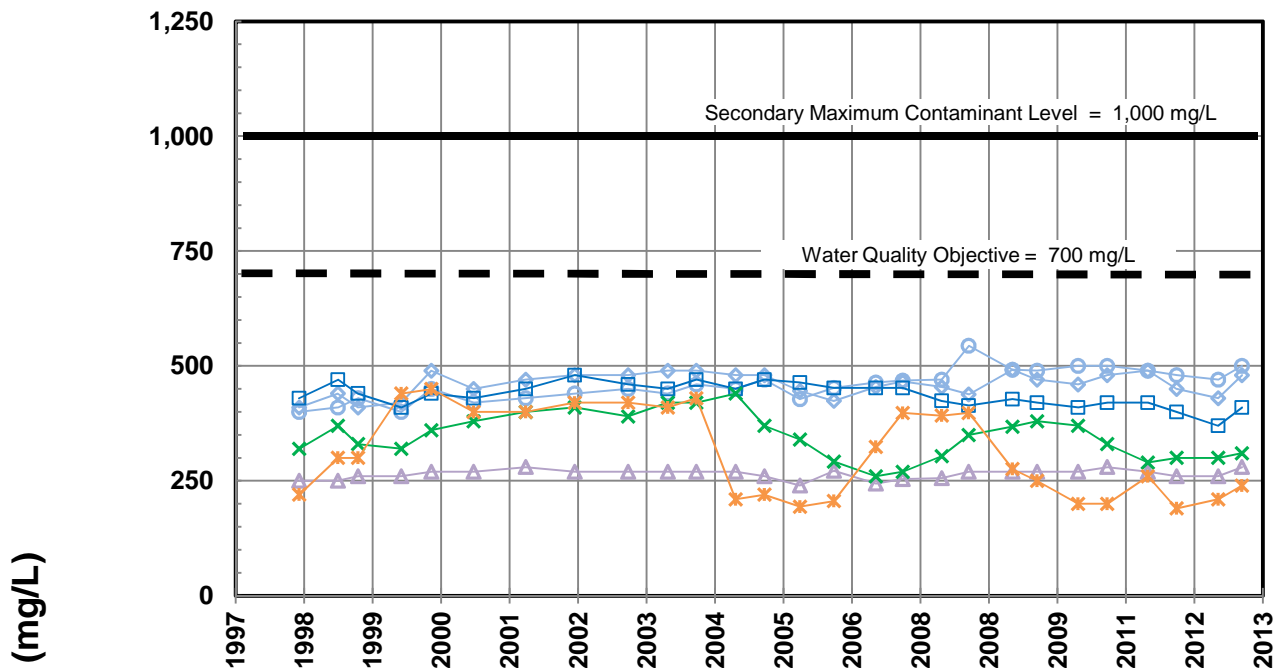
- Barrier Injection Wells
- ⊕ WRD Boundary
- ⋯ Forebay



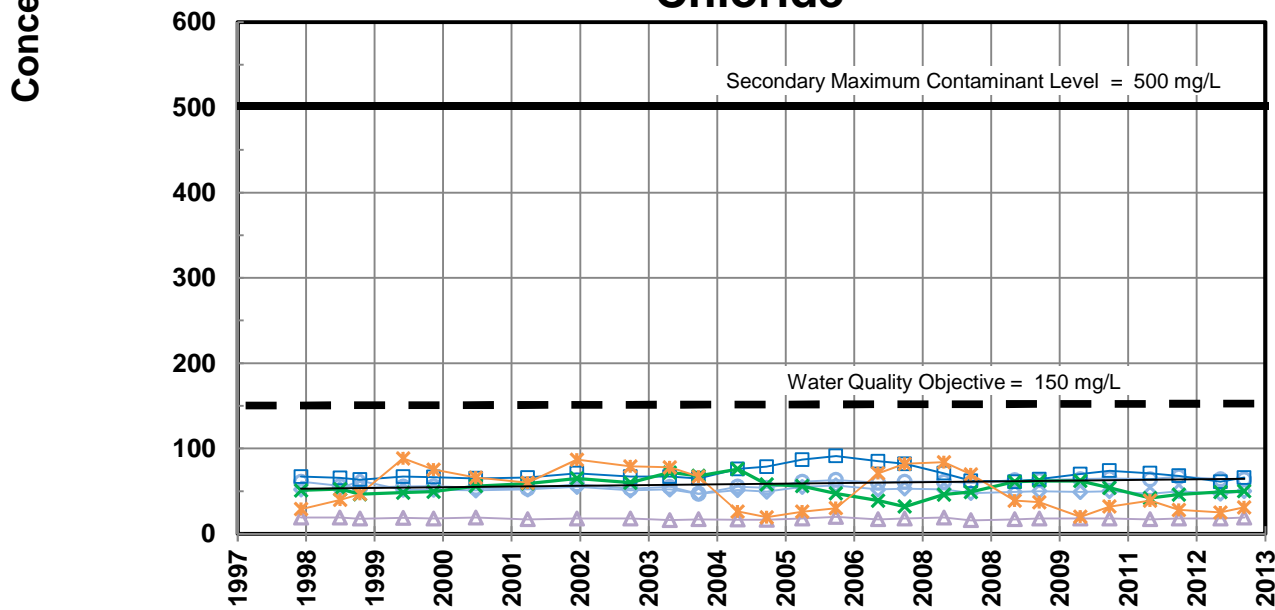




Total Dissolved Solids



Chloride

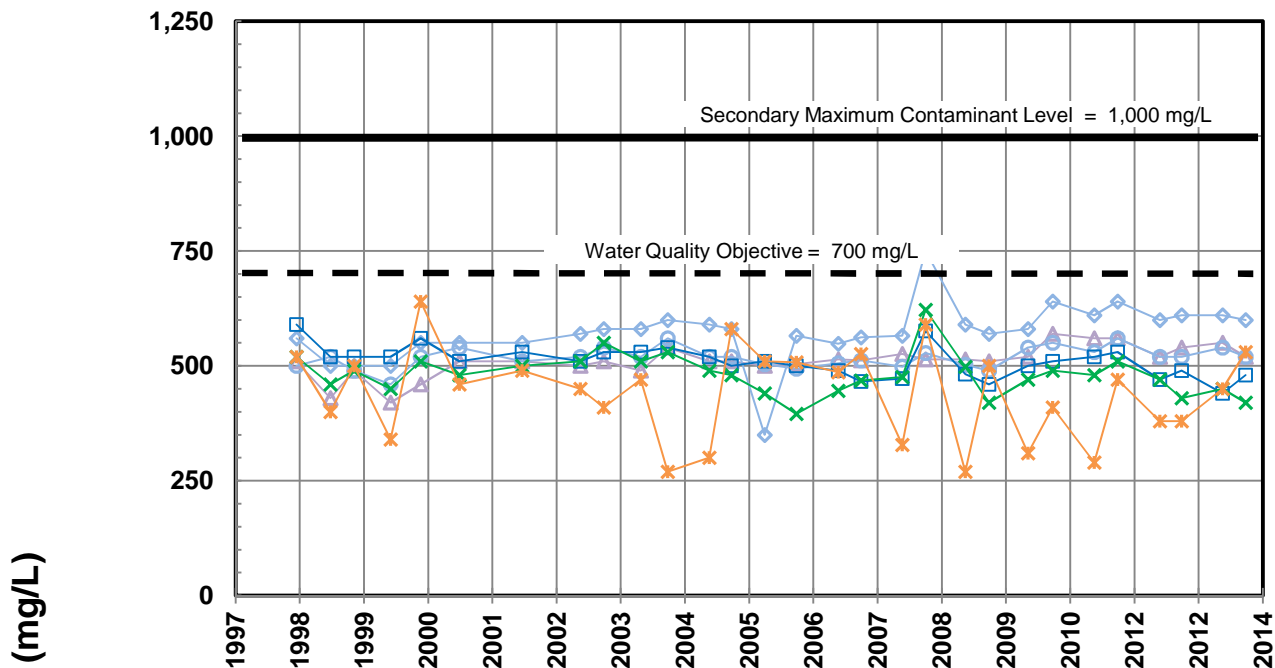


- △— Zone 1 (1110'-1130', Sunnyside)
- Zone 2 (910'-930', Sunnyside)
- Zone 3 (710'-730', Sunnyside)
- ◇— Zone 4 (430'-450', Silverado)
- ×— Zone 5 (280'-300', Lynwood)
- *— Zone 6 (140'-160', Gardena)
- Linear (Zone 3 (710'-730', Sunnyside))

