Montebello

Land and Water Company

2010 Urban Water Management Plan

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SECTION 1

PLAN PREPARATION

1.1 Coordination

Requirement

#45. Each urban water supplier shall coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable (10620(d)(2)).

The Montebello Land and Water Company (ML&WC) is a member of the Water Replenishment District of Southern California (WRD) through its association with the Central Basin Municipal Water District (CBMWD) and Metropolitan Water District (MWD). ML&WC's service area lies within the City of Montebello (City). In recent years, ML&WC has had water lease agreements with the City of Downey, California Water Service Company (CWSC), Lunday-Thagardi Oil Company, Orchard Dale Water District, Paramount Unified School District, and Whittier Union High School District. Neighboring water agencies include CWSC, San Gabriel Valley Water Company, and South Montebello Irrigation District. Copies of the 2010 Urban Water Management Plan Report (UWMP) are sent to all appropriate agencies.

Table 1-1 (DWR Table 1) summarizes ML&WC's efforts to coordinate with the above mentioned agencies.

Table 1-1 (DWR Table 1)
Coordination with appropriate agencies

Coordinating Agencies[1,2]	Participated in developing the plan	Commented on the draft	Attended public meetings	Was contacted for assistance	Was sent a copy of the draft plan	Was sent a notice of intention to adopt	Not involved / No information
Central Basin Municipal Water District				X	X		
Metropolitan Water District					X		
Water Replenishment District of Southern California					X		
County of Los Angeles					X		
City of Montebello				X	X		
City of Downey					X		
California Water Service Company					X		
Lunday-Thagardi Oil Company					X		
Orchard Dale Water District					X		
Paramount Unified School District					X		
Whittier Union High School District					X		
San Gabriel Valley Water Company					X		
South Montebello Irrigation District					X		
General public			X				

[1] *Indicate the specific name of the agency with which coordination or outreach occurred.*

[2] *Check at least one box in each row.*

Requirement
#6. Every urban water supplier required to prepare a plan pursuant to this part shall, at least 60 days prior to the public hearing on the plan required by Section 10642, notify any city or county within which the supplier provides water supplies that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan. The urban water supplier may consult with, and obtain comments from, any city or county that receives notice pursuant to this subdivision (10621(b)).

The entire service area of ML&WC lies within the boundaries of the City of Montebello. The City was notified of the public hearing regarding the 2010 UWMP on May 2, 2011. A copy of the notice is included in Appendix A.

Requirement
#54. The urban water supplier shall provide that portion of its urban water management plan prepared pursuant to this article to any city or county within which it provides water supplies no later than 60 days after the submission of its urban water management plan (10635(b)).

A copy of the 2010 UWMP will be provided to the City of Montebello on or before August 14, 2011, following the submission to the Department of Water Resources (DWR).

Requirement
#55. Each urban water supplier shall encourage the active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan (10642).

Special interest groups and other organizations are not involved in the preparation of the 2010 UWMP. However, the public is invited to attend the hearing prior to the submission of the 2010 UWMP to DWR. They are encouraged to share their comments, express their concerns, and make suggestions regarding the report. It is deemed the most efficient way to gather comments and suggestions from the water customers.

Requirement
#56. Prior to adopting a plan, the urban water supplier shall make the plan available for public inspection and shall hold a public hearing thereon. Prior to the hearing, notice of the time and place of hearing shall be published within the jurisdiction of the publicly owned water supplier pursuant to Section 6066 of the Government Code. The urban water supplier shall provide notice of the time and place of hearing to any city or county within which the supplier provides water supplies. A privately owned water supplier shall provide an equivalent notice within its service area (10642).

The UWMP report was made available to the public for review and to solicit input on June 7, 2011 at the Montebello Land and Water Company office at 344 East Madison Avenue, Montebello, CA 90640. More information is provided on the attached Public Notice, published in the Whittier Daily News on May 19, 2011 (see Appendix A-1). The Notice of public hearing was posted on ML&WC's website and published on May 3, 2011.

1.2 Plan Adoption, Submittal, and Implementation

Requirement
#7. The amendments to, or changes in, the plan shall be adopted and filed in the manner set forth in Article 3 (commencing with Section 10640) (10621(c)).

No amendment or significant changes are anticipated. However, if necessary, they will be adopted and filed as required.

Requirement
#57. After the hearing, the plan shall be adopted as prepared or as modified after the hearing (10642).

The 2010 UWMP was adopted on June 14, 2011. See Appendix A-2 for the ML&WC Board of Directors Meeting Minutes, which contain the Board's approval of this UWMP.

Requirement

#58. An urban water supplier shall implement its plan adopted pursuant to this chapter in accordance with the schedule set forth in its plan (10643).

The 2005 UWMP was implemented by actively promoting water conservation in the community through various rebates, and school programs. The passage of Ordinance No. 2333 by the City of Montebello, establishing the City's water conservation and water supply shortage program, has also aided in implementing the 2005 UWMP.

The 2010 UWMP will be implemented in a similar way. Water conservation will be rigorously promoted through the continuation of the existing programs.

Requirement

#59. An urban water supplier shall submit to the department, the California State Library, and any city or county within which the supplier provides water supplies a copy of its plan no later than 30 days after adoption. Copies of amendments or changes to the plans shall be submitted to the department, the California State Library, and any city or county within which the supplier provides water supplies within 30 days after adoption (10644(a)).

Following the submittal of this UWMP to DWR on July 14, 2011, within 30 days, ML&WC will forward copies to the California State Library, and the City of Montebello.

Requirement

#60. Not later than 30 days after filing a copy of its plan with the department, the urban water supplier and the department shall make the plan available for public review during normal business hours. (10645).

Adopted copies of the 2010 UWMP will be available for public review beginning August 14, 2011. A notice has been posted to inform the public regarding the availability of the 2010 UWMP.

SECTION 2

SYSTEM DESCRIPTION

2.1 SERVICE AREA PHYSICAL DESCRIPTION

Requirement
#8. Describe the service area of the supplier (10631(a)).

The Montebello Land and Water Company (ML&WC) serves a portion of the City of Montebello. The City is located approximately 10 miles southeast of downtown Los Angeles, generally east of Morris Place, south of Lincoln Avenue and Rancho San Antonio boundary, north of Medford Street, Olympic Boulevard, and Walnut Avenue and west of the Rio Hondo Channel. The service area is entirely within the central and northern sections of the City of Montebello. The predominant land uses within the service area are residential, commercial, industrial, institutional, and open space. Figure 2-1 illustrates the location of the study area.

The 2010 service population is 32,219. The projected service population in 2035 is 33,726. Recent historical data show that ML&WC produces an average of 3,732 AFY of groundwater. There are currently 3,979 meters in ML&WC's service area.

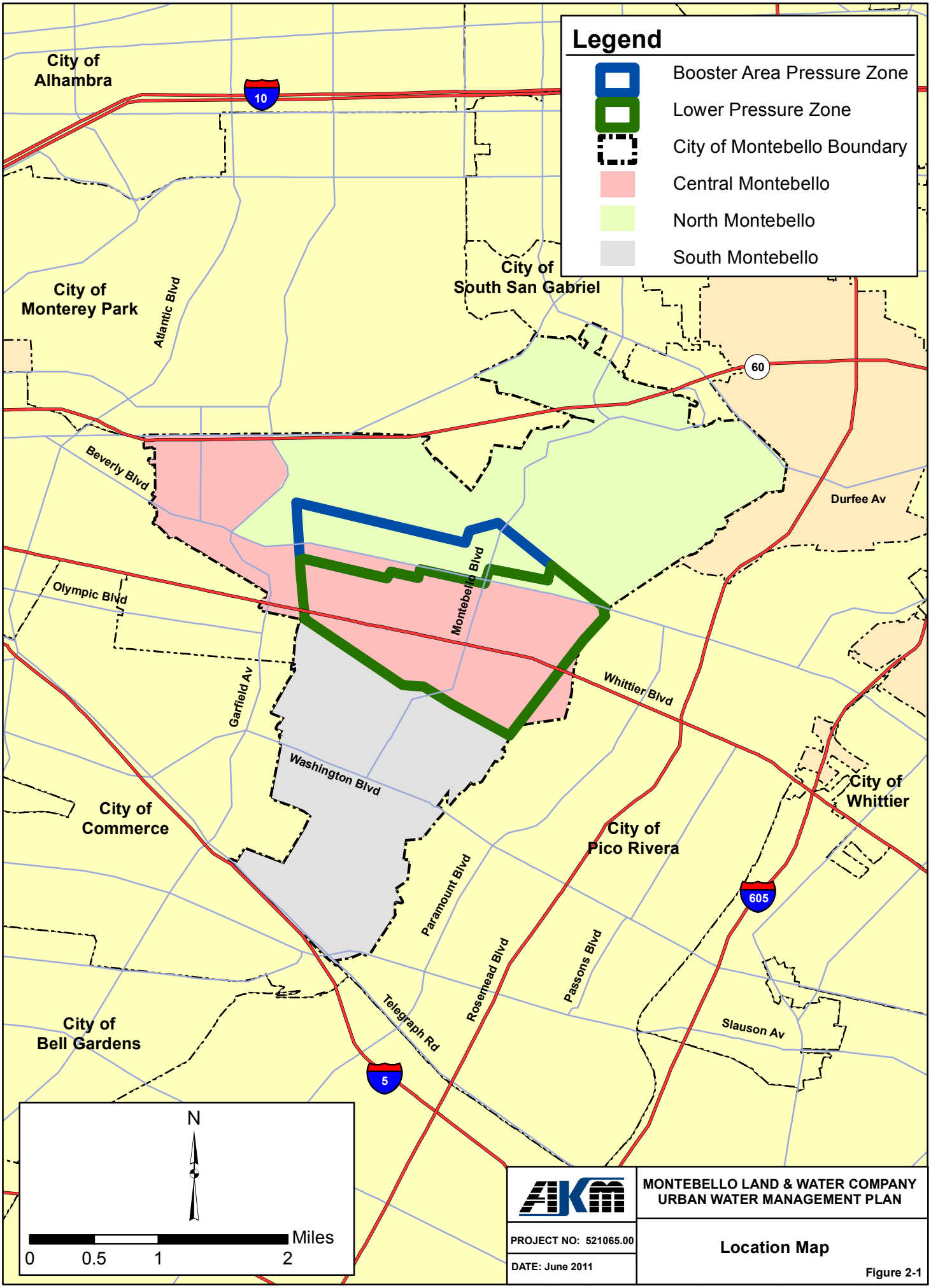
Topography and Geology

Elevations
The topography of the study area generally slopes in a southwesterly direction from approximately 300 to 165 feet above mean sea level (amsl).

Soils
The Los Angeles County Department of Public Works (LACDPW) Hydrology and Sedimentation Appendix provides information on the soil characteristics within Los Angeles County. Native soils found in the City, shown on Figure 2-2, consist of the following:

- Altamont Clay Loam
- Placentia Loam
- Ramona Loam
- Tujunga Fine Sandy Loam
- Yolo Loam

MLWC's Lower Pressure Zone mostly consists of Ramona Loam with traces of Tujunga Fine Sandy Loam on the east side. The Booster Area Pressure Zone is also predominantly Ramona Loam with hints of Altamont Clay Loam in the north.



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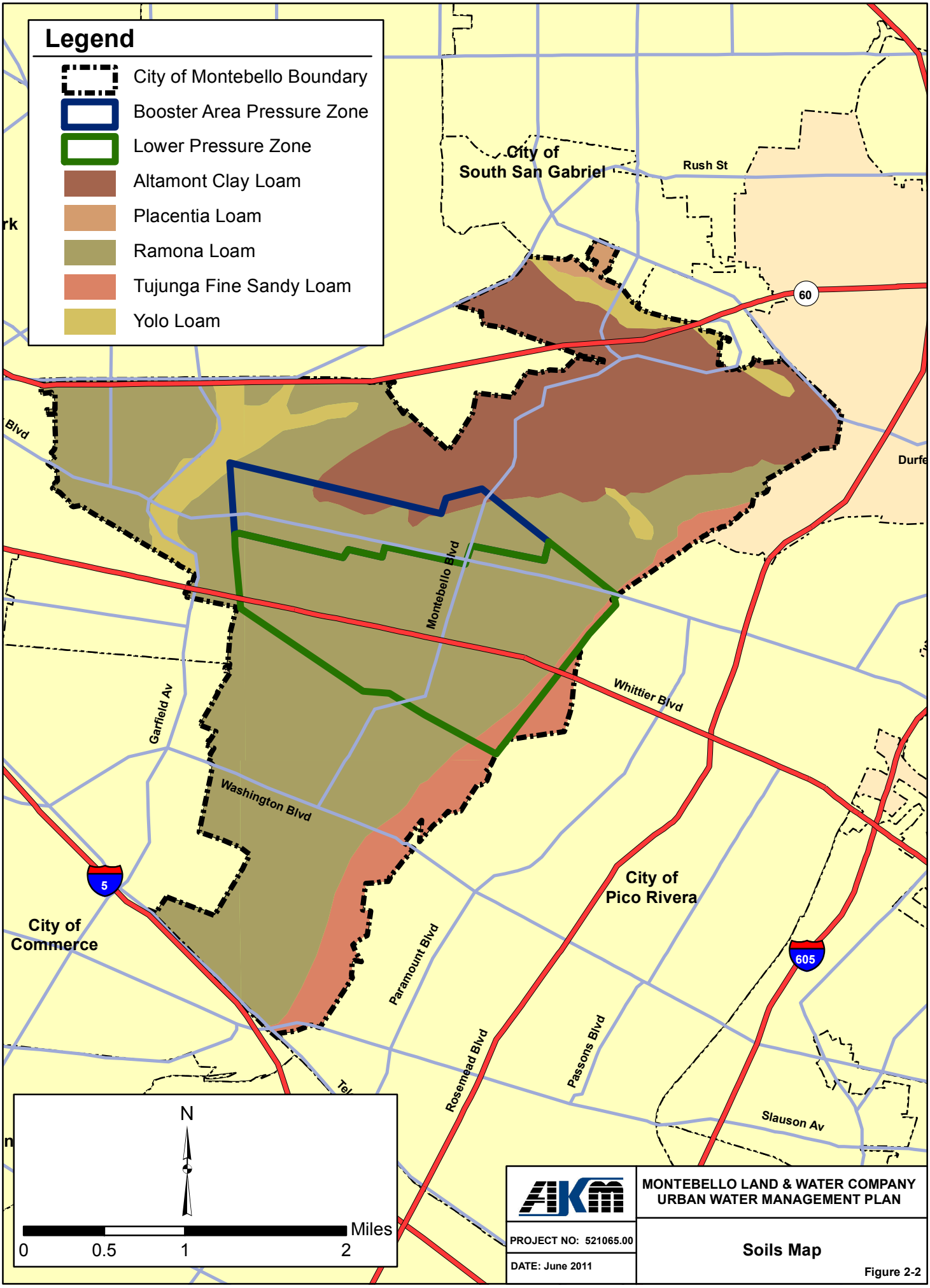
Location Map

Figure 2-1


Legend
City of Montebello Boundary
Booster Area Pressure Zone
Lower Pressure Zone
Altamont Clay Loam
Placentia Loam
Ramona Loam
Tujunga Fine Sandy Loam
Yolo Loam
City of South San Gabriel
Rush St
60
Montebello Blvd
Whittier Blvd
Garfield Av
Washington Blvd
5
City of Commerce
City of Pico Rivera
605
Paramount Blvd
Rosemead Blvd
Passons Blvd
Slauson Av
N
Miles
0
0.5
1
2
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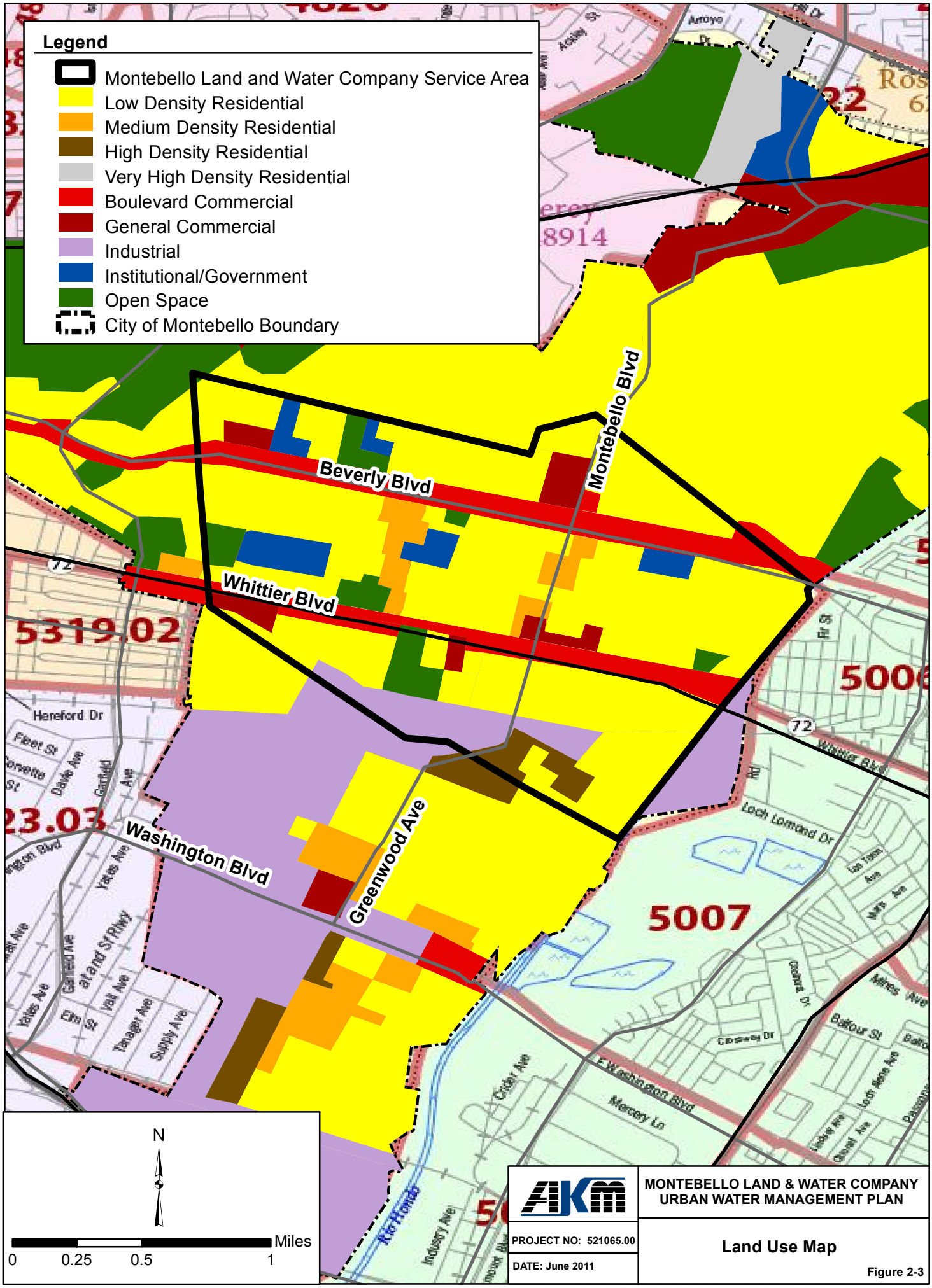
Soils Map
Figure 2-2



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Land Use Map

Figure 2-3

Land Use

The most recent information on the City's land use characteristics is taken from the 1973 City of Montebello General Plan Land Use Element. At the time of planning, it was assumed that very little to no changes at all would occur in the land use designations throughout the City. The service area of ML&WC lies within portions of the central and northern sections of the City. ML&WC's service area predominantly consists of residential and commercial land uses.