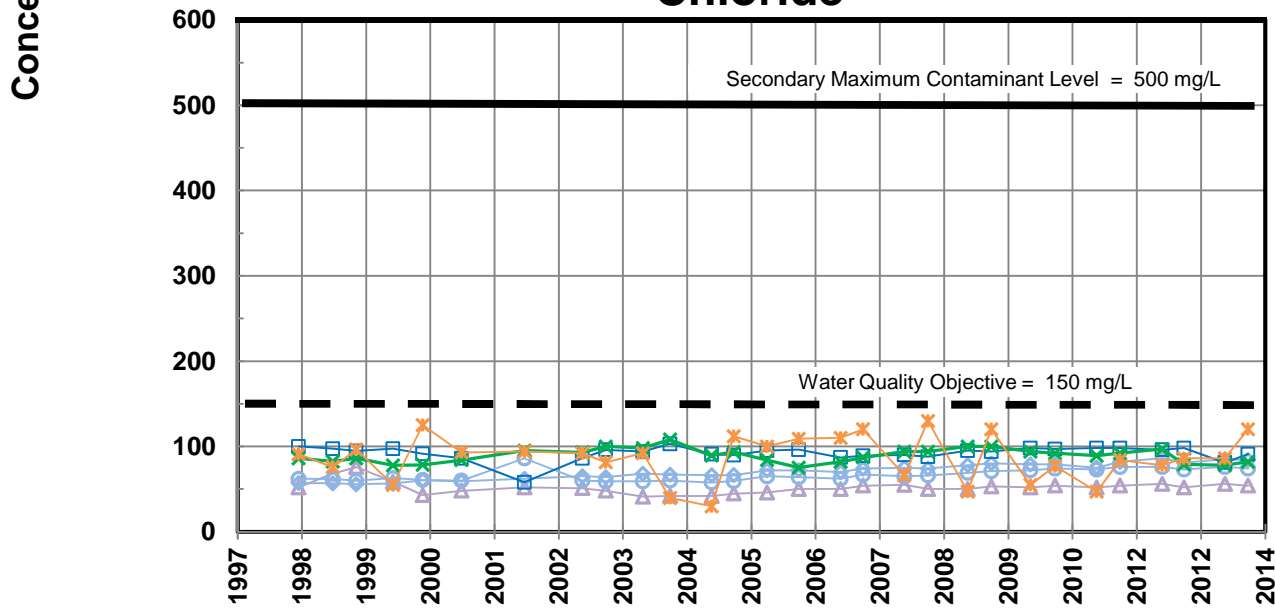
**WATER QUALITY CONCENTRATIONS IN
WRD KEY MONITORING WELL RIO HONDO #1**

FIGURE 4.1

Total Dissolved Solids



Chloride

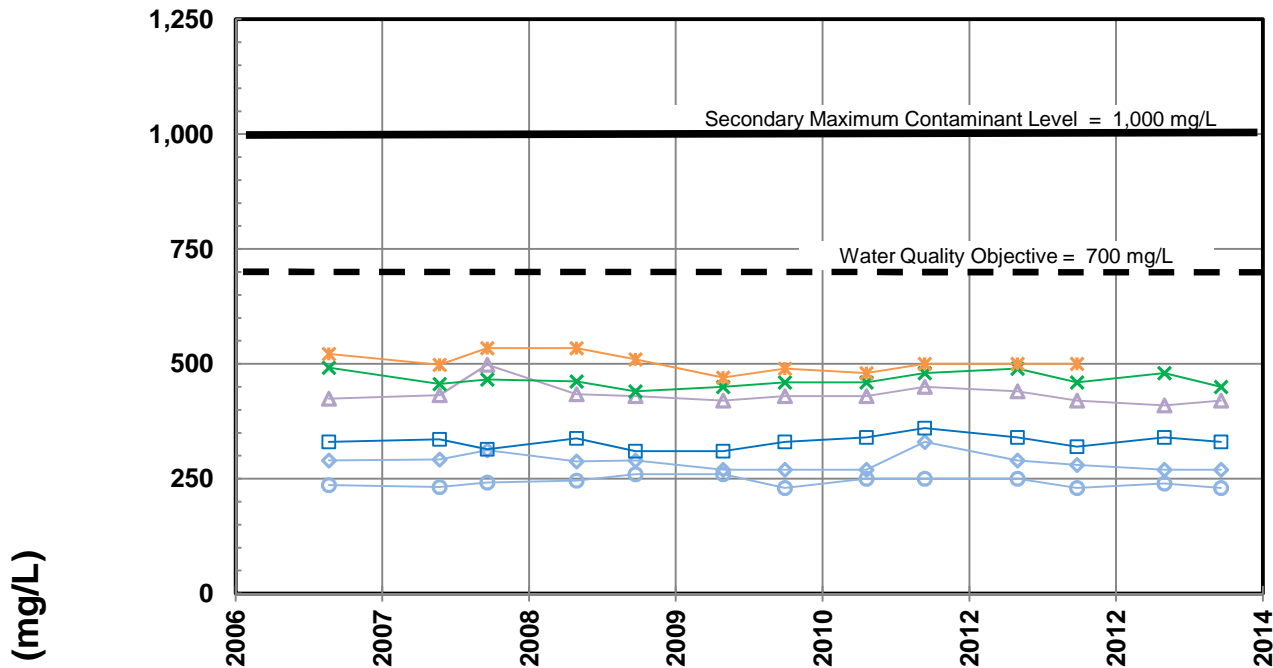


- ▲ Zone 1 (1180'-1200', Sunnyside)
- ◆ Zone 2 (830'-850', Sunnyside)
- Zone 3 (560'-580', Sunnyside)
- Zone 4 (320'-340', Silverado)
- ✱ Zone 5 (235'-255', Lynwood)
- ✱ Zone 6 (100'-120', Gaspar)

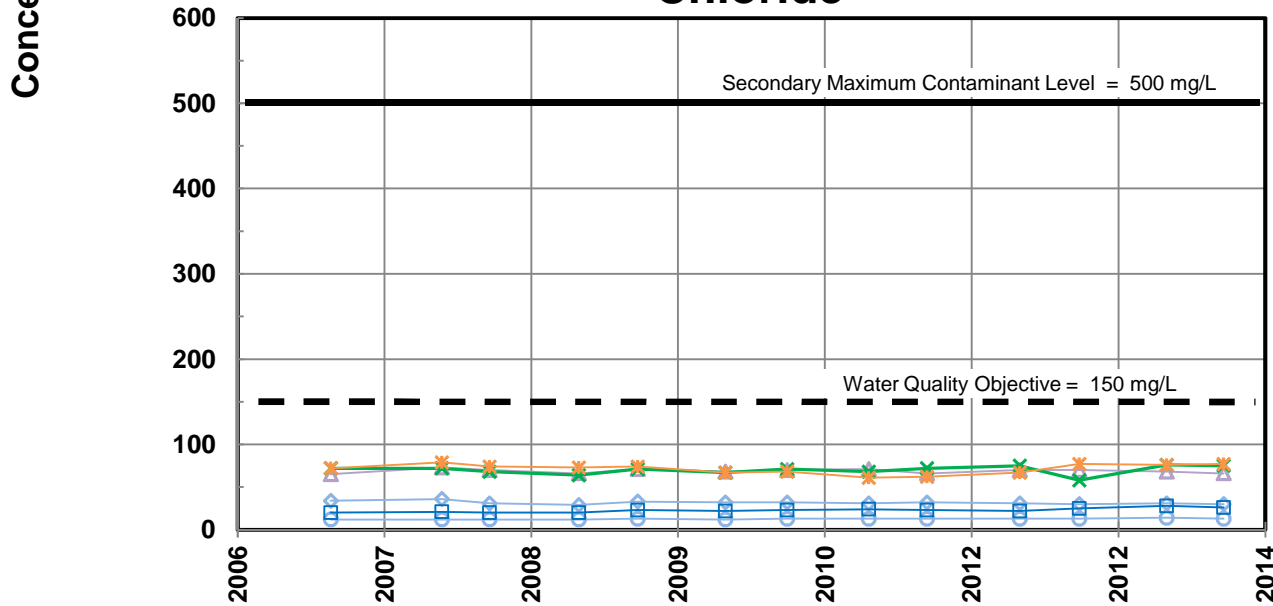
**WATER QUALITY CONCENTRATIONS IN
WRD KEY MONITORING WELL PICO #2**

FIGURE 4.2

Total Dissolved Solids



Chloride

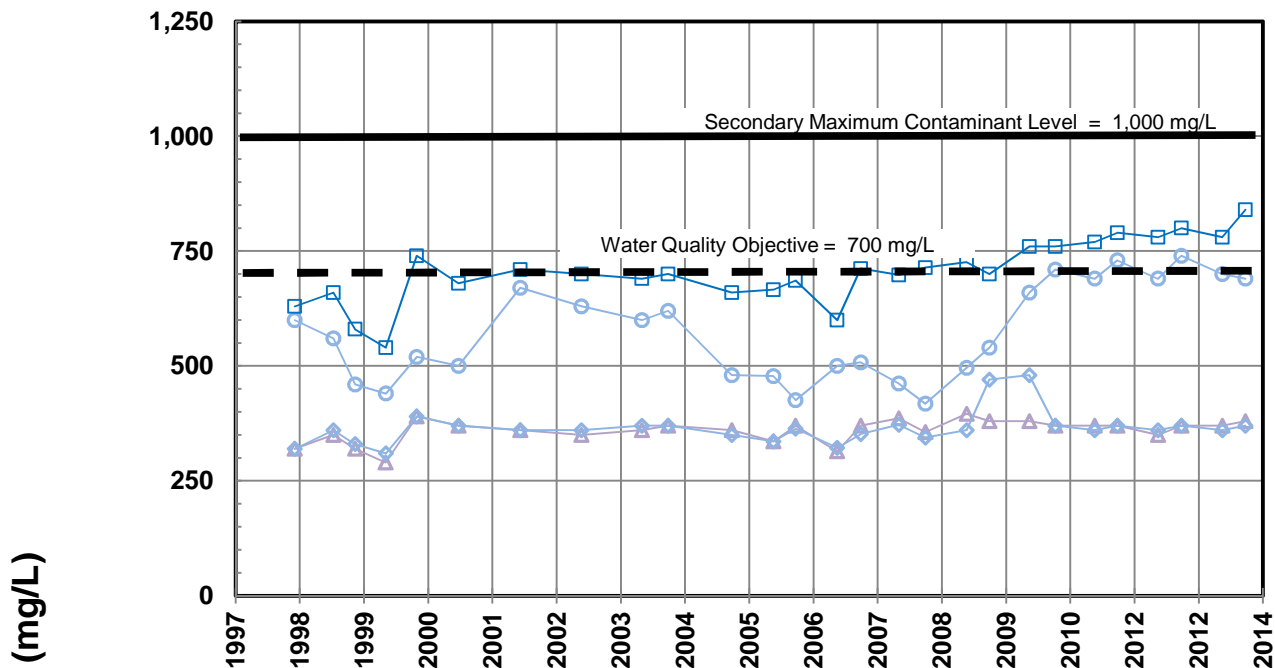


- ▲ Zone 1 (1460'-1480', Sunnyside)
- ◆ Zone 2 (1260'-1280', Sunnyside)
- Zone 3 (960'-980', Silverado)
- Zone 4 (800'-820', Lynwood)
- ✱ Zone 5 (480'-500', Gardena)
- ✱ Zone 6 (236'-256', Exposition)