Residential

The City is comprised primarily of residential land use. About 40.9% of the total land area is assigned as low density residential, which allows a building intensity of up to 40% of the lot coverage; 11.8% is allocated for medium density residential, allowing for a building intensity of up to 50% of the lot coverage; 4.3% for high density residential and 1.8% for very high density residential, each with a maximum building intensity of 60%.

Commercial

There are two distinct commercial categories in the City. General Commercial encompasses about 5.5% of the land area, and Boulevard Commercial occupies 2.6%. The commercial area includes regional and community shopping facilities, local neighborhood convenience centers, highway oriented development, and professional type areas. The Boulevard Commercial and some General Commercial areas are concentrated along Whittier and Beverly Boulevards. The Beverly Hospital is located within ML&WC's service area.

Industrial

The industrial section is concentrated in the southern portion of the City. It composes 16.4% of the City's total land area. It allows for up to 100% of lot coverage, provided that it meets setback and parking requirements. Only a small portion of ML&WC south of West Olympic Avenue in the Lower Pressure Zone is industrial.

Institutional

Only about 4.6% of the City is assigned for institutional uses, such as schools and public facilities. The Montebello City Hall, Library, Police Station, one fire station, and a post office, as well as the Montebello High School, Montebello Intermediate School, Fremont Elementary School, and Washington Elementary School are located within ML&WC's boundary.

Parks and Open Space

Approximately 12.2% of the City is designated as parks and open space, of which 72.2 acres is the Rio Hondo Channel. In 1973, the General Plan recognized that land acquisition for additional open space would be limited, but 200 acres in the Montebello Hills were reserved as open space. The three-acre Henry Acuna Park, the 14 acre Montebello City Park, and the 3 acre Cathy Hensel Gymnasium and Youth Center are found within ML&WC's service area.

Table 2-1 summarizes the land use categories and acreage allocation in the City.

Table 2-1
Land Use

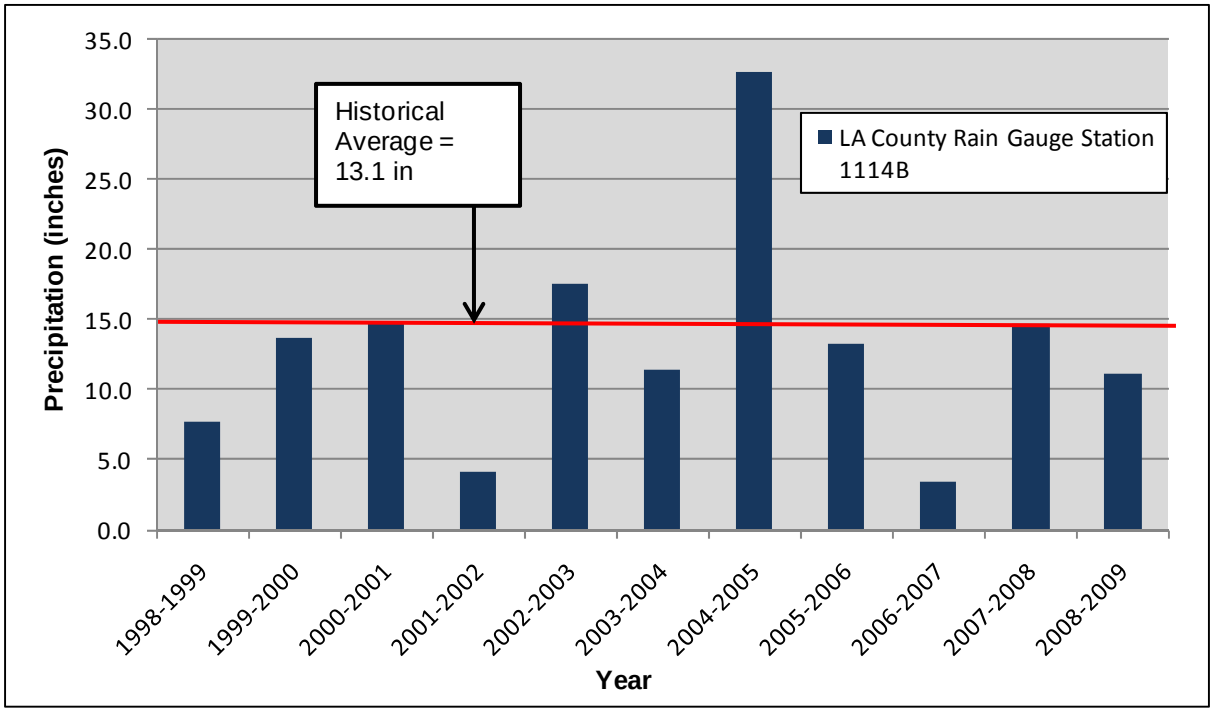
		Residential Densities				Commercial					
	Sub-Areas	Low	Medium	High	Very High	General	Boulevard	Industrial	Institutional	Parks and Open Space	Total Area (ac)
North	Area (ac)	1,173.3	119.0	89.8	89.5	165.6	19.8	-	70.1	301.0	2,028.1
	% of Sub-area	57.9%	5.9%	4.4%	4.4%	8.2%	1.0%	0.0%	3.5%	14.8%	100.0%
Central	Area (ac)	469.0	218.1	65.3	-	78.8	80.1	-	125.0	206.1	1,242.4
	% of Sub-area	37.7%	17.6%	5.3%	0.0%	6.3%	6.4%	0.0%	10.1%	16.6%	100.0%
South	Area (ac)	413.5	259.1	61.0	-	31.4	31.2	823.3	35.0	107.5	1,762.0
	% of Sub-area	23.5%	14.7%	3.5%	0.0%	1.8%	1.8%	46.7%	2.0%	6.1%	100.0%
	Total Area (ac)	2,055.8	596.2	216.1	89.5	275.8	131.1	823.3	230.1	614.6	5,032.5
	% of Total	40.9%	11.8%	4.3%	1.8%	5.5%	2.6%	16.4%	4.6%	12.2%	100.0%

Source: 1973 City of Montebello General Plan Land Use Element

Requirement
#9. (Describe the service area) climate (10631(a)).

The climate in the area is typical of Southern California with generally mild temperatures, and virtually no days below freezing. A high temperature of 85.7°F can be experienced in July, and temperatures can be as low as 44.6°F in January. The historical average annual rainfall in the City is about 13.1 inches, as recorded by the Los Angeles County Rain Gauge Station 1114B (Whittier Narrows Dam). The maximum rainfall recorded was 32.7 inches in 2004-2005, and the minimum was 3.5 inches in 2006-2007. Most of the rainfall occurs between November and March. Annual rainfall between 1998 and 2009 is shown on Figure 2-4.

Figure 2-4
Annual Rainfall 1998-2009



2.2 SERVICE AREA POPULATION

Requirement

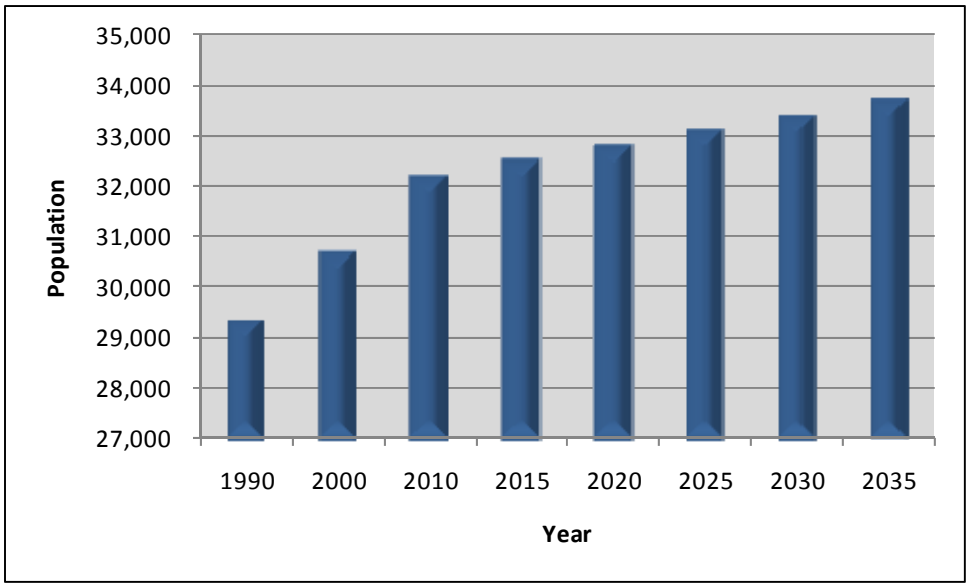
#10. (Describe the service area) current and projected population . . . The projected population estimates shall be based upon data from the state, regional, or local service agency population projections within the service area of the urban water supplier . . . (10631(a)).

Since its incorporation in 1920, the City has grown from a population of 5,498 to approximately 62,500 in 2010 (Reference: California Department of Finance). The City's total population in 2005 was 65,206 according to State Department of Finance estimates. The decline in population between 2005 and 2010 can be attributed to the recent economic downturn. The expected population in 2035 is estimated at 66,005 (Reference: SCAG Adopted 2008 Regional Transportation Plan Growth Forecast).

In 2005, approximately 31,465 persons were served by ML&WC. By 2010, this number has only increased to 32,219 persons. This modest growth in population is reflective of the fact that the service area is built out, and there is lack of land suitable for further development and densification. The boundary of ML&WC's service area is delineated upon the census tract map of the City of Montebello to show which tracts coincide with ML&WC's service area. Using the tract numbers, population data is extracted from the 2010 Census Centers of Population by Census Tract table. Both the tract maps and population tables are available on http://www.census.gov/. Figures 2-6, 2-7 and 2-8 show the tract maps for the City of Montebello with the service area boundary of ML&WC for the years 1990, 2000 and 2010, respectively.

Population history and future projections are shown in Figure 2-5.

Figure 2-5
Historical and Projected Population



Reference: Historical population data from the Bureau of Census

The remainder of the City is provided water service by the City of Montebello (system operated by California Water Service), San Gabriel Valley Water Company, and South Montebello Irrigation District.

Requirement

#11. . . . (population projections) shall be in five-year increments to 20 years or as far as data is available (10631(a)).

ML&WC's service area population is listed in Table 2-2 (DWR Table 2).

Table 2-2 (DWR Table 2) Population – current and projected							
	2010	2015	2020	2025	2030	2035 - optional	Data source[2]
Service area population[1]	32,219	32,520	32,822	33,123	33,425	33,726	Bureau of Census

[1] Service area population is defined as the population served by the distribution system. See Technical Methodology 2: Service Area Population (2010 UWMP Guidebook, Section M).
[2] Provide the source of the population data provided.

Requirement

#12. Describe . . . other demographic factors affecting the supplier's water management planning (10631(a)).

In 2000, the City had approximately 19,416 housing units and a 2.95% vacancy rate, resulting in 3.28 persons per household. In comparison, the total number of housing units stands at approximately 19,768 with a 3.82% vacancy rate in 2010. Consequently, the population per household is estimated to be 3.29 (Reference: California Department of Finance). The City aims to have a full range of housing types and community services that meet the special housing needs for all its residents, regardless of income level, age or other status.

The most recent update to the City of Montebello General Plan Housing Element in 1989 identifies several segments of the population that require special housing needs. Accordingly, these special groups may affect water management planning.

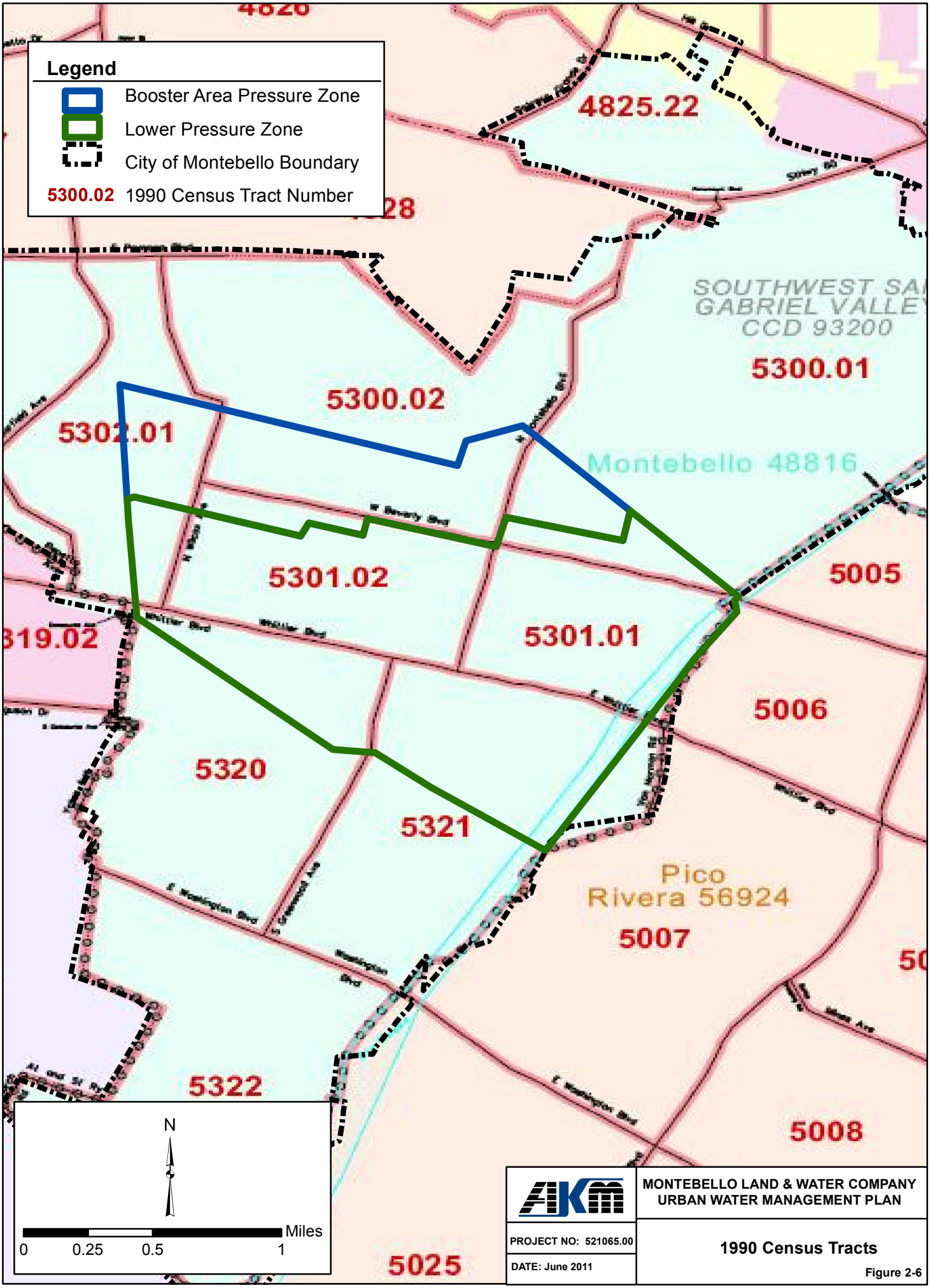
It is important to note, however, that ML&WC's service area only covers a portion of the City's overall population.