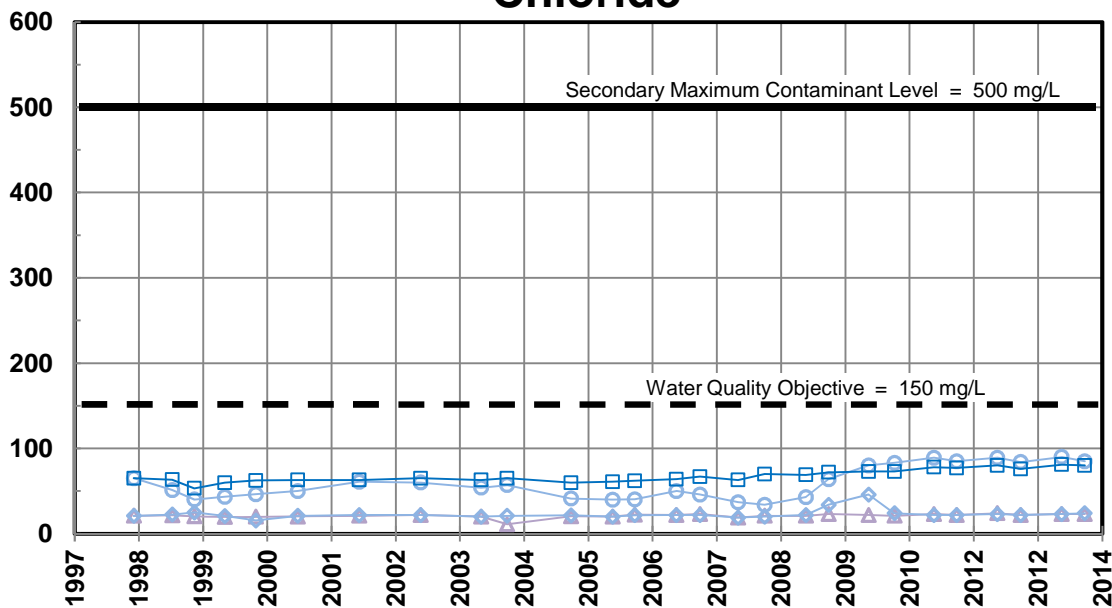
WATER QUALITY CONCENTRATIONS IN WRD KEY MONITORING WELL NORWALK #2

FIGURE 4.3

Total Dissolved Solids



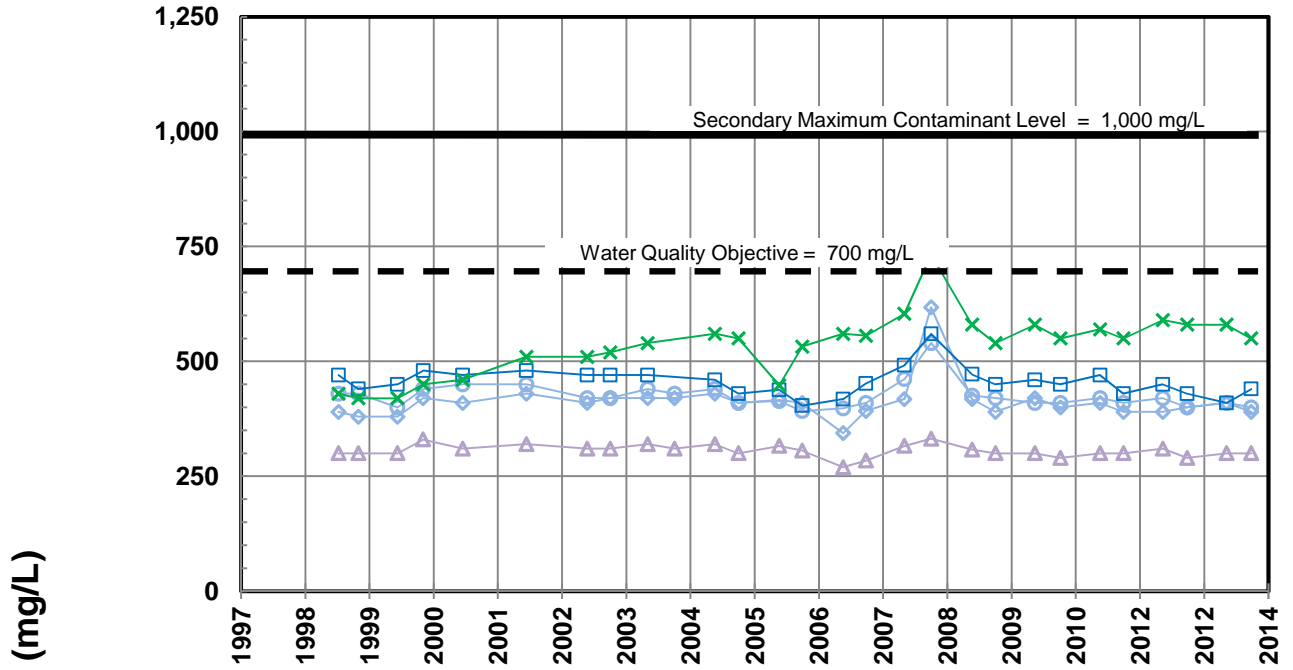
Chloride



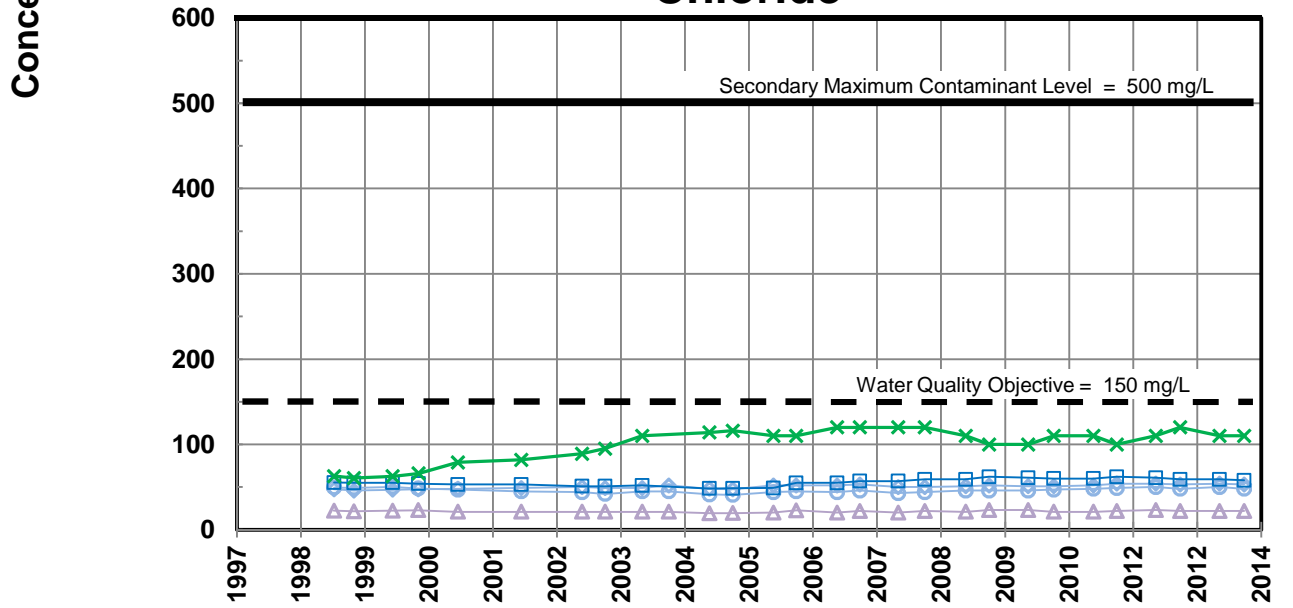
**WATER QUALITY CONCENTRATIONS IN
WRD KEY MONITORING WELL HUNTINGTON PARK #1**

FIGURE 4.4

Total Dissolved Solids



Chloride

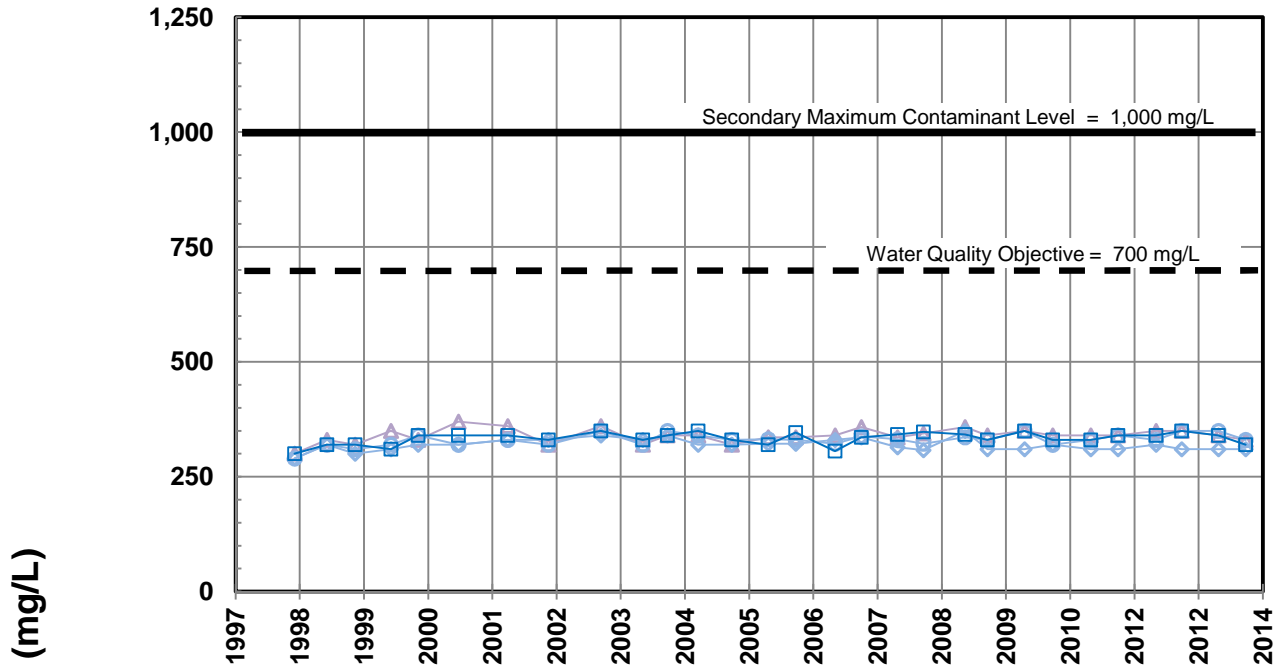


- ▲ Zone 1 (1440'-1460', Pico Formation)
 ◆ Zone 2 (1320'-1340', Sunnyside)
- Zone 3 (910'-930', Silverado)
 ◻ Zone 4 (565'-585', Lynwood)
- ✕ Zone 5 (220'-240', Exposition)