Elderly

The 1989 Housing Element recognized that the elderly population (ages 65 years and older) would continue to increase as a percentage of the City's total population in the future. Knowing that many of the senior residents would be on fixed income and would not be able keep up with the steep increase in the housing prices, two subsidized senior housing complexes were built to assist the elderly. They are the Beverly Towers with 189 units and the Casa La Merced with 130 units. Casa La Merced is located at ML&WC's Lower Pressure Zone, at the intersection of Montebello Boulevard and Whittier Boulevard. Other forms of housing assistance, such as low interest loans for home maintenance, are made available for seniors, who are either waitlisted for senior housing or who wish to remain in their current homes. The 2005-2009 American Community Survey estimates that 13% of the City's population is 65 years old and over (Reference: 2009 Bureau of Census estimates).

People with Disabilities

The 2000 Census identified that 23.2% of the City's population, ages 21 to 64, had disabilities but were not institutionalized. Their needs primarily consist of accessibility in the current housing units and sidewalk ramps. To address their needs, the City uses funding from the Community Development Block Grant to cut curbs and construct sidewalk ramps throughout the City. In addition, select dwelling units may be eligible for City-assisted handicap improvements if at least one resident at that household is handicap and receives rehabilitation treatment through federal, state, or other local sources.



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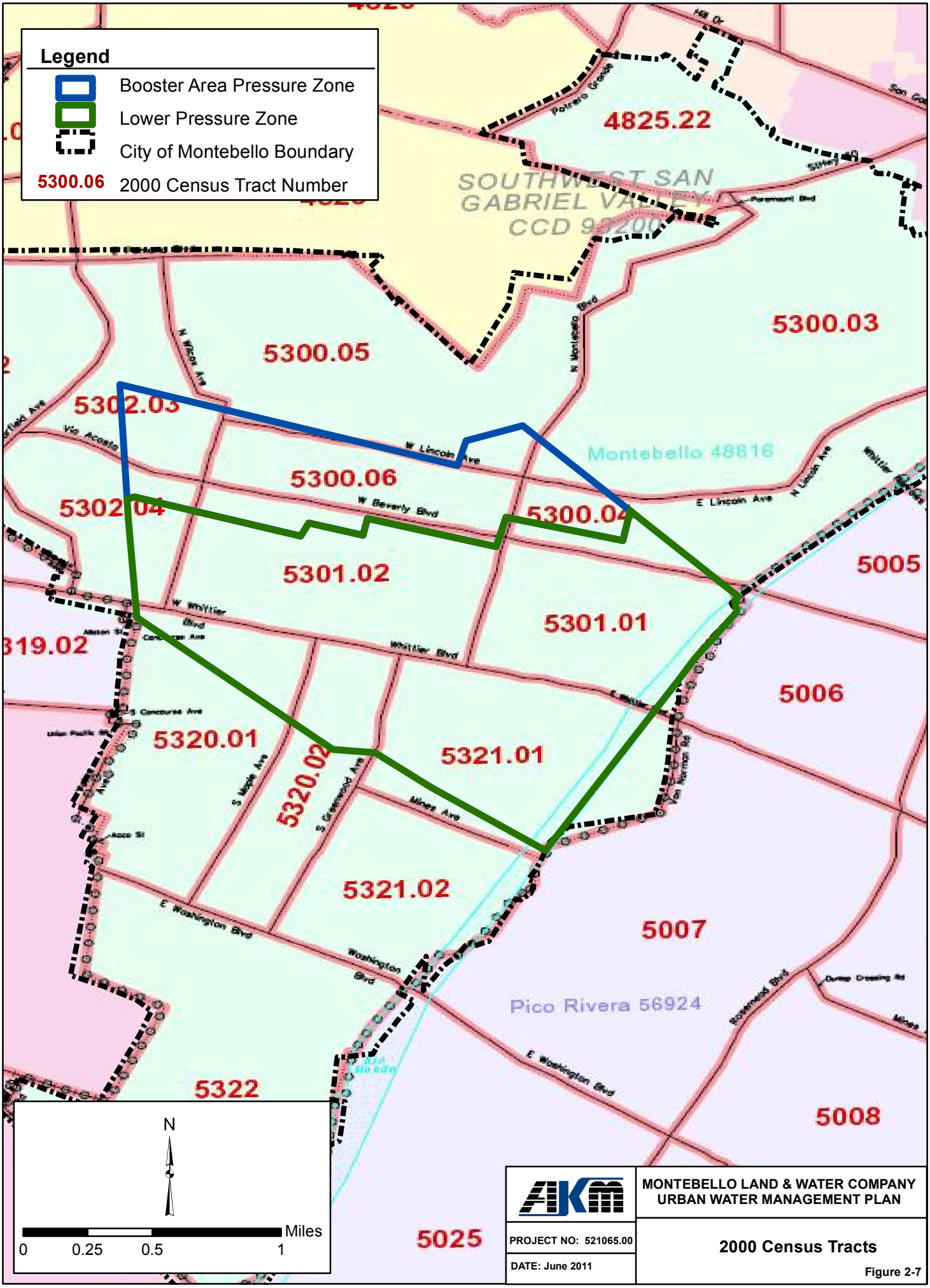
1990 Census Tracts

Figure 2-6



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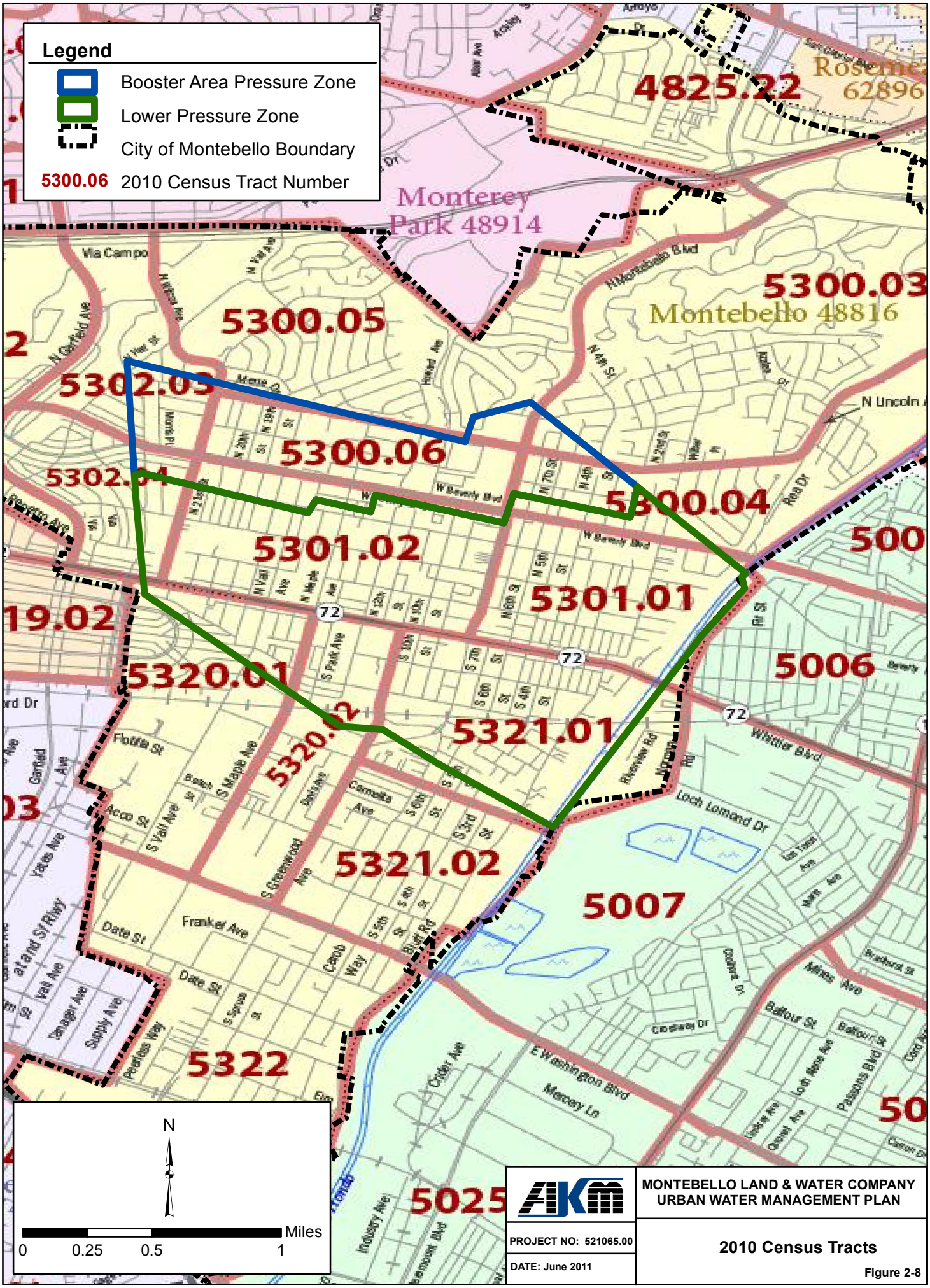
2000 Census Tracts

Figure 2-7



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2010 Census Tracts

Figure 2-8

Large Families and Overcrowding

Large families typically have at least five members and require housing units with at least three bedrooms. Two problems arise from this: one is that there is a limited supply of large rental units in the City, and large families tend to have a more difficult time to find affordable housing. Large families also tend to be low- to moderate-income; most allocating more than 30 percent of their income on housing; and many are single-parent households.

The main source of assistance for most families is Section 8 housing certificates to help with rent. Some families reside at the 28-unit Villa Margarita, which is considered public housing. Villa Margarita is located at ML&WC's Lower Pressure Zone, on Lohart Avenue and 3rd Street. Typically, according to the Los Angeles County Housing Authority, low income families who require large housing units may have to be on the waitlist for two to four years.

Overcrowding, defined as more than 1.5 persons per room in a dwelling unit, is normally experienced by large families due to the high cost of housing. To help alleviate overcrowding, the City offers the Rental Rehabilitation Program, which provides rental property owners low interest loans for property upgrades, such as construction of additional rooms. For homeowners, the Home Improvement and Preservation Program which offers low interest and deferred loans for home improvement expenses, is also available.

Homeless Families

While there are no homeless shelters within the jurisdiction of the City, several shelters are located in nearby cities. Sundowners, Salvation Army, and the New Jerusalem Church offer temporary shelter to single men. Rio Hondo Temporary Home, Chicana Service Action Center, Southern California Coalition on Battered Women, and Bethel Haven are available to women and their families who need temporary housing.

Female Headed Households

According to the 2005-2009 American Community Survey, approximately 20.3% of all households in the City were headed by females with no husband present (Reference: 2009 Bureau of Census estimates). However, the City's 1989 Housing Element concluded that a large portion of the female headed households were elderly women. Assuming that a similar statistic exists today, it can be inferred that the special needs of most female headed households can be met through the housing assistance programs that are already available for the elderly.

The groups with special needs may affect ML&WC's water management plan in the following ways: the elderly, handicapped, and homeless families may have limited access to public outreach programs, particularly the public information and education programs; large families and female headed households, who are typically low income earners, may not be able to afford water efficient plumbing retrofits at their homes. Consequently, they may not be fully integrated into ML&WC's water conservation programs. These examples show that additional efforts may be necessary to ensure that the water customers with special needs will have the full opportunity to learn more about and participate in ML&WC's various water conservation programs.

SECTION 3

SYSTEM DEMANDS

3.1 WATER DEMANDS

Requirement

#25. Quantify, to the extent records are available, past and current water use, and projected water use over the same five-year increments described in subdivision (a), identifying the uses among water use sectors, including, but not necessarily limited to, all of the following uses: (A) Single-family residential; (B) Multifamily; (C) Commercial; (D) Industrial; (E) Institutional and governmental; (F) Landscape; (G) Sales to other agencies; (H) Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof; (I) Agricultural (10631(e)(1) and (2)).

3.1.1 Historical Water Demands

Water consumption in the Montebello Land and Water Company (ML&WC) service area averaged 3,296 AFY between 2005 and 2010. Water production averaged 3,576 AFY during the same period. The discrepancy is partly due to the differences in the accuracies of the few large meters which measure production, and the thousands of smaller customer meters which measure sales. Water that is unaccounted for is mostly due to unmeasured uses such as water main flushing and other maintenance related tasks. The remainder may be due to leaks from the system. The average water loss since 2005 is about 7.8%, most of which is attributable to system flushing. Table 3-1 compares water consumption and production for the period between 2005 and 2010.

Table 3-1
Water Consumption versus Water Production

Year	Water Consumption (AFY)	Water Production (AFY)	Unaccounted for Water (AFY)	% Unaccounted for Water
2005	3,338	3,666	328	8.9%
2006	3,255	3,544	289	8.1%
2007	3,366	3,686	320	8.7%
2008	3,414	3,648	233	6.4%
2009	3,305	3,538	233	6.6%
2010	3,098	3,373	275	8.1%
Average	**3,296**	**3,576**	**280**	**7.8%**

Table 3-2 (DWR Table 3) illustrates the water deliveries in 2005 by land use category. The total delivery estimated in the 2005 Urban Water Management Plan (UWMP) was 3,900 AFY, which is 14.4% higher than the actual delivery (3,338 AFY).

Table 3-2 (DWR Table 3) Water deliveries – actual, 2005					
	2005				
	Metered		Not metered		Total
Water use sectors	# of accounts	Volume	# of accounts	Volume	Volume
Single family	2,833	938	0	0	938
Multi-family	574	1,434	0	0	1,434
Commercial	264	558	0	0	558
Industrial	38	212	0	0	212
Institutional/governmental	119	195	0	0	195
Landscape	0	0	0	0	0
Agriculture	0	0	0	0	0
Other	0	0	0	0	0
Total	3,829	3,338	0	0	3,338
Units (circle one): acre-feet per year	million gallons per year	cubic feet per year			

Table 3-3 (DWR Table 4) shows the water deliveries for 2010, which totaled 3,098 AFY. The actual delivery is 802 AFY lower than the delivery estimated by the 2005 UWMP (3,900 AFY). This is consistent with the steady decline in consumption during the last few years and can be attributed to water conservation efforts and possibly the economic downturn. ML&WC's service area also lacks developable land, with no foreseeable future development and densification, so a significant increase in demand is unlikely to occur.

Table 3-3 (DWR Table 4) Water deliveries – actual, 2010					
	2010				
	Metered		Not metered		Total
Water use sectors	# of accounts	Volume	# of accounts	Volume	Volume
Single family	2,275	855	0	0	855
Multi-family	1,041	1,268	0	0	1,268
Commercial	513	522	0	0	522
Industrial	31	222	0	0	222
Institutional/governmental	119	231	0	0	231
Landscape	0	0	0	0	0
Agriculture	0	0	0	0	0
Other	0	0	0	0	0
Total	3,979	3,098	0	0	3,098
Units (circle one): acre-feet per year	million gallons per year	cubic feet per year			

3.1.2 Projected Potable Water Demands

The projected potable water demands were determined based upon the existing demands, the average daily per capita water use for the 2006 to 2010 deliveries and projected population. The water demand projections are estimated using the 2020 target daily per capita water use of 92 gpcd. The daily per capita water use in 2010, however, is only 86 gpcd. The allocation of demand in each of the land use categories is based on the

estimated percentage of use, which is 70% residential, 6% industrial, 17% commercial, and 7% governmental.

The service area is built out, and it is assumed that there will not be any significant changes in land use and increase in population.

Tables 3-4 (DWR Table 5) through 3-6 (DWR Table 7) show the projected water deliveries for 2015; 2020; and 2025, 2030, and 2035.

Table 3-4 (DWR Table 5)
Water deliveries — projected, 2015

	2015				
	Metered		Not metered		Total
Water use sectors	# of accounts	Volume	# of accounts	Volume	Volume
Single family	2,296	961	0	0	961
Multi-family	1,051	1,370	0	0	1,370
Commercial	518	580	0	0	580
Industrial	31	216	0	0	216
Institutional/governmental	120	224	0	0	224
Landscape	0	0	0	0	0
Agriculture	0	0	0	0	0
Other	0	0	0	0	0
Total	4,016	3,351	0	0	3,351

Units (circle one): acre-feet per year million gallons per year cubic feet per year

Table 3-5 (DWR Table 6)
Water deliveries — projected, 2020

	2020				
	Metered		Not metered		Total
Water use sectors	# of accounts	Volume	# of accounts	Volume	Volume
Single family	2,318	970	0	0	970
Multi-family	1,060	1,383	0	0	1,383
Commercial	523	585	0	0	585
Industrial	31	218	0	0	218
Institutional/governmental	121	226	0	0	226
Landscape	0	0	0	0	0
Agriculture	0	0	0	0	0
Other	0	0	0	0	0
Total	4,053	3,382	0	0	3,382

Units (circle one): acre-feet per year million gallons per year cubic feet per year

Table 3-6 (DWR Table 7) Water deliveries — projected 2025, 2030, and 2035						
	2025		2030		2035 - optional	
	metered		metered		metered	
Water use sectors	# of accounts	Volume	# of accounts	Volume	# of accounts	Volume
Single family	2,339	979	2,360	985	2,381	997
Multi-family	1,070	1,395	1,080	1,404	1,090	1,421
Commercial	528	590	532	594	537	601
Industrial	32	220	32	221	32	224
Institutional/governmental	122	229	124	230	125	232
Landscape	0	0	0	0	0	0
Agriculture	0	0	0	0	0	0
Other	0	0	0	0	0	0
Total	4,091	3,413	4,128	3,434	4,165	3,475
Units (circle one): acre-feet per year million gallons per year cubic feet per year						

3.1.3 Water Sales to Other Agencies

ML&WC currently does not sell water to other agencies, and there are no plans to sell water to other agencies in the future.

Table 3-7 (DWR Table 9) Sales to other water agencies							
Water distributed	2005	2010	2015	2020	2025	2030	2035 - opt
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	0	0	0	0	0	0	0
Units (circle one): acre-feet per year million gallons per year cubic feet per year							

3.1.4 Additional Water Uses and Losses

Additional water uses and losses consist of saline water barrier demand, groundwater recharge, conjunctive use, raw water, recycled water, and system losses (unaccounted for water).

Groundwater recharge in the Central Basin is a regional effort. It is accomplished by the Water Replenishment District of Southern California (WRD) with the use of untreated imported water and recycled water. The amount of replenishment in the basin varies every year depending on the availability of imported water for recharge purposes, maintenance and construction at the basin, and climate. During wet years, replenishment becomes less necessary since heavy rains are sufficient to naturally recharge the basin. During dry years, however, artificial replenishment is increased. Historically, WRD purchases an average of 22,182 AFY of imported water for groundwater recharge, which is stored at the spreading grounds at Rio Hondo and San Gabriel River in the Montebello Forebay (Reference: CBMWD UWMP 2010).

In the past, WRD was also responsible for deliveries of imported water from CBMWD to the Alamitos Barrier, which prevents seawater intrusion into the basin. The average saline barrier demand in the recent years was about 5,348 AFY. Beginning 2003, however, CBMWD no longer supplies water to the Alamitos Barrier since the City of Long Beach took charge of the supply connection. In the future, WRD will reduce the supply of imported water and replace it with high quality recycled water, which is available from the Leo J. Vander Lans

Advanced Water Treatment Center, owned by WRD, in the City of Long Beach (Reference: CBMWD UWMP 2010).

Because of these efforts, ML&WC does not have its own groundwater recharge or saline barrier programs.

ML&WC does not have any additional water uses such as conjunctive use or raw water projects.

Moreover, ML&WC currently does not have any recycled water customers. However, upon completion of the Southeast Water Reliability Project Phase 1, Henry Acuna Park, ML&WC's customer that is currently being served with potable water for irrigation, will begin receiving recycled water. The recycled water will be supplied by CBMWD. The estimated recycled water demand is 18.5 AFY, which is equivalent to savings in potable water.

Some of the system losses are due to inaccuracies of the smaller customer meters compared to the larger supply and production meters which are maintained and calibrated more frequently than the smaller customer meters; water main flushing and other maintenance purposes; and system leaks. This is also referred to as "unaccounted for water", which has varied from 6.4% to 8.9% between 2005 and 2010, with an average of 7.8%. The average is used to estimate system losses in this UWMP. Majority of the unaccounted for water are for system flushing for water quality. ML&WC plans on keeping records of water used in system flushing operations to estimate the water used for this purpose and better estimate losses due to other causes.

Table 3-8 (DWR Table 10) illustrates the additional water uses and losses between 2005 and 2035.

Table 3-8 (DWR Table 10)
Additional water uses and losses

Water use[1]	2005	2010	2015	2020	2025	2030	2035 -opt
Saline barriers	0	0	0	0	0	0	0
Groundwater recharge	0	0	0	0	0	0	0
Conjunctive use	0	0	0	0	0	0	0
Raw water	0	0	0	0	0	0	0
Recycled water	0	0	18.5	18.5	18.5	18.5	18.5
System losses	328	275	261	264	266	269	271
Other (define)							
Total	328	275	280	282	285	288	290

Units (circle one): acre-feet per year million gallons per year cubic feet per year

[1] Any water accounted for in Tables 3 through 7 are not included in this table.

3.1.5 Total Water Use

The total water use from 2005 and projections up to 2035 are presented in Table 3-9 (DWR Table 11).

Table 3-9 (Table 11) Total water use							
Water Use	2005	2010	2015	2020	2025	2030	2035 - opt
Total water deliveries (from Tables 3 to 7)	3,338	3,098	3,351	3,382	3,413	3,434	3,475
Sales to other water agencies (from Table 9)	0	0	0	0	0	0	0
Additional water uses and losses (from Table 10)	328	275	261	264	266	269	271
Total	3,666	3,373	3,612	3,646	3,679	3,703	3,746

Units (circle one): acre-feet per year million gallons per year cubic feet per year

3.1.6 Low-income Projected Water Demands

Requirement

#34. The water use projections required by Section 10631 shall include projected water use for single-family and multifamily residential housing needed for lower income households, as defined in Section 50079.5 of the Health and Safety Code, as identified in the housing element of any city, county, or city and county in the service area of the supplier (10631.1(a)).

According to the 2005-2009 American Community Survey of the United States Census Bureau, the median income in the City of Montebello in 2009 was $51,449. With a total number of households at 18,443 during that time period, approximately 48.5% have incomes less than the median, and 13% of all families live below the poverty level. (Reference: U.S. Census Bureau, 2005-2009 American Community Survey). From this information, it can be inferred that about 13% of the households within ML&WC's service area falls under the low-income category. The low-income water demands are estimated by taking the same percentage (13%) of the total residential water demands. It is assumed that the proportion of low-income households will remain unchanged in the future. Table 3-10 (DWR Table 8) lists the water demands for the low-income segment of ML&WC's service area.

Table 3-10 (DWR Table 8) Low-income projected water demands					
Low Income Water Demands[1]	2015	2020	2025	2030	2035 - opt
Single-family residential	126	129	131	134	137
Multi-family residential	179	183	187	191	195
Total	305	312	318	325	332

Units (circle one): acre-feet per year million gallons per year cubic feet per year

[1] Provide demands either as directly estimated values or as a percent of demand.

3.2 BASELINES AND TARGETS

Requirement

#1. An urban retail water supplier shall include in its urban water management plan . . . due in 2010 the baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data (10608.20(e)).

As previously mentioned, ML&WC is currently not delivering recycled water to any of its customers. Therefore, as shown in Table 3-11 (DWR Table 13), a 10-year base period, in compliance with Section 10608.20 of SBX7-7, is used to calculate ML&WC's baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use. The selected years are from

1995 to 2004. For the 5-year base period, to satisfy the requirements of Section 10608.22 of SBX7-7, the years from 2006 to 2010 are chosen.

Table 3-11 (DWR Table 13)
Base period ranges

Base	Parameter	Value	Units
10- to 15-year base period	2008 total water deliveries	3,414	*see below*
	2008 total volume of delivered recycled water	0	*see below*
	2008 recycled water as a percent of total deliveries	0	percent
	Number of years in base period[1]	10	years
	Year beginning base period range	1995	
	Year ending base period range[2]	2004	
5-year base period	Number of years in base period	5	years
	Year beginning base period range	2006	
	Year ending base period range[3]	2010	

Units (circle one): acre-feet per year million gallons per year cubic feet per year

[1] If the 2008 recycled water percent is less than 10 percent, then the first base period is a continuous 10-year period. If the amount of recycled water delivered in 2008 is 10 percent or greater, the first base period is a continuous 10- to 15-year period.

[2] The ending year must be between December 31, 2004 and December 31, 2010.

[2] The ending year must be between December 31, 2007 and December 31, 2010.

The basis of the service area population estimate, used in the baseline calculations, is the Population by Census Tract Numbers Table, which is available on the Bureau of Census website. Table 2-1 (DWR Table 2) presents ML&WC's service population. Service population for the base years (1995 to 2004) are in Table 3-12 (DWR Table 14).

Also shown in Table 3-12 (DWR Table 14) is the gross water use from 1995 to 2004, which is obtained from ML&WC's water records. By averaging the individual annual daily per capita water use, which is calculated for each of the years in the 10-year base period, the 20x2020 baseline daily per capita water use is determined to be 115 gallons per day per capita (gpcd).

Utilizing Method 1, as discussed in *Guidebook to Assist Urban Water Suppliers to Prepare a 2010 Urban Water Management Plan*, in which a flat rate of 20% is deducted from the baseline, the 2020 urban water use target is determined to be 92 gpcd. Using the same method, the interim target for 2015, reduced by 10% of the baseline, is determined to be 103 gpcd. The 2020 target is equal to the most recent five-year average of 92 gpcd; therefore, it can be inferred that ML&WC has already satisfied the requirements of the 20x2020 Water Conservation Plan.

Table 3-12 (DWR Table 14) Base daily per capita water use — 10- to 15-year range				
Base period year		Distribution System Population	Daily system gross water use (mgd)	Annual daily per capita water use (gpcd)
Sequence Year	Calendar Year			
Year 1	1995	30,045	3.32	110
Year 2	1996	30,178	3.61	120
Year 3	1997	30,311	3.84	127
Year 4	1998	30,445	3.64	120
Year 5	1999	30,578	3.64	119
Year 6	2000	30,711	3.51	114
Year 7	2001	30,862	3.47	112
Year 8	2002	31,013	3.47	112
Year 9	2003	31,163	3.31	106
Year 10	2004	31,314	3.44	110
Year 11				
Year 12				
Year 13				
Year 14				
Year 15				
			Base Daily Per Capita Water Use[1]	115

[1] *Add the values in the column and divid by the number of rows.*

To illustrate ML&WC's progress in attaining its goal to reduce its average per capita water use, Table 3-13 (DWR Table 15) calculates the baseline daily per capita water use for the chosen 5-year base period. It shows that between the years 2006 and 2010, the average per capita water use is cut down to 92 gpcd, which is equal to the 2020 target. This demonstrates that ML&WC has already met the 20% reduction aimed for 2020.

Table 3-13 (DWR Table 15) Base daily per capita water use — 5-year range				
Base period year		Distribution System Population	Daily system gross water use (mgd)	Annual daily per capita water use (gpcd)
Sequence Year	Calendar Year			
Year 1	2006	31,616	2.91	92
Year 2	2007	31,766	3.01	95
Year 3	2008	31,917	3.05	96
Year 4	2009	32,068	2.95	92
Year 5	2010	32,219	2.77	86
			Base Daily Per Capita Water Use[1]	92

[1] *Add the values in the column and divid by the number of rows.*

3.3 WHOLESALE AGENCY WATER DEMAND PROJECTIONS

Requirement

#33. Urban water suppliers that rely upon a wholesale agency for a source of water shall provide the wholesale agency with water use projections from that agency for that source of water in five-year increments to 20 years or as far as data is available. The wholesale agency shall provide information to the urban water supplier for inclusion in the urban water supplier's plan that identifies and quantifies, to the extent practicable, the existing and planned sources of water as required by subdivision (b), available from the wholesale agency to the urban water supplier over the same five-year increments, and during various water-year types in accordance with subdivision (c). An urban water supplier may rely upon water supply information provided by the wholesale agency in fulfilling the plan informational requirements of subdivisions (b) and (c) (10631(k)).

Montebello Land and Water Company does not rely on supplies from a wholesale water agency. Table 3-14 (DWR Table 12) presents the projected wholesale supplies.

Table 3-14 (DWR Table 12)
Retail agency demand projections provided to wholesale suppliers

Wholesaler	Contracted Volume[3]	2010	2015	2020	2025	2030	2035 -opt
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

3.4 WATER USE REDUCTION PLAN

Requirement

#2. Urban wholesale water suppliers shall include in the urban water management plans . . . an assessment of their present and proposed future measures, programs, and policies to help achieve the water use reductions required by this part (10608.36).

Montebello Land and Water Company is not a wholesale water supplier.

SECTION 4

SYSTEM SUPPLIES

4.1 WATER SOURCES

Requirement

#13. Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (a) (10631(b)).

The Montebello Land and Water Company (ML&WC) obtains its groundwater supply, extracted through seven (7) wells, from the Central Basin. In the last twelve (12) years, ML&WC has pumped an average of 3,732 AFY of groundwater, which has been sufficient to meet the service area's average demand of 3,662 AFY. In the future, ML&WC plans to continue extracting groundwater from Central Basin. Since ML&WC's wells are located at the north end of Central Basin, near the spreading grounds, there have not been any regular or frequent supply deficiencies within the service area. Table 4-1 (DWR Table 16) summarizes ML&WC current and projected water supply.

Table 4-1 (DWR Table 16)
Water supplies – current and projected

Water Supply Sources		2010	2015	2020	2025	2030	2035 - opt
Water purchased from[1]:	Wholesaler supplied volume (yes/no)						
Wholesaler 1 (enter agency name)							
Wholesaler 2 (enter agency name)							
Wholesaler 3 (enter agency name)							
Supplier-produced groundwater[2]		3,373	3,612	3,646	3,679	3,703	3,746
Supplier-produced surface water							
Transfers in							
Exchanges In							
Recycled Water		0	18.5	18.5	18.5	18.5	18.5
Desalinated Water							
Other							
Other							
Total		3,373	3,631	3,664	3,698	3,722	3,765

Units (circle one): acre-feet per year million gallons per year cubic feet per year

[1] Volumes shown here should be what was purchased in 2010 and what is anticipated to be purchased in the future. If these numbers differ from what is contracted, show the contracted quantities in Table 17.

[2] Volumes shown here should be consistent with Tables 17 and 18.

Imported Water

ML&WC currently does not have a connection to an imported water supply facility, and therefore does not purchase imported water, and there are no plans to import water in the future as the groundwater supply is

deemed sufficient and reliable to meet demands. Additionally, ML&WC does not have any connections to an imported water supply facility.

Table 4-2 (DWR Table 17) shows ML&WC's future imported supplies.

Table 4-2 (DWR Table 17)
Wholesale supplies – existing and planned sources of water

Wholesale sources[1,2]	Contracted Volume[3]	2015	2020	2025	2030	2035 - opt
N/A	N/A	N/A	N/A	N/A	N/A	N/A

Units (circle one): acre-feet per year million gallons per year cubic feet per year

[1] *Water volumes presented here should be accounted for in Table 16.*

[2] *If the water supplier is a wholesaler, indicate all customers (excluding individual retail customers) to which water is sold. If the water supplier is a retailer, indicate each wholesale supplier, if more than one.*

[3] *Indicate the full amount of water*

4.2 GROUNDWATER

Requirement

#4. (Is) groundwater . . . identified as an existing or planned source of water available to the supplier . . . (10631(b))?

Extraction of Groundwater and Allowed Pumping Allocation

The Central Basin is ML&WC's source of groundwater. Groundwater available to ML&WC is a combination of the Allowed Pumping Allocation (APA) and leases from the other members of the Central Basin Water Association (CBWA). ML&WC's APA of 1,624 AFY. The difference between the total demand and APA is supplemented by leases from others with rights in the Central Basin. ML&WC has seven (7) active wells, which have sufficient capacity to deliver the demand.

The location of ML&WC's groundwater wells is illustrated on Figure 4-1.

Leases and Sales of Water Rights

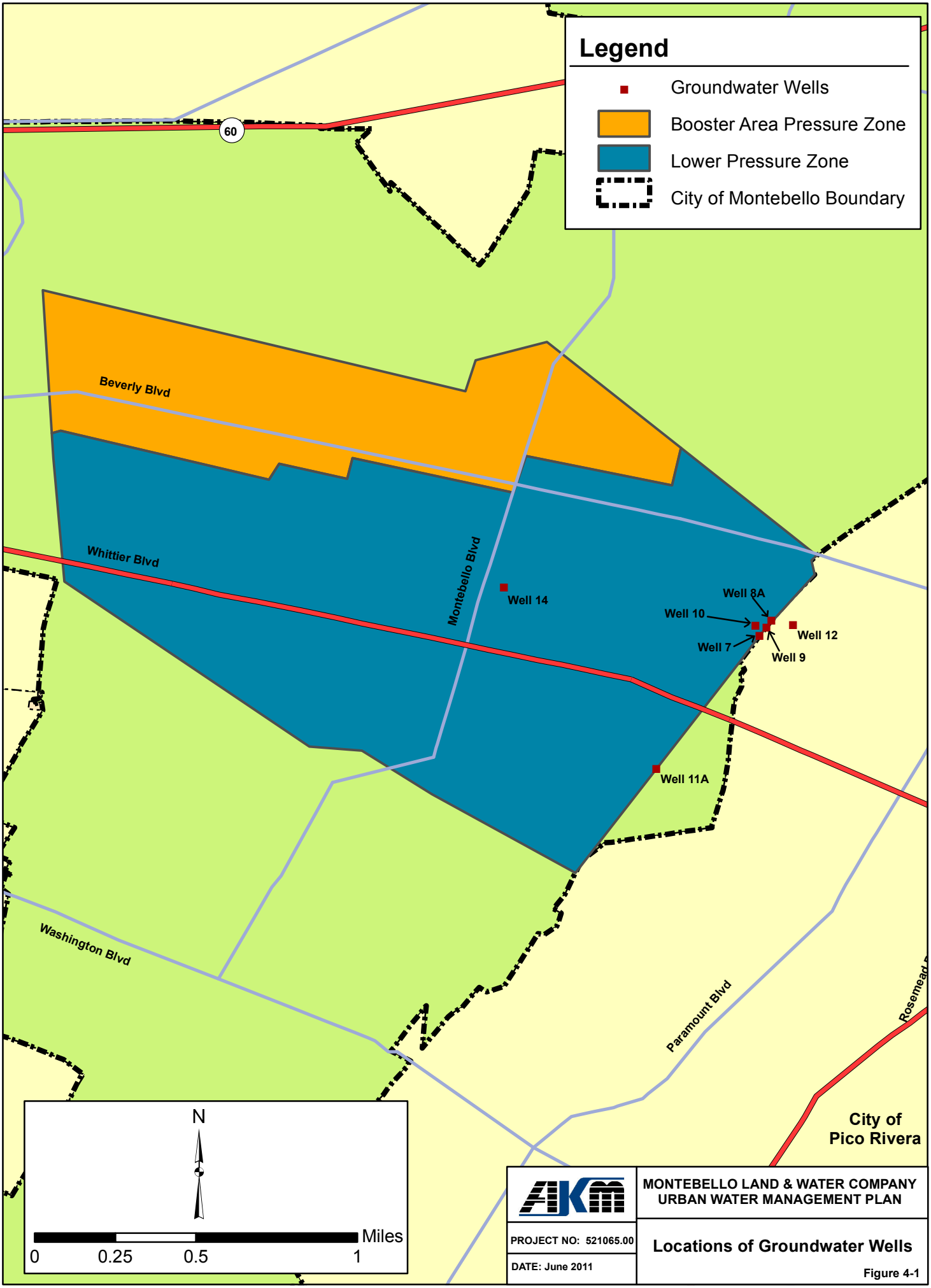
Water rights can be leased or sold among the parties within Central Basin. This enables parties to increase their supply without having to use the Exchange Pool, and at the same time not waste the surplus water capacity of the other parties. All forms regarding leases and sales of water rights can be found on http://www.water.ca.gov/watermaster. ML&WC plans on purchasing additional water rights when they become available.