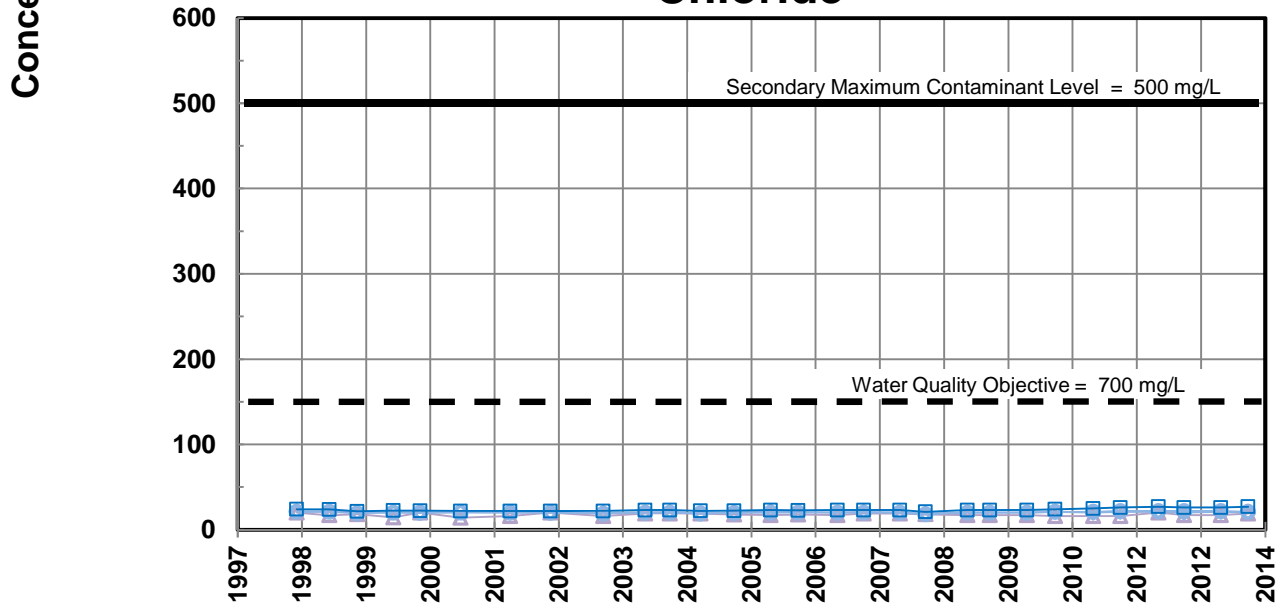
**WATER QUALITY CONCENTRATIONS IN
WRD KEY MONITORING WELL SOUTH GATE #1**

FIGURE 4.5

Total Dissolved Solids



Chloride

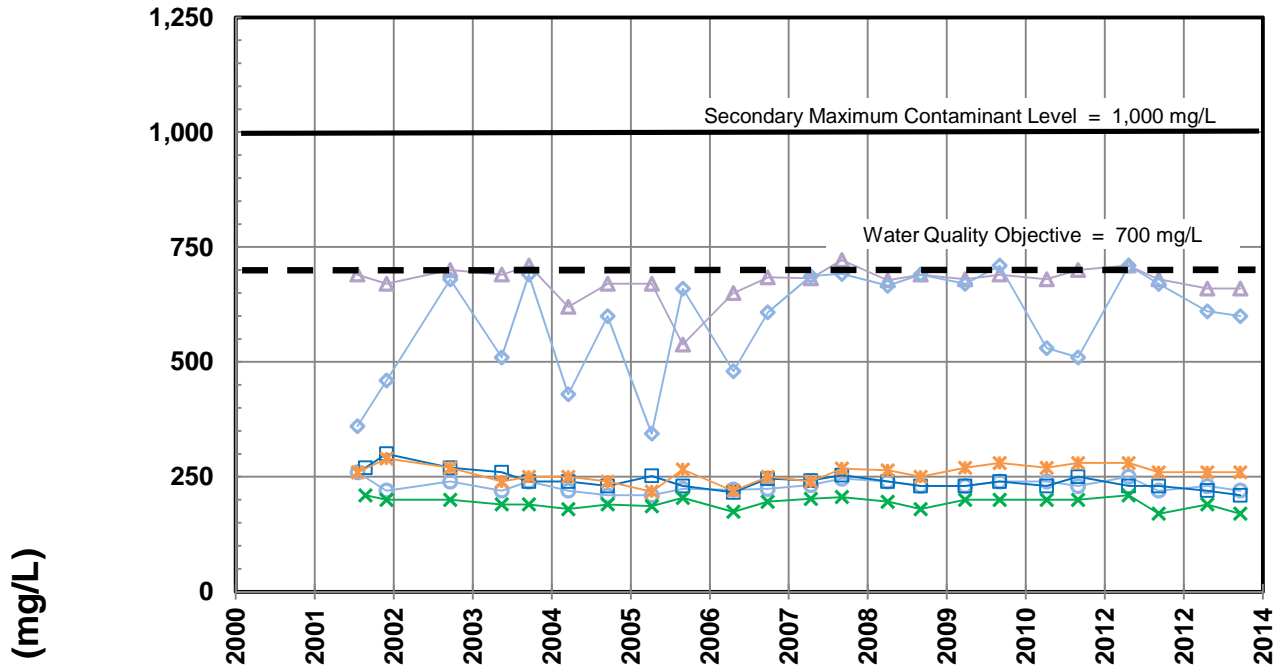


- ▲— Zone 1 (885'-905', Sunnyside)
- ◆— Zone 2 (500'-520', Silverado)
- Zone 3 (360'-380', Lynwood)
- Zone 4 (200'-220', Gage)

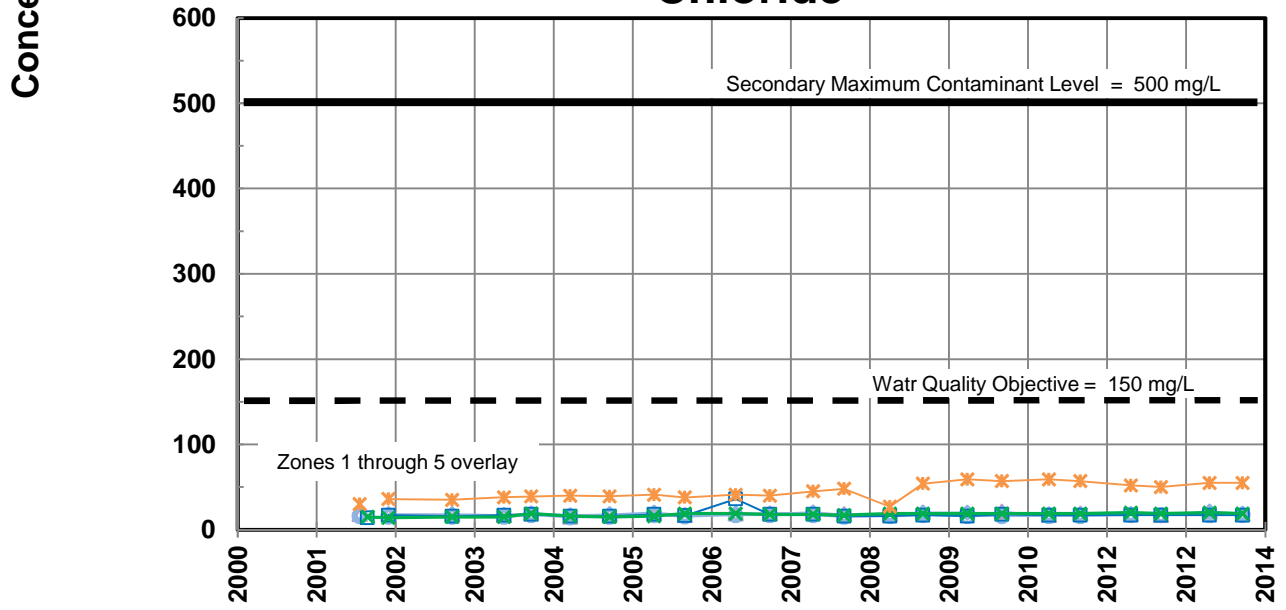
**WATER QUALITY CONCENTRATIONS IN
WRD KEY MONITORING WELL WILLOWBROOK#1**

FIGURE 4.6

Total Dissolved Solids



Chloride

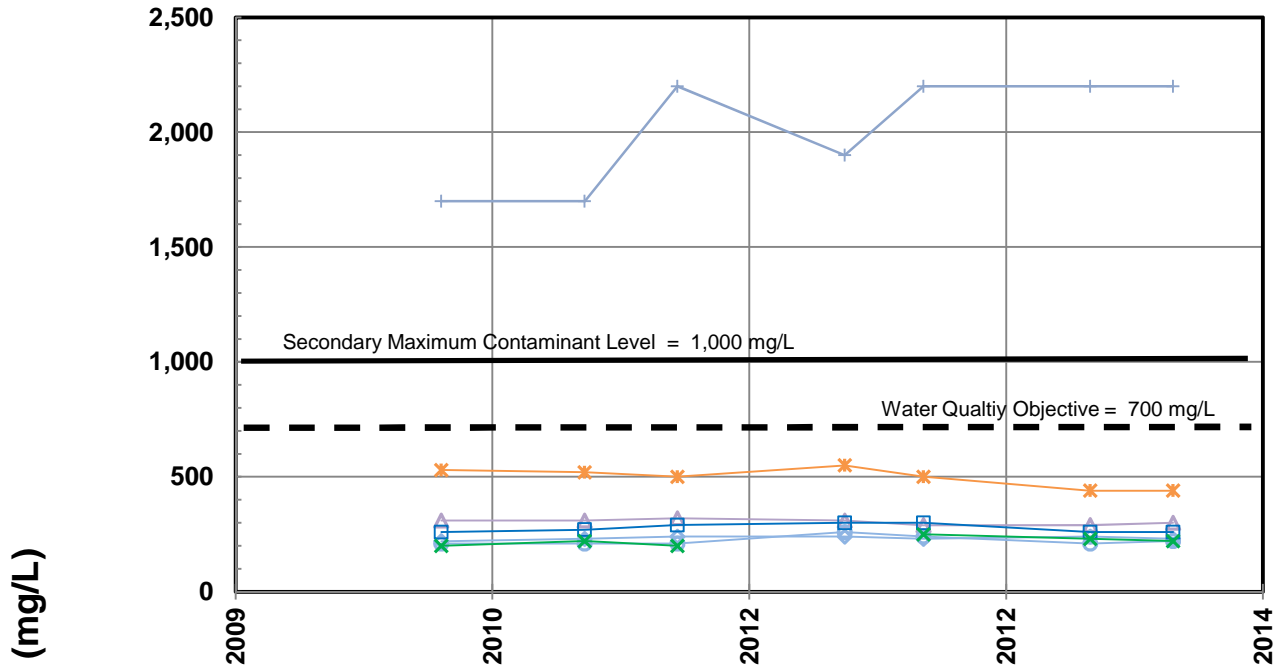


- ▲— Zone 1 (1490'-1510', Pico Formation)
- ◆— Zone 2 (930'-950', Sunnyside)
- Zone 3 (740'-760', Sunnyside)
- Zone 4 (480'-500', Silverado)
- ×— Zone 5 (380'-400', Lynwood)
- ★— Zone 6 (220'-240', Gage)

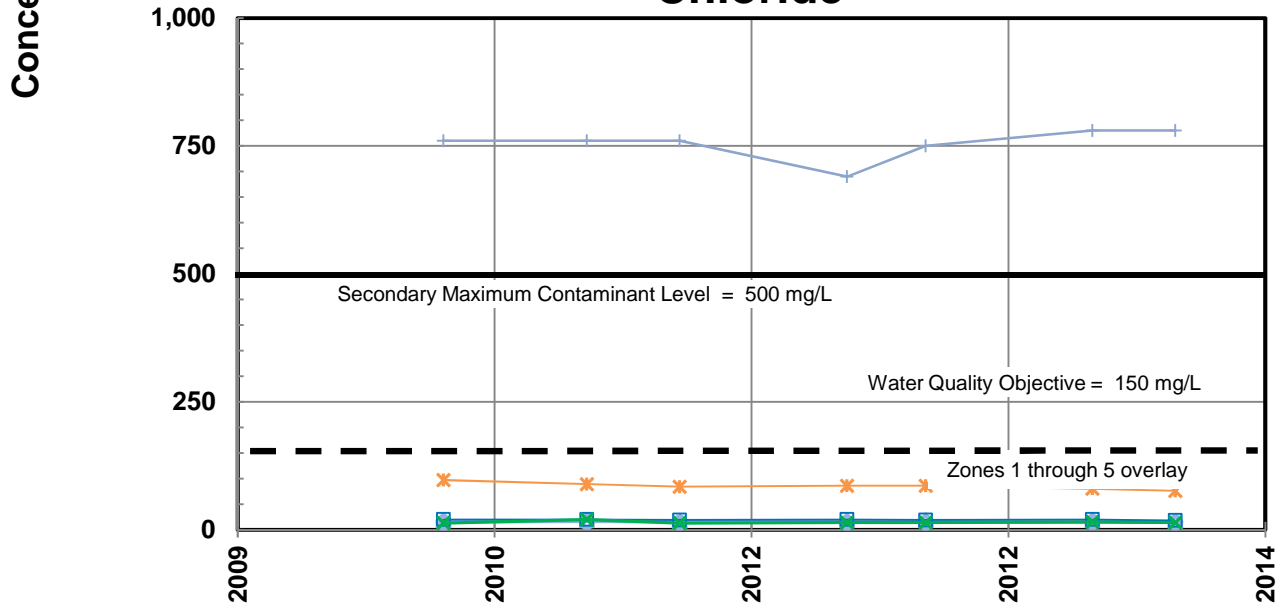
**WATER QUALITY CONCENTRATIONS IN
WRD KEY MONITORING WELL LONG BEACH #6**

FIGURE 4.7

Total Dissolved Solids



Chloride

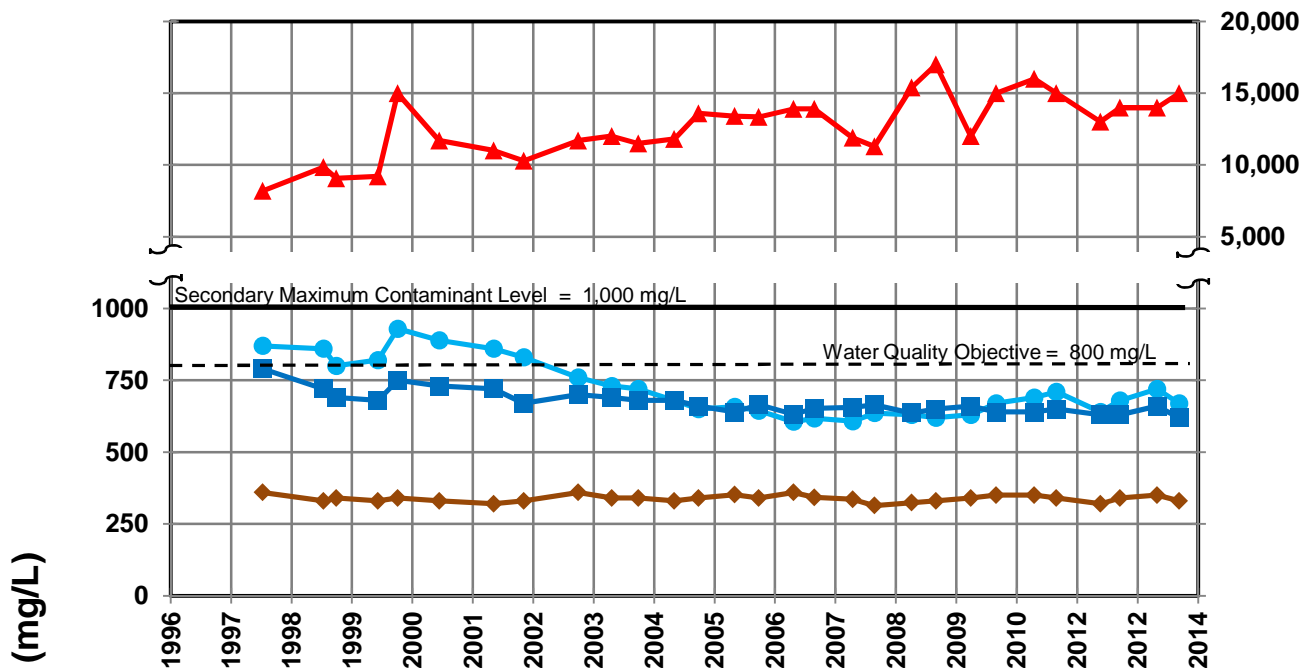


- ▲— Zone 1 (1345'-1365', Sunnyside)
 —◇— Zone 2 (1160'-1180', Sunnyside)
- Zone 3 (1020'-1040', Sunnyside)
 —□— Zone 4 (775'-795', Silverado)
- ×— Zone 5 (605'-625', Lynwood)
 —*— Zone 6 (215'-235', Gage)
- +— Zone 7 (60'-70', Gaspar)