Overextraction of Groundwater

In addition to the established water rights, the Central Basin Judgment (Judgment) permits water extractors to pump out more groundwater than the APA, on the condition that the extra amount is not more than 20% of the original APA (324.8 AFY for ML&WC) or 20 acre-feet, whichever is greater. Overextractions above the set limit must first be approved by the Watermaster.

Exchange Pool and Carryover

The Watermaster can also open the Exchange Pool, which provides additional water rights to parties that do not have other sources of supply in addition to groundwater. Additional water rights, either a Category A (a



MONTEBELLO LAND & WATER COMPANY
URBAN WATER MANAGEMENT PLAN

PROJECT NO: 521065.00

DATE: June 2011

Locations of Groundwater Wells

Figure 4-1

maximum of 150% of the party's APA (2,136 AF for ML&WC) or 100 acre-feet, whichever is greater) or a Category B (greater than 150% of the party's APA (2,136 acre-feet for ML&WC) or 100 acre-feet, whichever is greater), through the Exchange Pool may only be requested if the estimated demands exceed the combined APA and leases.

The additional water pumped through the Exchange Pool is supplemented by either Voluntary Subscription or Required Subscription offered by the other parties. A Voluntary Subscription allows any party to participate in the pool as long as its estimated demands are less than the projected supplies, and only the surplus supply may be offered. If the needs of the Exchange Pool are not met through Voluntary Subscriptions, parties that can purchase imported water from either the Metropolitan Water Distinct (MWD) or Central Basin Municipal Water District (CBMWD) will be mandated to participate in Required Subscriptions. Required Subscriptions are limited to 20% of the participating party's APA, and the party's combined water needs and Required Subscription is less than its total supplies.

The cost of the Exchange Pool water is calculated based on the weighted daily normal price charged by CBMWD for treated MWD water used by the exchangers; the incremental cost of pumping water in the basin, which is determined by multiplying Southern California Edison Company's schedule PA-1 rate by 560 kilowatt-hours per acre-foot; and the cost of the current replenishment assessment.

Any water that is purchased through the Exchange Pool but is not pumped is carried over onto the following fiscal year.

ML&WC is eligible to tap into the Exchange Pool in case there is a drastic increase in demand since its potable water supply mix only consists of groundwater.

Requirement

#15. (Provide a) copy of any groundwater management plan adopted by the urban water supplier, including plans adopted pursuant to Part 2.75 (commencing with Section 10750), or any other specific authorization for groundwater management (10631(b)(1)).

Watermaster

The California Department of Water Resources (DWR) is the appointed Watermaster to oversee the management of Central Basin and to enforce the provisions of the Judgment. The Watermaster's primary powers and responsibilities include the following:

- Require reports, information, and records from the parties
- Require all parties to install and maintain measuring devices used in extracting groundwater
- Inspect facilities that produce groundwater for compliance
- Prepare an annual report that reviews the following issues:
    - Groundwater extractions
    - Exchange Pool operations
    - Use of imported water
    - Violations of the Judgments and the corrective actions taken
    - Change of ownership of total water rights
    - Costs of Watermaster administration
    - Other recommendations that will provide for better management of the basin
- Prepare an annual budget
- Adopt and amend rules that will be beneficial to the enforcement of the Judgment and management of the basin

The Watermaster publishes an annual report that summarizes the status and management of the Basin. It discusses water conditions, water use, and operations. More specifically, updates on replenishment operations, status of the groundwater wells, the Alamitos Barrier Project, water quality, Exchange Pool, sales and leases of water rights, overextractions, water use, the Long Beach Conjunctive Use Program, imported

and exported water, recycled water, budget, groundwater clean-up, and the Meter Testing Program are included in the report.

As one of the parties benefitting from Central Basin, ML&WC complies with the regulations imposed by the Watermaster. A copy of the 2009-2010 Watermaster Service in the Central Basin Report is attached as Appendix B.

Additionally, the Water Replenishment District of Southern California (WRD) is the agency responsible for the replenishment of the Central Basin. WRD manages the Basin through the Regional Groundwater Monitoring Program, which is composed of approximately 200 WRD and USGS-installed monitoring wells throughout the Basin. The collected data from these monitoring wells are stored in a GIS database and analyzed to provide a better understanding of the condition of the Basin. This information is available in WRD's annual Regional Groundwater Monitoring Report. A copy of this report for the water year 2009-2010 is in Appendix C.

Requirement

#16. (Provide a) description of any groundwater basin or basins from which the urban water supplier pumps groundwater (10631(b)(2)).

ML&WC extracts groundwater from the Central Basin, which is one of the largest groundwater basins in Southern California, encompassing 24 incorporated cities with a total area of 277 square miles. Approximately 227 square miles lies within the service area of CBMWD, which includes the service area of ML&WC. It is bounded by the Newport-Inglewood Uplift on the southwest, the Los Angeles-Orange County Line on the southeast, and to the north are the boundary between the City of Los Angeles and the unincorporated area of East Los Angeles, and the foothills of Merced and Puente Hills. Central Basin is located in the southeastern portion of the Los Angeles County Coastal Plain. The allowed pumping allocation for Central Basin is 217,367 acre-feet of water each year.

Groundwater quality in the Central Basin is generally very good; however, there remain threats of contamination from adjacent basins, seawater intrusion, and migration of shallow contaminants into the deeper aquifers. Contaminants from the San Gabriel Valley aquifer are mitigated through the Central Basin Water Quality Protection Project (WQPP). Moreover, seawater intrusion is prevented by the Alamitos Barrier, located at the southwestern portion of the Central Basin.

Water Quality Protection Project

The contaminants in the San Gabriel Valley groundwater supply began to slowly seep into Central Basin through the Whittier Narrows in the 1980s. This prompted CBMWD to initiate the WQPP. Two wells in northern Pico Rivera are used to pump out the contaminated groundwater, which is then directed to the granular-activated carbon treatment facility located at the City of Whittier's Pumping Plant No.2 in Pico Rivera. Finally, the treated water is delivered to customers in the Cities of Pico Rivera, Santa Fe Springs, and Whittier (Reference: CBMWD, 2010).

Alamitos Barrier

To preserve the quality of groundwater in Central Basin and prevent seawater intrusion into the basin, the Alamitos Barrier was constructed in 1964. The Alamitos Barrier is located in the southwest section of Central Basin, near the Los Angeles-Orange County line. It is composed of a supply pipeline, injection wells, extraction wells, and observation wells. The injection wells are used to form a freshwater pressure ridge, and the extraction wells are intended to break the landward gradient of seawater. The injected water is a blend of imported water and reclaimed water. The imported water is purchased from MWD. The recycled water is from the Advanced Water Treatment Facility, which is operated by the Long Beach Water Department. Both imported and recycled water are purchased by the Water Replenishment District of Southern California (WRD). The water surface elevations and depth specific chloride levels are monitored through the observation wells. The Alamitos Barrier is operated and maintained by the County of Los Angeles Public Works (Reference: County of Los Angeles Public Works, 2010).

Requirement

#17. For those basins for which a court or the board has adjudicated the rights to pump groundwater, (provide) a copy of the order or decree adopted by the court or the board (10631(b)(2)).

The Central Basin Judgment (Judgment) was entered by the California State Superior Court for the County of Los Angeles on May 17, 1965. The Judgment adjudicated water rights in the Central Basin and appointed the DWR as Watermaster, who is responsible to account for and implement the management of the basin.

The Judgment has been amended several times since 1965. In 1980, it was amended to facilitate the conversion of a water year (October 1st to September 30th) to a fiscal year (July 1st to June 30th). The amendment in 1985 modified the annual budget. The Judgment was again amended in 1991 to update the carryover and overproduction provisions, define drought carryover, and provide exemptions to extractors who pump contaminated groundwater.

A copy of the 1965 Central Basin Judgment is included in Appendix D.

Requirement

#18. (Provide) a description of the amount of groundwater the urban water supplier has the legal right to pump under the order or decree (10631(b)(2)).

Central Basin Judgment

The Judgment established the Allowable Pumping Allocation (APA) from Central Basin at 217,367 acre-feet per year, which is shared among the different parties within the basin. The Judgment also allows unused water rights to be carried over onto the following fiscal year at a maximum of 20 percent of the water supplier's APA or 20 AFY, whichever is greater. In addition, parties are permitted to extract additional groundwater, the greater of 120% of their APA or 20 AFY. Greater amounts may be overextracted, but they will have to be approved by the Watermaster. All overextractions must be made up in the following fiscal year, unless such requirement would cause hardship on the Party. The Judgment also authorizes an Exchange Pool, specifically designed for parties, such as ML&WC, whose only source of potable water supply is Central Basin.

ML&WC's APA is 1,624 AFY. Additional demand is met though leases. The leased amounts may vary from year to year. In 2010, ML&WC leased a net total of 1,696 acre-feet of groundwater from California Water Service Company, City of Downey, Lunday-Thagardi Oil Company, Orchard Dale Water District, Paramount Unified School District, and Whittier Union High School District. The total allowable carryover onto fiscal year 2010-2011 is 616 acre-feet.

Requirement

#19. For basins that have not been adjudicated, (provide) information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current official departmental bulletin that characterizes the condition of the groundwater basin, and a detailed description of the efforts being undertaken by the urban water supplier to eliminate the long-term overdraft condition (10631(b)(2)).

As previously stated, Central Basin is ML&WC's only source of groundwater. It was adjudicated in 1965 per the Central Basin Judgment. Amendments were made in 1980, 1985, and 1991.

4.3 GROUNDWATER SUPPLIES DURING THE PAST FIVE YEARS

Requirement

#20. (Provide a) detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records (10631(b)(3)).

ML&WC has no ability to import water, and Central Basin is currently its only source of potable water. As shown in Table 3-1, groundwater production has been in steady decline since 1999, with the exception of 2005 and 2006. The average volume of extracted groundwater from the 1999 to 2010 period was 3,732 AFY. For the years 2006 to 2010, the average was down to 3,558 AFY. The decrease in water production is consistent with the declining demand.

Due to ML&WC's strategic location at the north end of the Central Basin near the spreading grounds, supply deficiencies have not been a problem for ML&WC.
Currently, there are no indications of immediate threats to ML&WC's groundwater supply since methods, such as WQPP and the Alamitos Barrier, are already in place to mitigate issues of contaminants and seawater intrusion. The existing wells are adequate to meet ML&WC's potable water demands. No additional development is planned in the future as the service area is already built out. Therefore, no significant increase in water demand is anticipated.

Table 4-3 (DWR Table 18) displays the amount of groundwater pumped since 2006.

Table 4-3 (DWR Table 18)
Groundwater – volume pumped

Basin name(s)	Metered or Unmetered[1]	2006	2007	2008	2009	2010
Central Basin	Metered	3,544	3,686	3,648	3,538	3,373
Total groundwater pumped		3,544	3,686	3,648	3,538	3,373
Groundwater as a percent of total water supply		100%	100%	100%	100%	100%

Units (circle one): acre-feet per year million gallons per year cubic feet per year
[1] Indicate whether volume is based on volumeteric meter data or another method

4.4 FUTURE GROUNDWATER SUPPLY

Requirement
#21. (Provide a) detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the urban water supplier. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records (10631(b)(4)).

As previously mentioned, ML&WC's service area is already built out, and no land is available for future development. Consequently, no significant increase in water demand is anticipated, and the future groundwater supply can be provided through ML&WC's APA and leases, as outlined in the Judgment. Historically, this volume of groundwater is sufficient to meet demands, and surpluses have been available in the recent years. ML&WC will pursue purchasing additional water rights in the future.

Table 4-4 (DWR Table 19) presents the estimates of ML&WC's future groundwater supply.

Table 4-4 (DWR Table 19) Groundwater — volume projected to be pumped					
Basin name(s)	2015	2020	2025	2030	2035 - opt
Central Basin (APA)	1,624	1,624	1,624	1,624	1,624
Central Basin (Leases)	1,988	2,022	2,055	2,079	2,122
Total groundwater pumped	3,612	3,646	3,679	3,703	3,746
Percent of total water supply	99.49%	99.50%	99.50%	99.50%	99.51%
Units (circle one): acre-feet per year million gallons per year cubic feet per year					
Include future planned expansion					

4.5 TRANSFER OPPORTUNITIES

Requirement

#24. Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis (10631(d)).

While the Judgment allows leases of APA among member agencies in the Central Basin, including ML&WC, no new transfers and exchanges of water, either on a short-term or long-term basis, are presently proposed.

Table 4-5 (DWR Table 20) shows future transfer and exchange opportunities.

Table 4-5 (DWR Table 20) Transfer and exchange opportunities			
Transfer agency	Transfer or exchange	Short term or long term	Proposed Volume
N/A	N/A	N/A	N/A
Total			
Units (circle one): acre-feet per year million gallons per year cubic feet per year			

4.6 DESALINATED WATER OPPORTUNITIES

Requirement

#31. Describe the opportunities for development of desalinated water, including, but not limited to, ocean water, brackish water, and groundwater, as a long-term supply (10631(i)).

No developments for desalinated water are presently proposed. ML&WC's service area, as well as the entire Central Basin, are landlocked and have no direct access to ocean water for desalination.

4.7 RECYCLED WATER OPPORTUNITIES

Requirement

#44. Provide, to the extent available, information on recycled water and its potential for use as a water source in the service area of the urban water supplier. The preparation of the plan shall be coordinated with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area (10633).

Recycled water is currently not being used within the service area of ML&WC. However, the future completion

of CBMWD's Southeast Water Reliability Project (SWRP) Phase 1 will supply recycled water to Henry Acuna Park, which is located within ML&WC's service area. The estimated recycled water demand at this location is 18.5 AFY.

Henry Acuna Park is approximately three (3) acres in size and uses an average of 19.1 AFY of water. It is served from the Booster Area Pressure Zone through a 3-inch meter. Approximately 18.5 AFY of the total demand is used for irrigation.

4.8 WASTEWATER COLLECTION AND TREATMENT SYSTEM

Requirement

#45. (Describe) the wastewater collection and treatment systems in the supplier's service area, including a quantification of the amount of wastewater collected and treated and the methods of wastewater disposal (10633(a)).

Raw sewage from the service area is collected by sewer trunks owned and operated by the County Sanitation Districts of Los Angeles County (CSDLAC). CBMWD then purchases approximately 55 MGD of the tertiary-treated recycled water from the San Jose Creek Water Recycling Plant (San Jose Creek) and Los Coyotes Water Recycling Plant (Los Coyotes), which are both operated by CSDLAC.

The San Jose Creek has a treatment capacity of 100 MGD. Approximately 71 MGD is recycled and reused at 17 various locations in the County of Los Angeles (County), including the Montebello Spreading Grounds and other areas that require irrigation. The treated effluent from San Jose Creek meets water quality guidelines set forth by the National Pollution Discharge Elimination System (NPDES), including chloride levels below 180 mg/L and daily maximum final effluent turbidity of 3.4 NTU. After disinfection and dechlorination, the remaining effluent, not distributed as recycled water, is discharged to the San Gabriel River for groundwater recharge.

The Los Coyotes has a capacity to treat 37 MGD of wastewater and distributes approximately 27 MGD of the recycled water to various locations that require irrigation and industrial uses, such as carpet dying and concrete mixing. To ensure the high quality of treated water that is delivered to recycled water customers, CSDLAC operates testing laboratories at its plants, including the San Jose Creek Water Quality Lab and Treatment Plant Laboratories.

The treatment process at both San Jose Creek and Los Coyotes begins with the collection of wastewater from CSDLAC's sewer trunk system. Following secondary treatment, the treated water is coagulated, flocculated, filtrated, and disinfected to complete the tertiary treatment process. The effluent meets all requirements of the California Code of Regulations Title 22. CSDLAC has previously determined that expansion of these two plants will not be necessary, despite the expected increase in population, because the service area is built out.

From the San Jose Creek and Los Coyotes plants, CBMWD distributes recycled water to its customers through the E. Thornton Ibbetson Century Water Recycling Project (Ibbetson Project) and the Esteban E. Torres Rio Hondo Water Recycling Project (Torres Project). Currently, the Ibbetson Project and the Torres Project deliver recycled water to customers in the Cities of Bellflower, Bell, Bell Gardens, Commerce, Compton, Cudahy, Downey, Huntington Park, Lakewood, Lynwood, Norwalk, Paramount, Pico Rivera Santa Fe Springs, South Gate, and Whittier (Reference: CBMWD UWMP 2005).

Upon completion of the SWRP Phase 1, which will link the Ibbetson and Torres Projects, CBMWD's recycled water distribution will increase in portions of the City Pico Rivera and the northern section of the City of Montebello, which will encompass the service area of ML&WC. ML&WC is expected to receive approximately 18.5 AFY of recycled water from SWRP Phase 1.

Table 4-6 (DWR Table 21) lists the amount of wastewater that is collected and treated at Los Coyotes and San Jose Creek and the volume that meets the recycled water standard, as reported in CBMWD's 2010

UWMP. The raw sewage is collected from CSDLAC's service area.

Table 4-6 (DWR Table 21) Recycled water – wastewater collection and treatment							
Type of Wastewater	2005	2010	2015	2020	2025	2030	2035 - opt
Wastewater collected & treated in service area			110,000	135,000	145,000	154,000	154,000
Volume that meets recycled water standard			110,000	135,000	145,000	154,000	154,000
Units (circle one): acre-feet per year million gallons per year cubic feet per year							

4.9 TREATED WASTEWATER THAT MEETS RECYCLED WATER STANDARDS

Requirement

#46. (Describe) the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project (10633(b)).

As previously mentioned, not all the wastewater that goes through the recycling plants are reused. Only about one-third is delivered to recycled water customers. The rest of the unused treated water, following disinfection and dechlorination, is discharged to the San Gabriel River, to other major flood control channels, and finally to the ocean.

The delivery of recycled water to potential customers is primarily limited by the lack of infrastructure. However, with the future completion of SWRP, recycled water use will definitely increase since more customers will be connected to CBMWD's recycled water distribution system.

Table 4-7 (DWR Table 22) shows the amount of treated wastewater that is not used as recycled water, from CSDLAC, as quantified in CBMWD's 2010 UWMP.

Table 4-7 (DWR Table 22) Recycled water – non-recycled wastewater disposal							
Method of disposal	Treatment Level	2010	2015	2020	2025	2030	2035 - opt
Discharged to San Grabriel River	Tertiary Level		77,850	79,600	78,350	82,100	82,100
	Total		77,850	79,600	78,350	82,100	82,100
Units (circle one): acre-feet per year million gallons per year cubic feet per year							

4.10 EXISTING RECYCLED WATER USE

Requirement

#47. (Describe) the recycled water currently being used in the supplier's service area, including, but not limited to, the type, place, and quantity of use (10633(c)).

Recycled water is currently unavailable at ML&WC's service area due to the lack of infrastructure for deliveries.

4.11 POTENTIAL RECYCLED WATER USES

Requirement

#48. (Describe and quantify) the potential uses of recycled water, including, but not limited to, agricultural irrigation, landscape irrigation, wildlife habitat enhancement, wetlands, industrial reuse, groundwater recharge, indirect potable reuse, and other appropriate uses, and a determination with regard to the technical and economic feasibility of serving those uses (10633(d)).

The SWRP Phase 1 intends to expand CBMWD's recycled water service to several locations in the Cities of Pico Rivera and Montebello via a 30-inch main line. Upon completion, the recycled water from this proposed pipeline will be utilized for groundwater recharge at the San Gabriel and Rio Hondo Spreading Grounds and for landscape irrigation.

One of ML&WC's customers has been identified as a potential customer that will utilize the recycled water for irrigation purposes. The estimated recycled water demand at Henry Acuna Park is 18.5 AFY. There are no other potential recycled water customers that have been identified within ML&WC's service area.

Potential recycled water use in the future is shown in Table 4-8 (DWR Table 23).

Table 4-8 (DWR Table 23)
Recycled water – potential future use

User type	Description	Feasibility[1]	2015	2020	2025	2030	2035 - opt
Agricultural irrigation							
Landscape irrigation[2]	Henry Acuna Park		18.5	18.5	18.5	18.5	18.5
Commercial irrigation[3]							
Golf course irrigation							
Wildlife habitat							
Wetlands							
Industrial reuse							
Groundwater recharge							
Seawater barrier							
Getothermal/Energy							
Indirect potable reuse							
Other (user type)							
Other (user type)							
Total			18.5	18.5	18.5	18.5	18.5

Units (circle one): acre-feet per year million gallons per year cubic feet per year

[1] *Technical and economic feasibility.*

[2] *Includes parks, schools, cemeteries, churches, residential, or other public facilities)*

[3] *Includes commercial building use such as landscaping, toilets, HVAC, etc) and commercial uses (car washes, laundries, nurseries, etc)*

Requirement

#49. (Describe) the projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected pursuant to this subdivision (10633(e)).

The discussion of recycled water and its potential uses were not included in ML&WC's 2005 Urban Water Management Plan (UWMP). At that time, no plans of constructing a recycled water pipeline through the service area were finalized, and the potential customers had not been identified. As recently as early 2011, recycled water remains excluded from ML&WC's water supply mix.

Table 4-9 (DWR Table 24) compares the 2010 recycled water use projected in the 2005 UWMP and the actual use in 2010.

Table 4-9 (DWR Table 24)
Recycled water — 2005 UWMP use projection compared to 2010 actual

Use type	2010 actual use	2005 Projection for 2010[1]
Agricultural irrigation	0	0
Landscape irrigation[2]	0	0
Commercial irrigation[3]	0	0
Golf course irrigation	0	0
Wildlife habitat	0	0
Wetlands	0	0
Industrial reuse	0	0
Groundwater recharge	0	0
Seawater barrier	0	0
Getothermal/Energy	0	0
Indirect potable reuse	0	0
Other (user type)		
Other (user type)		
Total	0	0

Units (circle one): acre-feet per year million gallons per year cubic feet per year

[1] From the 2005 UWMP. There has been some modification of use types. Data from the 2005 UWMP can be left in the

[2] Includes parks, schools, cemeteries, churches, residential, or other public facilities)

[3] Includes commercial building use such as landscaping, toilets, HVAC, etc) and commercial uses (car washes, laundries,

4.12 ACTIONS AND INCENTIVES TO ENCOURAGE RECYCLED WATER USE

Requirement

#50. (Describe the) actions, including financial incentives, which may be taken to encourage the use of recycled water, and the projected results of these actions in terms of acre-feet of recycled water used per year (10633(f)).

In an effort to encourage an increase in recycled water usage, CBMWD markets recycled water not only as a water conservation tool but also as a less expensive, more reliable alternative to potable water. CBMWD's marketing efforts may not be quantifiable, but the recent years have shown a consistent increase in recycled water demand throughout CBMWD's service area. Current customers include golf courses, parks, and commercial and industrial users.

One incentive that CBMWD offers is the lower rates for recycled water compared to the rates charged for potable water. However, since ML&WC does not have imported potable water, this incentive is not fully realized by ML&WC customers that may convert to recycled water. Central Basin Municipal Water District offers loans to customers, who would like to convert to recycled water but lack the funds to do so. The loan is used for plumbing retrofit expenses and is reimbursed through future water bills up to ten (10) years. The

amortization rate of the loan is between the potable and recycled water rates, so that the total month-to-month recycled water bill will not be greater than the potable water rate. Once the loan is paid, the customer will be billed at the current recycled water rate. Again, since the ML&WC customers do not purchase potable imported water, this benefit may not be realized.

Table 4-10 (DWR Table 25) quantifies the results of the incentives that encourage recycled water use.

Table 4-10 (DWR Table 25)
Methods to encourage recycled water use

Actions	Projected Results					
	2010	2015	2020	2025	2030	2035 - opt
Financial incentives						
Loans for Plumbing Retrofits	**0**	**18.5**	**18.5**	18.5	18.5	18.5
name of action						
Total	0	18.5	18.5	18.5	18.5	18.5

Units (circle one): acre-feet per year million gallons per year cubic feet per year

Note that projected results are unavailable in 2010 since no recycled water was delivered to Henry Acuna Park during that time, prior to the completion of SWRP Phase 1.

4.13 PLAN FOR OPTIMIZING THE USE OF RECYCLED WATER

Requirement

#51. (Provide a) plan for optimizing the use of recycled water in the supplier's service area, including actions to facilitate the installation of dual distribution systems, to promote recirculating uses, to facilitate the increased use of treated wastewater that meets recycled water standards, and to overcome any obstacles to achieving that increased use (10633(g)).

ML&WC plans to optimize the use of recycled water within its service area by discontinuing deliveries of potable water to Henry Acuna Park for irrigation purposes. When SWRP Phase 1 becomes operational, the park will exclusively obtain water for irrigation from CBMWD.

It is not economically feasible for ML&WC to develop its own recycled water system due to its small size and the lack of additional potential customers within its service area. Consequently, it relies on CBMWD to supply its recycled water needs and expand the recycled water system if deemed feasible.

4.14 FUTURE WATER PROJECTS

Requirement

#30. (Describe) all water supply projects and water supply programs that may be undertaken by the urban water supplier to meet the total projected water use as established pursuant to subdivision (a) of Section 10635. The urban water supplier shall include a detailed description of expected future projects and programs, other than the demand management programs identified pursuant to paragraph (1) of subdivision (f), that the urban water supplier may implement to increase the amount of the water supply available to the urban water supplier in average, single-dry, and multiple-dry water years. The description shall identify specific projects and include a description of the increase in water supply that is expected to be available from each project. The description shall include an estimate with regard to the implementation timeline for each project or program (10631(h)).

Since ML&WC's service area lacks available land that is suitable for development and densification, no significant increase in water demand is feasible in the future. Consequently, projects designed to increase water supply are presently not planned.

Table 4-11 (DWR Table 26) lists the future water supply projects.

Table 4-11 (DWR Table 26)
Future water supply projects

Project name[1]	Projected start date	Projected completion date	Potential project constraints[2]	Normal-year supply[3]	Single-dry year supply[3]	Multiple-dry year first year supply[3]	Multiple-dry year second year supply[3]	Multiple-dry year third year supply[3]
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Total	0	0	0	0	0	0

Units (circle one): acre-feet per year million gallons per year cubic feet per year

[1] Water volumes presented here should be accounted for in Table 16.

2Indicate whether project is likely to happen and what constraints, if any, exist for project implementation.

[3] Provide estimated supply benefits, if available.

SECTION 5

WATER SUPPLY RELIABILITY AND WATER SHORTAGE CONTINGENCY PLANNING

5.1 WATER SUPPLY RELIABILITY

Requirement

#5. An urban water supplier shall describe in the plan water management tools and options used by that entity that will maximize resources and minimize the need to import water from other regions (10620(f)).

The Montebello Land and Water Company (ML&WC) serves customers exclusively with groundwater from Central Basin. Although this source is deemed reliable and adequate, ML&WC practices rigorous water conservation programs to maximize the available supply. ML&WC currently does not import water and no purchases are planned for the future. Recycled water from Central Basin Municipal Water District (CBMWD) will be utilized for irrigation at Henry Acuna Park, following the completion of the Southeast Water Reliability Project (SWRP) Phase 1. This will further reduce the demand for potable water. There are also conservation programs designed to encourage customers to reduce their water consumption, which are discussed in Section 6.

Requirement

#23. For any water source that may not be available at a consistent level of use, given specific legal, environmental, water quality, or climatic factors, describe plans to supplement or replace that source with alternative sources or water demand management measures, to the extent practicable (10631(c)(2)).

Since imported water does not contribute to the supply mix, ML&WC relies solely on the quality and availability of groundwater from the Central Basin. During the recent drought years, ML&WC was able to meet demands through its Allowed Pumping Allocation (APA) and leases. Presently, there are no immediate threats to the quality of water, and groundwater supply is deemed sufficient and reliable. A more detailed discussion of water quality is discussed later in this section.

Table 5-1 (DWR Table 29) lists the factors that could affect the consistency of water supply.

Table 5-1 (DWR Table 29)
Factors resulting in inconsistency of supply

Water supply sources[1]	Specific source name, if any	Limitation quantification	Legal	Environmental	Water quality	Climatic	Additional information
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Units (circle one): acre-feet per year million gallons per year cubic feet per year

[1] *From Table 16.*

5.2 WATER SHORTAGE CONTINGENCY PLANNING

Requirement

#37. Actions to be undertaken by the urban water supplier to prepare for, and implement during, a catastrophic interruption of water supplies including, but not limited to, a regional power outage, an earthquake, or other disaster (10632(c)).

To further prepare for water shortages, the City of Montebello (City) adopted Ordinance No. 2333 on July 22, 2009. Under this ordinance, Chapter 8.29 ("Water Conservation and Water Supply Shortage Program") was added to the Municipal Code, outlining stringent prohibitions and penalties that will be enforced following a water crisis, caused by prolonged drought or any other disasters. A water shortage will be identified as a Level 1, 2, or 3 depending on the severity of the crisis. The prohibitions and penalties have varying degrees of strictness that correspond to each of the water crisis levels.

Additionally, the ordinance mandates the implementation of several permanent water conservation practices at all times, even when there is no foreseeable threat of a water shortage. The permanent prohibitions will be continually in effect at all levels of water shortage declarations in addition to the prohibitions specific to each level. The City will determine when and at which level a water shortage declaration is necessary, and both customers and water purveyors that operate within the City will be required to abide by the provisions of Ordinance No. 2333.

Public hearings will be held prior to the declaration of each level to evaluate the extent of the water shortage and to inform customers about the water crisis. The mandatory requirements of Levels 1, 2, or 3 will be implemented on the tenth (10th) day following the declaration of the water supply shortage. The City and water purveyors will print the declaration on community publications within five (5) days to inform the customers of the commencement of the prohibitions. If a water allocation becomes necessary, customers will be informed by mail at their individual billing address.

A water customer may request to be exempt from the provisions of the water conservation plan if he/she can provide documentation that such restrictions will cause unfair hardship on him/her. Within ten (10) days of submittal, the application will be reviewed by the City Engineer, who will then issue a final approval, conditional approval, or rejection of the request for exemption. The water customer may then file a written appeal to the City Council, who will then grant or deny the appeal.

Requirement

#38. Additional, mandatory prohibitions against specific water use practices during water shortages, including, but not limited to, prohibiting the use of potable water for street cleaning (10632(d)).

During a water shortage crisis, certain mandatory restrictions on water use will be imposed on the public in addition to the permanent prohibitions that are already enforced regardless of whether there is crisis or not. Levels 1 to 3 prohibitions will be progressively implemented according to the severity of the water crisis. Table 5-2 (DWR Table 36) lists the mandatory water conservation practices that correspond to each of the levels. Note that Level 1 prohibitions are similar to the permanent prohibitions, except that the time frames for certain activities are shorter at Level 1. For example, the leakages at service connections and other segments of the distribution system must be repaired within seven (7) days of notification from the City or the other water purveyors, but during a Level 1 and a Level 2 crisis, this time frame is shortened to seventy-two (72) and forty-eight (48) hours, respectively.

Table 5-2 (DWR Table 36)
Water shortage contingency — mandatory prohibitions

Examples of Prohibitions	Stage When Prohibition Becomes Mandatory
Using potable water for street washing	
Watering or irrigation of lawn, landscape, or other vegetated area with potable water between 10:00am and one (1) hour before sunset, except when a hand-held bucket or a hand-held hose with a self-closing shut-off nozzle is used	Permanent
Watering or irrigation of lawn, landscape, or other vegetated area with potable water with an unattended irrigation system for a maximum of only fifteen (15) minutes per day, except when a very low-flow drip type irrigation system, or weather-based controllers, or sprinklers with a 70% efficiency is used	Permanent
Excessive watering or irrigating of lawns, landscapes or other vegetated areas that causes runoff onto adjoining properties or paved areas, gutters, and ditches	Permanent
Washing paved surfaces, such as sidewalks, walkways, driveways, parking areas, tennis courts, patios or alleys, except when it is necessary to prevent safety and health hazards, and with the use of hand-held bucket, hose with a self-closing water shut-off device, a water broom, or a high-pressure cleaning machine that recycles any water used	Permanent
Fix leaks, breaks, or other malfunctions in the water system, including the water customer's service connection and segments maintained by the water purveyor, within seven (7) days of receiving notice from the City	Permanent
Installation of water fountains and other decorative water features that do not utilize re-circulated water	Permanent
Using potable water for washing or cleaning any vehicle, except when a hand-held bucket or a hose with a self-closing water shut-off nozzle is used	Permanent
Install an on-site water recycling system at commercial vehicle washing facilities and commercial laundry facilities	Permanent
Establishments that sell food and drinks, such as restaurants, hotels, bars, cafes, etc., may only serve water to customers upon request	Permanent
Installation of single pass cooling systems in buildings in need of new water service	Permanent
Utilize water-conserving dish wash spray valves at food preparation establishments, such as restaurants and cafes	Permanent
Construction meters for landscape irrigation may not be used from 10:00am to one (1) hour before sunset	Permanent
Private swimming pools, spas, ponds, and artificial lakes may not be filled or refilled from 10:00am to one (1) hour before sunset, and covers need to be in place on pools and spas at least five (5) days a week, except when the facility is in use, to minimize evaporation	Permanent
Prohibition of filling and refilling decorative pond or lakes, except when such ponds or lakes are necessary to sustain aquatic life, and such aquatic life has a significant value and has been managed in the same ponds or lakes prior to the declaration of the water shortage	Level 2

Table 5-2 (DWR Table 36) - Continued Water shortage contingency — mandatory prohibitions	
Examples of Prohibitions	**Stage When Prohibition Becomes Mandatory**
Prohibition of filling and refilling more than one (1) foot in depth of residential pools and spas with potable water	Level 2
Prohibition of landscape irrigation, except when the landscape is necessary for fire protection, soil erosion control, protection of plants identified as rare or a protected species, or within public parks, playing fields, daycare centers, golf course greens and school grounds	Level 3
Prohibition of new potable water service, temporary or permanent, except when a valid, unexpired building permit has already been issued; the project is necessary for public health, safety, and welfare; or the City determines that the water demands of the project will be offset before the provision of the new water meter	Level 3
No new building permits will be issued for projects that will require new or additional water service, except when the project is necessary for public health, safety, and welfare; or the project meets water conservation requirements	Level 3
Water purveyors may be required by the City to discontinue service to any water customer, who is believed to be in constant violation of the water conservation plan	Level 3

Requirement

#39. Consumption reduction methods in the most restrictive stages. Each urban water supplier may use any type of consumption reduction methods in its water shortage contingency analysis that would reduce water use, are appropriate for its area, and have the ability to achieve a water use reduction consistent with up to a 50 percent reduction in water supply (10632(e)).