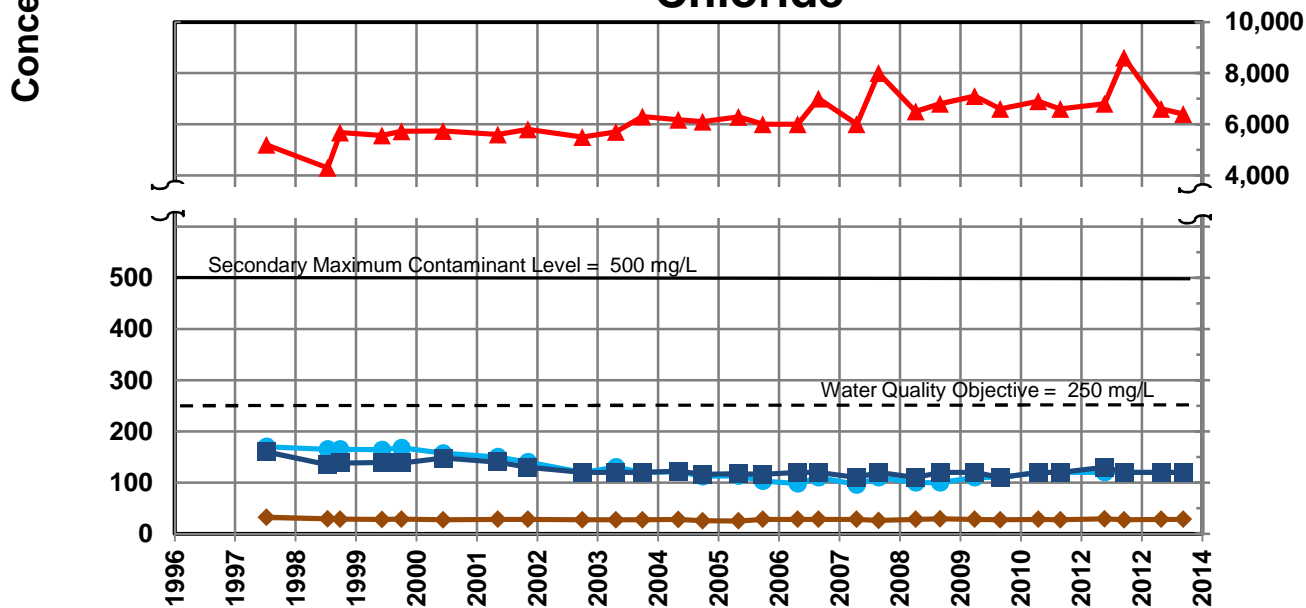
**WATER QUALITY CONCENTRATIONS IN
WRD KEY MONITORING WELL SEAL BEACH #1**

FIGURE 4.8

Total Dissolved Solids



Chloride

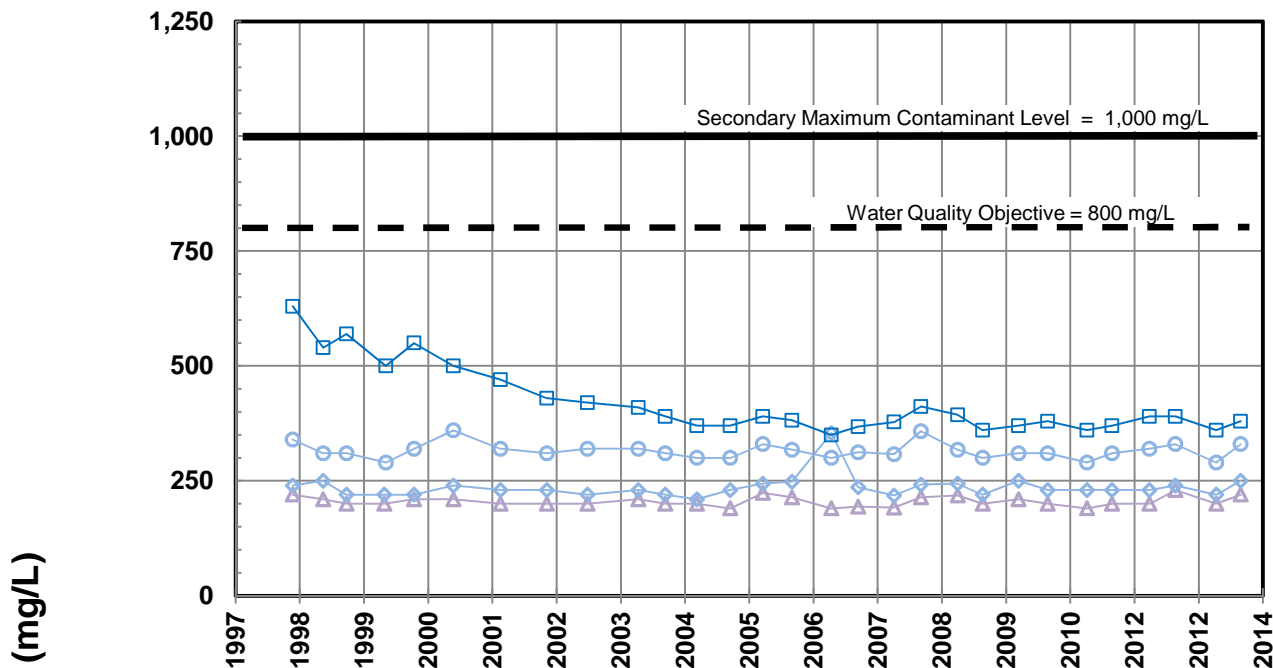


- ◆ Zone 1 (670'-710', Sunnyside)
- Zone 3 (340'-380', Lynwood)
- Zone 4 (200'-240', Lynwood)
- ▲ Zone 2 (500'-540', Silverado)