Consumption reduction methods are listed in Table 5-3 (DWR Table 37). The severity of the water shortage will influence which methods will be implemented. A Level 3 water shortage will target the execution of all consumption reduction methods. Water savings estimates are based on the amount of reduction needed at each stage of the water shortage. The permanent prohibitions are expected to reduce consumption by 5%. A Level 1 shortage will reduce supply by up to 10%, so a 10% reduction in consumption will be required. For a Level 2 shortage, between 10% and 20% of supply will be lost, so a consumption reduction of about 20% will be necessary. For Level 3, more than 20% of supply will be unavailable, and mandatory consumption reduction will have to be approximately 25%.

Table 5-3 (DWR Table 37) Water shortage contingency — consumption reduction methods		
Consumption Reduction Methods	**Stage When Method Takes Effect**	**Projected Reduction (%)**
Encourage participation in water conservation programs	-	5%
Take advantage of rebates on water-efficient appliances	-	
Enforce Level 1 prohibitions and fines	1	10%
Enforce Level 2 prohibitions and fines	2	20%
Enforce Level 3 prohibitions and fines	3	25%

Requirement

#40. Penalties or charges for excessive use, where applicable (10632(f)).

The City enforces the fines and penalties on violations of the water shortage contingency plan.

Fines will be imposed on customers who fail to comply with the provisions of the City's "Water Conservation and Water Supply Shortage Program" as detailed in Chapter 8.29 of the Municipal Code through Ordinance No. 2333. All penalties and charges apply to each of the water shortage crisis levels. The fines and penalties are listed in Table 5-4 (DWR Table 38).

Table 5-4 (DWR Table 38)
Water shortage contingency — penalties and charges

Penalties or Charges	Stage When Penalty Takes	
Penalty for excess use		
Charge for excess use		
The City of Montebello may prosecute any violation as a misdemeanor, which may be subjected to imprisonment of up to thirty (30) days, or a fine of up to one thousand dollars ($1,000.00), or both.	Upon the City's discretion	Upon the City's discretion
The City of Montebello mails a copy of Ordinance No. 2333 via USPS mail and issues a written warning.	1 to 3	1st Violation
The non-compliant water customer gets a fine up to a maximum of one hundred dollars ($100.00).	1 to 3	2nd Violation
The non-compliant water customer gets a fine up to a maximum of two hundred fifty dollars ($250.00).	1 to 3	3rd Violation
The non-compliant water customer gets a fine up to a maximum of five hundred dollars ($500.00).	1 to 3	4th & Subsequent
In addition to fines, ML&WC may be required to install a flow restrictor device with capacity of one (1) gallon per minute for services up to one and one-half inch in size and larger restrictors for larger services. The flow restrictor will be in place for at least forty-eight (48) hours.	1 to 3	4th & Subsequent Violations
In addition to fines and flow restrictor, ML&WC may be required to discontinue the non-compliant customer's water service for repeated violations of mandatory restrictions.	1 to 3	4th & Subsequent Violations

A written Notice of Violation will be sent via United States Postal Service (USPS) first class mail or personal delivery to the non-compliant water customer at least ten days before penalties are imposed. The customer will then have the opportunity to contest the violation by submitting a written notice of appeal, and a hearing will be scheduled. Within ten days of the scheduled hearing, a written notice of the hearing will be sent to the water customer and to ML&WC via USPS first class mail.

Requirement

#41. An analysis of the impacts of each of the actions and conditions described in subdivisions (a) to (f), inclusive, on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts, such as the development of reserves and rate adjustments (10632(g)).

To illustrate the potential financial impact of a 10% to 50% reduction in water demand, total deliveries and production for 2010 have been used. Listed below are the assumptions made:

- Revenue is calculated using the average usage rates for the Low PSI Zone and the Booster Zone. For the Low PSI Zone, the rates are as follows: For single family residential and government - $1.69 per ccf for the first 20 ccf, $1.89 per ccf for 21 to 31 ccf, and $2.09 per Ccf for consumption greater than 32 ccf. All water usage is charged $2.02 per ccf for multi-family residential, commercial, an industrial customers. For the Booster Zone, the rates are $0.06 higher for all customers and

categories. The average usage charge, based on the rates, is $1.935 per ccf (Reference: Montebello Land & Water Company).

- Groundwater production is billed at a rate of $205 per acre-foot for APA, and at APA plus lease rates leased water. The total rate for leased water is $375 per acre-foot. Water Replenishment District will increase the Rate Assessment to $244 per acre-foot beginning July 1, 2011.
- The amount of water that is unaccounted for is the difference between the total well production, which is also decreased by the same percentage as the reduction in demand, and total demand. Unaccounted for water is due to system flushing, leaks, and the difference between the accuracies of the production and sales meters.
- Cost of operations and maintenance is not reduced because it is assumed to remain constant during the water shortage period.
- The water shortage is assumed to last one year.

Table 5-5 shows the total demand at each stage of reduction and the corresponding projected production. As demand falls due to a mandatory consumption reduction, the amount of groundwater production will also decrease. The total well production at every level of reduction is estimated to be the sum of the total potable water demand and water losses.

Table 5-5
Demand and Production Volumes at Each Reduction Stage

WATER VOLUMES (AFY)	BASELINE YEAR (2010)	With 10% Reduction	With 20% Reduction	With 25% Reduction	With 50% Reduction
Total Demand	**3,098**	**2,788**	**2,478**	**2,324**	**1,549**
Total Well Production	**3,373**	**3,006**	**2,672**	**2,505**	**1,670**
Expected Water Loss	**275**	**217**	**193**	**181**	**121**

Table 5-6 exemplifies that a significant drop in demand will cause the revenue to plummet as well. A profit shortfall, relative to the baseline year, of 5% can be expected at a 10% reduction, 10% at a 20% reduction, 13% at a 25% reduction, and 26% at a 50% reduction in demand.

Table 5-6
Revenue and Supply Costs at Each Demand Reduction Stage

	BASELINE YEAR (2010)	With 10% Reduction	With 20% Reduction	With 25% Reduction	With 50% Reduction
Revenue from Sales	**$ 2,634,893.89**	**$ 2,371,404.50**	**$ 2,107,915.11**	**$ 1,976,170.42**	**$ 1,317,446.95**
Cost of Supply	**$ 988,671.25**	**$ 851,057.13**	**$ 725,819.67**	**$ 663,200.94**	**$ 350,107.29**
Revenue minus Supply Cost	**$ 1,646,222.64**	**$ 1,520,347.38**	**$ 1,382,095.45**	**$ 1,312,969.48**	**$ 967,339.65**
diff compared to baseline		**$ (125,875.27)**	**$ (264,127.20)**	**$ (333,253.16)**	**$ (678,882.99)**
diff with baseline revenue		**-5%**	**-10%**	**-13%**	**-26%**

In the event that ML&WC's revenues and expenditures are gravely affected by a water shortage, the following measures are proposed to alleviate the financial impacts:

- Rate Adjustment
- Development of Reserves
- Decrease in Capital Expenditure
- Decrease in O&M Expenditure

These measures will somewhat alleviate the financial impacts of severe water shortages and drastic reduction in water sales. Negative consequences that will arise from the cost-cutting actions include dissatisfaction of customers, less funding for improvement projects and system maintenance, and reduced staff availability for

emergency response. At a 50% reduction in usage, ML&WC's APA will be sufficient to meet demand and additional leases may not be needed.

Requirement

#42. A draft water shortage contingency resolution or ordinance (10632(h)).

Enacted on July 22, 2009, through Ordinance No. 2333, Chapter 8.29 of the Municipal Code details the City's water shortage contingency plan. It contains general prohibitions, exceptions, means of water conservation at different levels of water shortage, penalties and charges for non-compliance, and hearing procedures for contesting violations. A copy of Ordinance No. 2333 is found in Appendix D.

5.3 WATER QUALITY

Requirement

#52. The plan shall include information, to the extent practicable, relating to the quality of existing sources of water available to the supplier over the same five-year increments as described in subdivision (a) of Section 10631, and the manner in which water quality affects water management strategies and supply reliability (10634).

Groundwater

Overall, groundwater quality in Central Basin is very good. However, there remains a threat of contamination from adjacent basins, seawater intrusion, and migration of shallow contaminants into the deeper aquifers. Low traces of manganese have been found at various locations throughout the Central Basin, but they remain below the allowable levels and are mitigated through blending. Other contaminants of concern include perchlorate, trichloroethylene (TCE), and perchloroethylene (PCE), which are all found in the San Gabriel Valley aquifer. Studies show these contaminants have been slowly migrating towards Central Basin since the 1980s. This prompted Central Basin Municipal Water District (CBWMD) to initiate the development of the Water Quality Protection Project (WQPP), which aims to contain the contaminants within the confines of San Gabriel Valley by extracting the tainted groundwater, treating it, and finally distributing the treated water to purveyors. WQPP is further discussed in Section 4.

In addition, the "San Gabriel Basin Restoration Fund" was established by Congress in 2001, and the San Gabriel Valley Water Quality Authority was consequently founded to take charge of cleaning up the perchlorate scattered all over the San Gabriel Groundwater Basin. As a result, firms in the defense industry that were found responsible for the perchlorate contamination in the 1950s and 1960s were compelled to pay $200 million for the construction of treatment facilities and various water quality projects to restore the San Gabriel Valley Groundwater Basin. This also prevents contaminants from migrating to Central Basin (Reference: CBWMD UWMP 2010).

The risk of seawater intrusion is mitigated by the Alamitos Barrier, which is situated at the southwest section of Central Basin. Groundwater wells throughout Central Basin are also regularly monitored and tested to ensure the high quality of groundwater being extracted from the wells. This also aids water purveyors, such as ML&WC, to intercept any potential water quality issues and promptly resolve them. More details on the Alamitos Barrier are discussed in Section 4.

Consequently, the quality of ML&WC's water deliveries exceeds primary and secondary drinking water standards. As shown in the 2010 Water Quality Report, all organic chemicals, inorganics, radioactivity,

microbials, disinfection by-products, lead, and copper levels fall within the allowable range of primary standards, and some are undetected. Currently, there are no known immediate threats to ML&WC's groundwater supply.

Reports on the quality of water that ML&WC delivers to its customers are made available annually. ML&WC's 2010 Water Quality Report is attached as Appendix E.

The projected impacts of water quality on ML&WC's supplies are quantified in Table 5-7 (DWR Table 30).

Table 5-7 (DWR Table 30) Water quality – current and projected water supply impacts							
Water source	Description of condition	2010	2015	2020	2025	2030	2035 - opt
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Units (circle one): acre-feet per year million gallons per year cubic feet per year							

5.4 DROUGHT PLANNING

Requirement

#22. Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage, to the extent practicable, and provide data for each of the following: (A) an average water year, (B) a single dry water year, (C) multiple dry water years (10631(c)(1)).

Although the supply of groundwater has historically been adequate to meet the demands of customers, ML&WC remains vulnerable to water shortages due to the heavy reliance on groundwater and the limited rainfall typical of Southern California. Most of the groundwater in the Central Basin comes from surface inflow through Whitter Narrows, and only a small fraction of recharge is from local precipitation due to the impermeable material within the vicinity of the basin (Reference: Central Basin Watermaster Report, 2010). From 1998 to 2009, the average rainfall within the City is 13.1 inches.

Table 5-8 (DWR Table 27) lists the average, single-dry, and multiple-dry water years. Base years are selected based on recent annual rainfall. Average year is chosen to be 2005 since the rainfall for that year most closely resembles the City's average annual rainfall as shown on Figure 2-5. The single-dry year is chosen to be 2006 since only 3.45 inches of rainfall was measured that year. The driest 3-year period is determined to be 2006 to 2009, where the average rainfall was only 9.76 inches.

Table 5-8 (DWR Table 27) Basis of water year data	
Water Year Type	Base Year(s)
Average Water Year	2005
Single-Dry Water Year	2006
Multiple-Dry Water Years	2006-2009

As shown in Table 5-9 (DWR Table 28), groundwater production during dry years tends to be less than production during a normal year. However, this does not mean that supplies become inadequate during the dry years. The demands are still met because customers are encouraged to voluntarily reduce their water usage during dry periods. Table 3-1 shows that water consumption and production during the most recent dry years decreased. This demonstrates the success of the water conservation effort in avoiding a significant water shortage.

Table 5-9 (DWR Table 28) Supply reliability — historic conditions					
Average / Normal Water Year (2005)	Single Dry Water Year (2006)	Multiple Dry Water Years			
		2006	2007	2008	2009
3,666	3,544	3,544	3,686	3,648	3,538
Percent of Average/Normal Year:	96.7%	96.7%	100.6%	99.5%	96.5%

Units are in acre-feet per year.

Requirement

#35. Stages of action to be undertaken by the urban water supplier in response to water supply shortages, including up to a 50 percent reduction in water supply, and an outline of specific water supply conditions which are applicable to each stage (10632(a)).

Under Ordinance No. 2333, the addition of "Water Conservation and Water Supply Shortage Program" to the City's Municipal Code identifies the water crisis stages and the different water conservations and prohibitions that correspond with each level. The prohibitions are listed in Table 5-2 (DWR Table 36). As shown in Table 5-10 (DWR Table 35), voluntary conservation is expected of the water customers since permanent water conservation practices will be implemented no matter what the current water supply is. All other levels require mandatory compliance with the conservation practices. A shortage of up to 10% in supply prompts Level 1. Level 2 occurs when a shortage of up to 20% is identified. Finally, a shortage of greater than 20% triggers the implementation of water conservation and prohibitions under Level 3. If supplies are reduced by 50%, all prohibitions listed in the "Water Conservation and Water Supply Shortage Program" will be strictly enforced, and penalties will be imposed accordingly.

Table 5-10 (DWR Table 35) Water shortage contingency — rationing stages to address water supply shortages		
Stage No.	Water Supply Conditions	% Shortage
Permanent	Voluntary	0 to 10%
Level 1	Mandatory	10%
Level 2	Mandatory	20%
Level 3	Mandatory	>20%

[1] *One of the stages of action must be designed to address a 50 percent reduction in water supply.*

Requirement

#36. An estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency's water supply (10632(b)).

Supply reliability, based on current sources in 2010, is presented in Table 5-11 (DWR Table 31). Since ML&WC's water supply mix consists entirely of groundwater, the minimum water supply for the next three years is assumed to be similar to that in the recent driest years. In the first dry year (2011), the groundwater supply will be equal to 96.7% of the supply in the normal year (2010), 100.6% in the second dry year (2012) and 99.5% in the third dry year (2013).

Table 5-11 (DWR Table 31) Supply reliability — current water sources				
Water supply sources[1]	Average / Normal Water Year Supply[2] (2010)	Multiple Dry Water Year Supply[2]		
		Year 2011	Year 2012	Year 2013
Groundwater (Central Basin)	3,373	3,260	3,392	3,356
Percent of normal year:		96.7%	100.6%	99.5%
Units (circle one): acre-feet per year million gallons per year cubic feet per year				
[1] From Table 16.				
[2] See Table 27 for basis of water type years.				

Requirement

#43. A mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis 10632(i).

ML&WC implements monitoring mechanisms to track both water production and consumption to determine water savings and losses. These mechanisms are listed below:

- Readings of water meters
- Meter Exchange Program
- Leak Detection Program
- Meters installed at all connections in the system
- System Pressure Control Program
- Meter readings at inter-agency connections
- Water Quality Reports
- Recording of water production from the groundwater wells

Requirement

#53. Every urban water supplier shall include, as part of its urban water management plan, an assessment of the reliability of its water service to its customers during normal, dry, and multiple dry water years. This water supply and demand assessment shall compare the total water supply sources available to the water supplier with the total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and multiple dry water years. The water service reliability assessment shall be based upon the information compiled pursuant to Section 10631, including available data from state, regional, or local agency population projections within the service area of the urban water supplier (10635(a)).

Normal year supply and demand projections are presented in Table 5-12 (DWR Table 32).