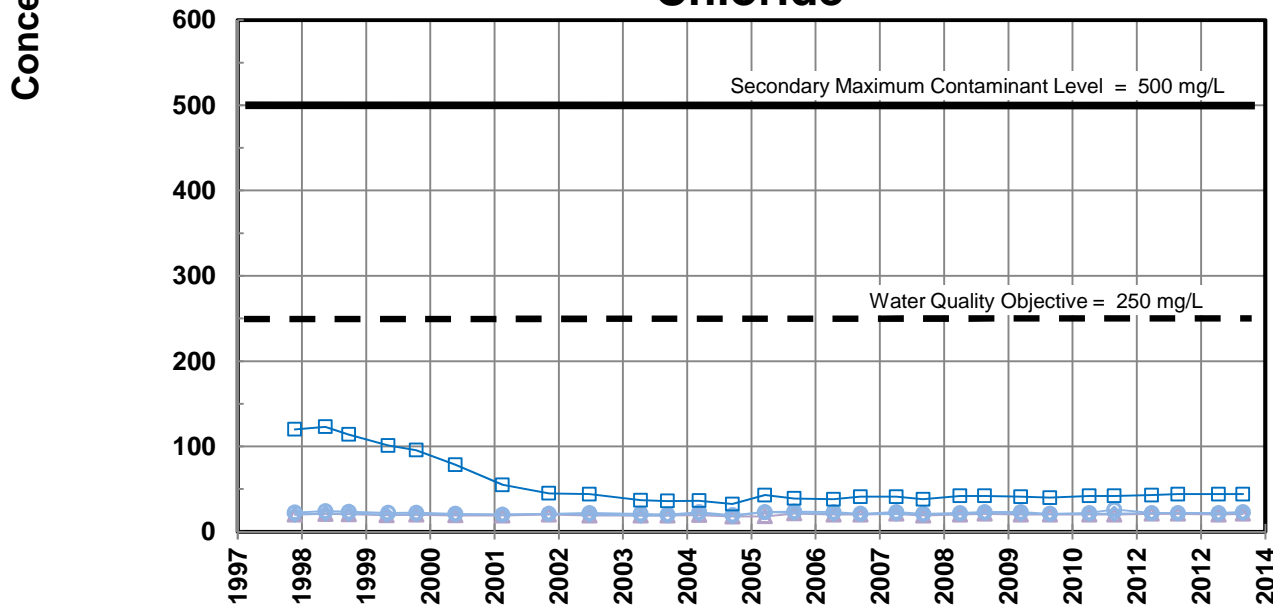
WATER QUALITY CONCENTRATIONS IN WRD KEY MONITORING WELL PM-4 MARINER

FIGURE 4.9

Total Dissolved Solids



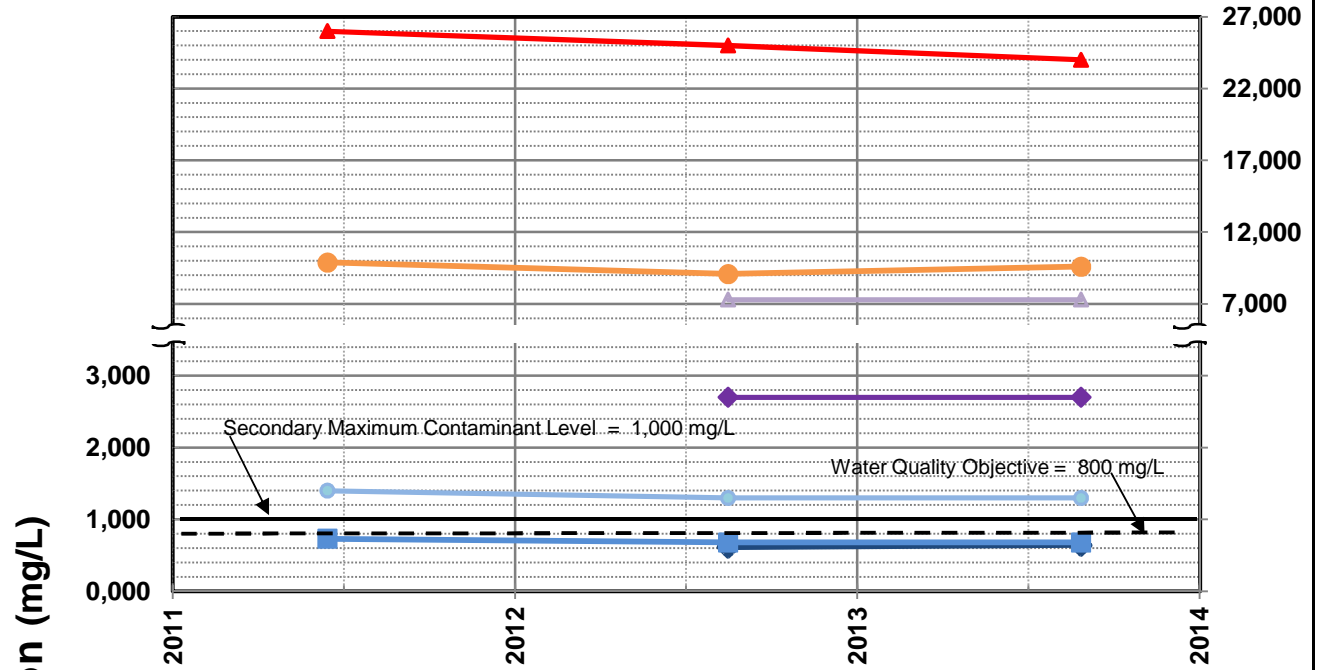
Chloride



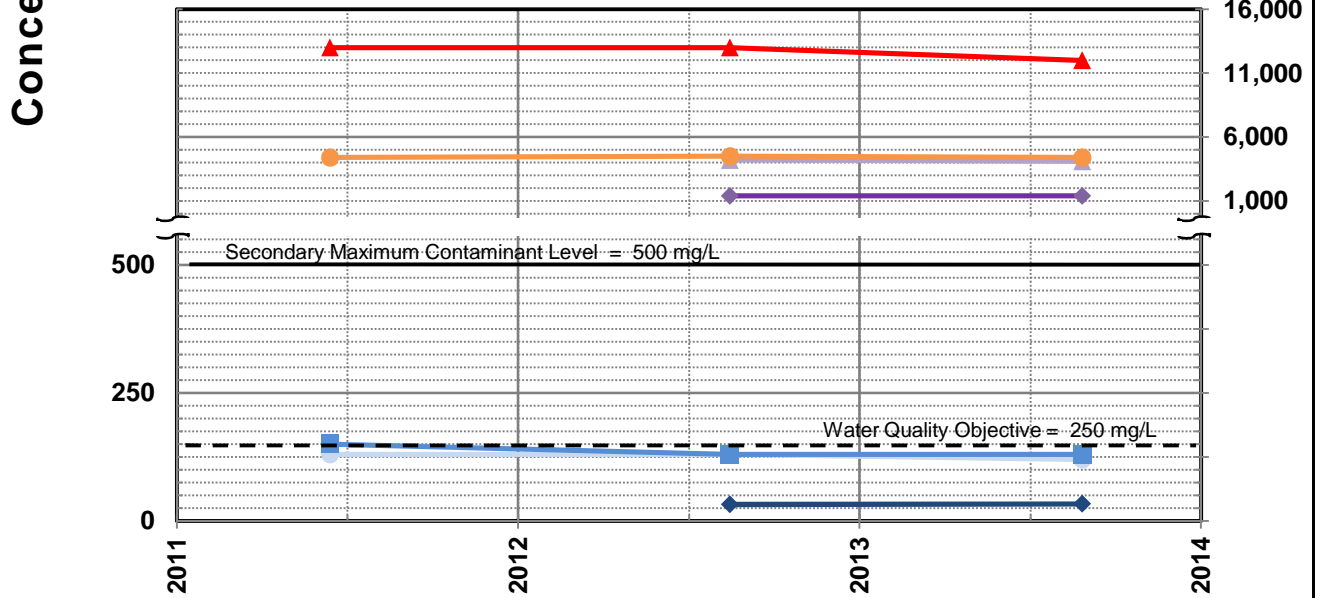
**WATER QUALITY CONCENTRATIONS IN
WRD KEY MONITORING WELL CARSON #1**

FIGURE 4.10

Total Dissolved Solids



Chloride

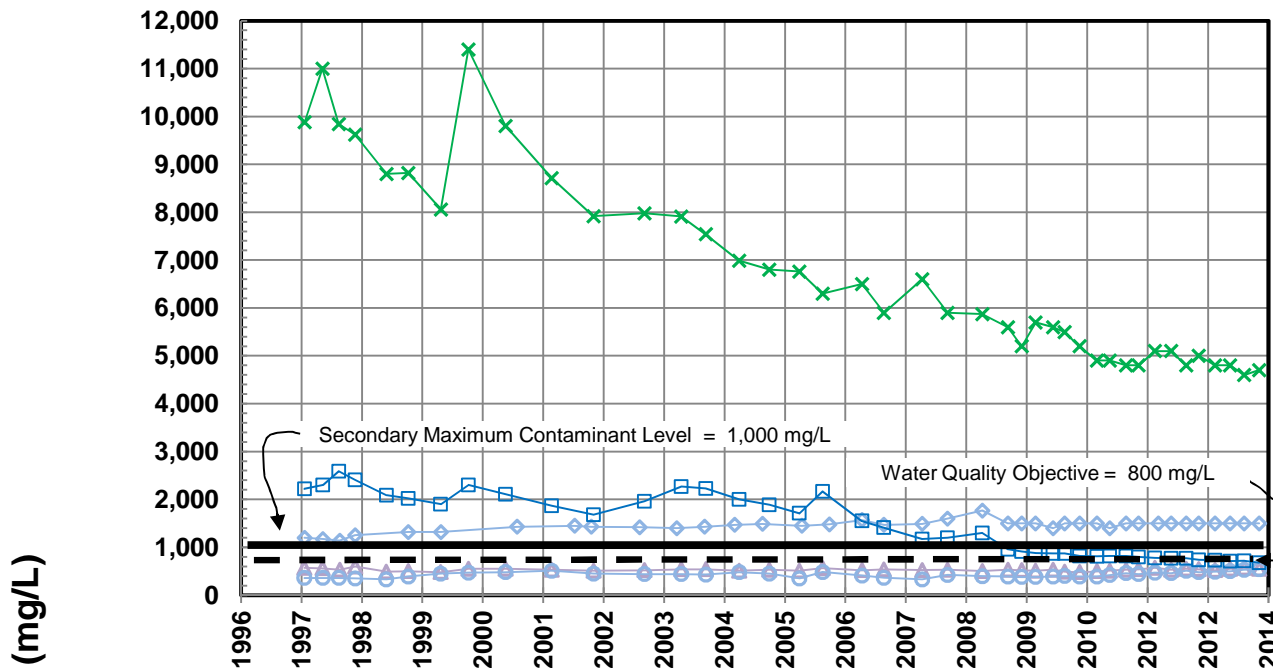


- Zone 3 (1250'-1270', Sunnyside)
- Zone 7 (180'-200', Gage)
- ▲— Zone 5 (640'-660', Silverado)
- Zone 6 (320'-340', Lynwood)
- ◆— Zone 4 (865'-885', Silverado)
- △— Zone 1 (1950'-1990', Pico Formation)
- ◇— Zone 2 (1570'-1590', Pico Formation)

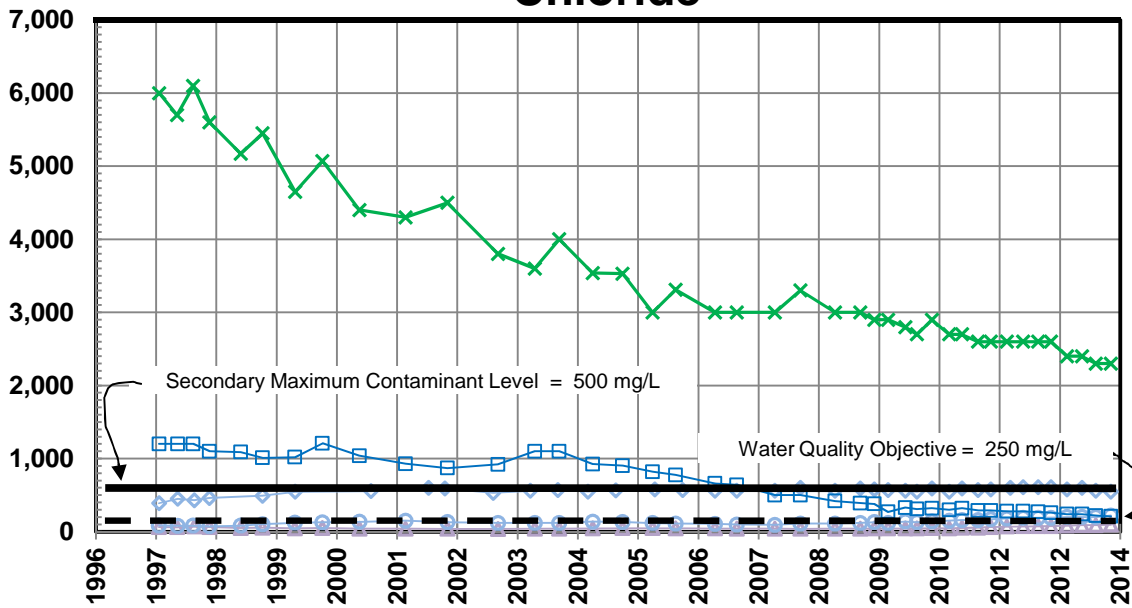
**WATER QUALITY CONCENTRATIONS IN WRD KEY
MONITORING WELL MANHATTAN BEACH #1**

FIGURE 4.11

Total Dissolved Solids



Chloride



- △— Zone 1 (950'-970', Sunnyside)
- ◇— Zone 2 (755'-775', Silverado)
- Zone 3 (540'-560', Lynwood)
- Zone 4 (390'-410', Lynwood)
- x— Zone 5 (120'-140', Gage)

**WATER QUALITY CONCENTRATIONS IN
WRD KEY MONITORING WELL WILMINGTON #2**

FIGURE 4.12

Mission:

“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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Fax (562) 921-6101
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