Table 5-12 (DWR Table 32) Supply and demand comparison — normal year					
	2015	2020	2025	2030	2035 - opt
Supply totals (from DWR Table 16)	3,631	3,664	3,698	3,722	3,765
Demand totals (From DWR Table 11)	3,612	3,646	3,679	3,703	3,746
Difference	19	19	19	19	19
Difference as % of Supply	0.5%	0.5%	0.5%	0.5%	0.5%
Difference as % of Demand	0.5%	0.5%	0.5%	0.5%	0.5%

Units are in acre-feet per year.

The following assumptions are made to estimate supply and demand during a single dry year:

- The provisions of a Level 1 water shortage will be implemented, and customers will be subjected to a 10% consumption reduction. The potable water supply is decreased to 96.7% of the normal year water supply, according to the historic supply reliability conditions shown in Table 5-9 (DWR Table 28).
- The supply of recycled water will be the same as in a normal year.
- The amount of water losses in a single dry year will be equal to 7.8% of the potable water supply.

Supply and demand projections for a single dry year are presented in Table 5-13 (DWR Table 33).

Table 5-13 (DWR Table 33) Supply and demand comparison — single dry year					
	2015	2020	2025	2030	2035 - opt
Supply totals[1,2]	3,493	3,525	3,558	3,581	3,622
Demand totals[2,3,4]	3,277	3,308	3,338	3,360	3,399
Difference	216	218	220	221	224
Difference as % of Supply	6.2%	6.2%	6.2%	6.2%	6.2%
Difference as % of Demand	6.6%	6.6%	6.6%	6.6%	6.6%

Units are in acre-feet per year.

[1] Consider the same sources as in Table 16. If new sources of water are planned, add a column to the table and specify the source, timing, and amount of water.

[2] Provide in the text of the UWMP text that discusses how single-dry-year water supply volumes were determined.

[3] Consider the same demands as in Table 3. If new water demands are anticipated, add a column to the table and specify the source, timing, and amount of water.

[4] The urban water target determined in this UWMP will be considered when developing the 2020 water demands included in this table.

The following assumptions are made to estimate supply and demand for a three-year multiple-dry year period:

- The first dry year is similar to a Level 1 single dry year, in which customers are required to reduce consumption by 10%. The potable water supply is decreased to 96.7% of the normal year water supply, according to the historic supply reliability conditions shown in Table 5-9 (DWR Table 28).
- The second dry year is considered a Level 2 water shortage, and a 20% reduction in consumption is made mandatory. The potable water supply is increased to 100.6% of the normal year water supply, according to the historic supply reliability conditions shown in Table 5-9 (DWR Table 28).
- The third dry year is considered a Level 3 water shortage, and a minimum of 25% consumption reduction is required. The potable water supply is decreased to 99.5% of the normal year water supply, according to the historic supply reliability conditions shown in Table 5-9 (DWR Table 28).

- The supply of recycled water will be the same as in a normal year.
- The amount of losses in each of the dry years will be equal to 7.8% of the potable water supply.
- Total demand is the sum of recycled water demand and potable water demand with conservation.

The projected supply and demand for the years 2010 to 2014, 2015 to 2019, 2020 to 2024, 2025 to 2029, 2030 to 2034, and 2035 to 2039 are presented in Tables 5-14, 5-15, 5-16, 5-17, 5-18, and 5-19, respectively. The first three years in the sequence represent the multiple dry year period, and the last two are normal years. Note that recycled water is not included in the supply and demand mix for 2010 and 2011 since the SWRP Phase 1, which will provide recycled water to ML&WC's service area, is currently still non-operational.

Table 5-14
Projected Supply and Demand for a Multiple Dry Year Period Beginning 2010

Year	2010	2011	2012	2013	2014
Climate Condition	Dry	Dry	Dry	Normal	Normal
Potable Water Supply (AFY)	3,260	3,392	3,356	3,373	3,373
Losses (AFY)	(254)	(265)	(262)	(263)	(263)
Recycled Water Supply (AFY)	0	0	18.5	18.5	18.5
Total Supply (AFY)	3,006	3,127	3,113	3,128	3,128
Potable Water Demand (AFY)	3,098	3,149	3,199	3,250	3,300
Conservation (AFY)	(310)	(630)	(800)	0	0
Demand with Conservation (AFY)	2,788	2,519	2,399	3,250	3,300
Recycled Water Demand (AFY)	0	0	18.5	18.5	18.5
Total Demand (AFY)	2,788	2,519	2,418	3,268	3,319

Table 5-15
Projected Supply and Demand for a Multiple Dry Year Period Beginning 2015

Year	2015	2016	2017	2018	2019
Climate Condition	Dry	Dry	Dry	Normal	Normal
Potable Water Supply (AFY)	3,492	3,633	3,595	3,612	3,612
Losses (AFY)	(272)	(283)	(280)	(282)	(282)
Recycled Water Supply (AFY)	18.5	18.5	18.5	18.5	18.5
Total Supply (AFY)	3,238	3,368	3,333	3,349	3,349
Potable Water Demand (AFY)	3,351	3,357	3,363	3,370	3,376
Conservation (AFY)	(335)	(671)	(841)	0	0
Demand with Conservation (AFY)	3,016	2,686	2,523	3,370	3,376
Recycled Water Demand (AFY)	18.5	18.5	18.5	18.5	18.5
Total Demand (AFY)	3,034	2,704	2,541	3,388	3,394

Table 5-16 Projected Supply and Demand for a Multiple Dry Year Period Beginning 2020					
Year	2020	2021	2022	2023	2024
Climate Condition	Dry	Dry	Dry	Normal	Normal
Potable Water Supply (AFY)	3,525	3,666	3,628	3,646	3,646
Losses (AFY)	(275)	(286)	(283)	(284)	(284)
Recycled Water Supply (AFY)	18.5	18.5	18.5	18.5	18.5
Total Supply (AFY)	3,268	3,399	3,364	3,380	3,380
Potable Water Demand (AFY)	3,382	3,388	3,394	3,401	3,407
Conservation (AFY)	(338)	(678)	(849)	0	0
Demand with Conservation (AFY)	3,044	2,711	2,546	3,401	3,407
Recycled Water Demand (AFY)	18.5	18.5	18.5	18.5	18.5
Total Demand (AFY)	3,062	2,729	2,564	3,419	3,425

Table 5-17 Projected Supply and Demand for a Multiple Dry Year Period Beginning 2025					
Year	2025	2026	2027	2028	2029
Climate Condition	Dry	Dry	Dry	Normal	Normal
Potable Water Supply (AFY)	3,557	3,700	3,661	3,679	3,679
Losses (AFY)	(277)	(289)	(286)	(287)	(287)
Recycled Water Supply (AFY)	18.5	18.5	18.5	18.5	18.5
Total Supply (AFY)	3,298	3,430	3,394	3,411	3,411
Potable Water Demand (AFY)	3,413	3,417	3,421	3,426	3,430
Conservation (AFY)	(341)	(683)	(855)	0	0
Demand with Conservation (AFY)	3,072	2,734	2,566	3,426	3,430
Recycled Water Demand (AFY)	18.5	18.5	18.5	18.5	18.5
Total Demand (AFY)	3,090	2,752	2,585	3,444	3,448

Table 5-18 Projected Supply and Demand for a Multiple Dry Year Period Beginning 2030					
Year	2030	2031	2032	2033	2034
Climate Condition	Dry	Dry	Dry	Normal	Normal
Potable Water Supply (AFY)	3,580	3,724	3,685	3,703	3,703
Losses (AFY)	(279)	(290)	(287)	(289)	(289)
Recycled Water Supply (AFY)	18.5	18.5	18.5	18.5	18.5
Total Supply (AFY)	3,319	3,452	3,416	3,433	3,433
Potable Water Demand (AFY)	3,434	3,442	3,450	3,459	3,467
Conservation (AFY)	(343)	(688)	(863)	0	0
Demand with Conservation (AFY)	3,091	2,754	2,588	3,459	3,467
Recycled Water Demand (AFY)	18.5	18.5	18.5	18.5	18.5
Total Demand (AFY)	3,109	2,772	2,606	3,477	3,485

Table 5-19
Projected Supply and Demand for a Multiple Dry Year Period Beginning 2035

Year	2035	2036	2037	2038	2039
Climate Condition	Dry	Dry	Dry	Normal	Normal
Potable Water Supply (AFY)	3,621	3,767	3,728	3,746	3,746
Losses (AFY)	(282)	(294)	(291)	(292)	(292)
Recycled Water Supply (AFY)	18.5	18.5	18.5	18.5	18.5
Total Supply (AFY)	3,357	3,492	3,456	3,472	3,472
Potable Water Demand (AFY)	3,475	3,483	3,491	3,500	3,508
Conservation (AFY)	(348)	(697)	(873)	0	0
Demand with Conservation (AFY)	3,128	2,787	2,619	3,500	3,508
Recycled Water Demand (AFY)	18.5	18.5	18.5	18.5	18.5
Total Demand (AFY)	3,146	2,805	2,637	3,518	3,526

A summary of the supply and demand for the multiple dry years period are presented in Table 5-20 (DWR Table 34). It also shows the surplus water as a percentage of supply and demand. In the first year of the multiple-dry period, a water savings of 740 AFY can be expected. The water savings increase to about 1,072 AFY in the second year and to 2,491 AFY in the third year. Based on the following comparison, it can be concluded that meeting the customers' demands, even during dry years, is feasible. However, the public's cooperation in water conservation will be vital in attaining this goal.

Table 5-20 (DWR Table 34)
Supply and demand comparison — multiple dry-year events

		2015	2020	2025	2030	2035 - opt
Multiple-dry year first year supply	**Supply totals**[1,2]	3,238	3,268	3,298	3,319	3,357
	Demand totals[2,3,4]	3,034	3,062	3,090	3,109	3,146
	Difference	204	206	208	210	211
	Difference as % of Supply	6.3%	6.3%	6.3%	6.3%	6.3%
	Difference as % of Demand	6.7%	6.7%	6.7%	6.8%	6.7%
Multiple-dry year second year supply	**Supply totals**[1,2]	3,368	3,399	3,430	3,452	3,492
	Demand totals[2,3,4]	2,704	2,729	2,752	2,772	2,805
	Difference	664	670	678	680	687
	Difference as % of Supply	19.7%	19.7%	19.8%	19.7%	19.7%
	Difference as % of Demand	24.5%	24.5%	24.6%	24.5%	24.5%
Multiple-dry year third year supply	**Supply totals**[1,2]	3,333	3,364	3,394	3,416	3,456
	Demand totals[2,3,4]	2,541	2,564	2,585	2,606	2,637
	Difference	792	799	810	810	818
	Difference as % of Supply	23.8%	23.8%	23.9%	23.7%	23.7%
	Difference as % of Demand	31.2%	31.2%	31.3%	31.1%	31.0%

Units are in acre-feet per year.

[1] *Consider the same sources as in Table 16. If new sources of water are planned, add a column to the table and specify the source, timing, and amount of water.*

[2] *Provide in the text of the UWMP text that discusses how single-dry-year water supply volumes were determined.*

[3] *Consider the same demands as in Table 3. If new water demands are anticipated, add a column to the table and specify the source, timing, and amount of water.*

[4] *The urban water target determined in this UWMP will be considered when developing the 2020 water demands included in this table.*

SECTION 6

DEMAND MANAGEMENT MEASURES

6.1 Introduction

Demand Management Measures (DMMs) are mechanisms used in increasing water conservation. The Urban Water Management Plan Act includes 14 DMMs (CWC 10631 (f)) that must be evaluated in the UWMP. The 14 DMMs are listed in the Requirement #26 below:

Requirement

#26. (Describe and provide a schedule of implementation for) each water demand management measure that is currently being implemented, or scheduled for implementation, including the steps necessary to implement any proposed measures, including, but not limited to, all of the following: (A) water survey programs for single-family residential and multifamily residential customers; (B) residential plumbing retrofit; (C) system water audits, leak detection, and repair; (D) metering with commodity rates for all new connections and retrofit of existing connections; (E) large landscape conservation programs and incentives; (F) high-efficiency washing machine rebate programs; (G) public information programs; (H) school education programs; (I) conservation programs for commercial, industrial, and institutional accounts; (J) wholesale agency programs; (K) conservation pricing;(L) water conservation coordinator; (M) water waste prohibition; (N) residential ultra-lowflush toilet replacement programs (10631(f)(1) and (2).

DMM A: Water Survey Programs for Residential Customers

ML&WC surveys customers' water use through regular meter readings. The meter readings alert ML&WC of any abnormally excessive water use, and the customer, where the high consumption occurs, is promptly notified by telephone or by leaving a door hanger at the billing address. The customer then coordinates with ML&WC to determine the cause of the high consumption. Following a water audit, the customer is advised on water conservation practices to avoid future excessive usage and high water bills.

DMM C: System Water Audits, Leak Detection, and Repair

As part of ML&WC's system maintenance activities, the water system is regularly audited for irregularities, such as leaks and other defects, so repairs can be promptly performed. Field crews, customers, and neighboring agencies collectively monitor the distribution system by reporting any anomalies to ML&WC. ML&WC then logs the problems and appropriate actions are taken. In addition, ML&WC operates a Meter Exchange Program, in which meters are evaluated for accuracy and are replaced if proven defective.

DMM F: High-Efficiency Washing Machine Rebates Program

In the past, rebates of up to $100 per high-efficiency washing machine installed were offered to ML&WC's residential customers. Twenty-one customers were documented to have taken advantage of this program.

DMM G: Public Information Programs

ML&WC keeps its customers informed of various water conservation issues and shortage announcements through news articles and media inserts in the customers' water bills. ML&WC also encourages the public, particularly the local schools, civic organizations, and any groups of concerned citizens, to come to the ML&WC office if they have any water-related questions or concerns, and ML&WC will gladly provide them with the information they need.

DMM H: School Education Programs

Over the years, ML&WC has conducted water education programs at the local elementary and middle schools. The students are taken on a guided tour of ML&WC's plant and office facilities and given materials that contain information on responsible water use and conservation. In addition, Water Awareness programs and contests are held at the local schools through the help of school personnel and teaching staff. Fremont Elementary and Montebello Intermediate School have participated in these programs.

DMM I: Conservation Programs for Commercial, Industrial, and Institutional Accounts

Similar to toilet rebates offered to residential customers, rebates were also available to commercial, industrial, and institutional customers. Items that qualify for such rebates include high efficiency washers, water brooms, pre-rinse spray valves, and water-free urinals.

DMM K: Conservation Pricing

ML&WC encourages water conservation by implementing a tiered water rate structure. As shown in Table 6-1, the cost of water per hundred cubic feet increases as consumption goes up. This pricing strategy encourages customers to be more aware of their water use and keep it to a minimum to avoid higher charges.

Table 6-1
Consumption and Water Rates

Zone	Category	Consumption	Water Rate (per Ccf)
Lower Pressure Zone	Single Family Residential	< 20 Ccf	$ 1.69
	Single Family Residential and Government	21 to 31 Ccf	$ 1.89
	Single Family Residential and Government	> 32 Ccf	$ 2.09
	All Others		$ 2.02
Booster Area Pressure Zone	Single Family Residential and Government	< 20 Ccf	$ 1.75
	Single Family Residential and Government	21 to 31 Ccf	$ 1.95
	Single Family Residential and Government	> 32 Ccf	$ 2.15
	All Others		$ 2.08

DMM M: Water Waste Prohibition

As discussed in Section 5, while ML&WC does not have its own laws and prohibitions that regulate water waste and use, it abides by the City of Montebello's municipal code. The water waste prohibitions and penalties are all enforced by the City.

DMM N: Residential Ultra-Low Flush Toilet Replacement Programs

In the past, ML&WC distributed ultra-low flush toilets to its customers. Rebates of up to $50 per toilet were also available. Hundreds of new water efficient toilets were installed by residential customers under this program.

Requirement

#27. A description of the methods, if any, that the supplier will use to evaluate the effectiveness of water demand management measures implemented or described under the plan (10631(f)(3)).

ML&WC evaluates the effectiveness of the implemented DMMs by monitoring consumption through regular meter readings. All existing service connections in the residential, commercial, and industrial sectors are metered. Future service connections will be metered as well.

Requirement

#28. An estimate, if available, of existing conservation savings on water use within the supplier's service area, and the effect of the savings on the supplier's ability to further reduce demand (10631(f)(4)).

Since the adoption and implementation of the 2005 UWMP, the daily per capita water use within ML&WC's service area has dropped from 95 gpcd in 2005 to 86 gpcd in 2010, which translates into a savings of 9 AFY. The only exceptions are the years 2007 and 2008, in which the daily per capita water use are 95 gpcd and 96 gpcd, respectively. This substantial decrease in consumption demonstrates the effectiveness of the conservation programs that ML&WC has supported and implemented. Programs in leak detection, public education and information, plumbing fixtures retrofits, and water conservation tariff requirements have all largely contributed to the water savings. ML&WC's efforts in coordinating with customers, who have high consumptions, have also helped in reducing water use by timely identification of the cause of the high water use and formulating solutions to prevent it.

In effect, the current water savings show that further reductions in demand are feasible.

Requirement

#29. An evaluation of each water demand management measure listed in paragraph (1) of subdivision (f) that is not currently being implemented or scheduled for implementation. In the course of the evaluation, first consideration shall be given to water demand management measures, or combination of measures, that offer lower incremental costs than expanded or additional water supplies. This evaluation shall do all of the following: (1) Take into account economic and noneconomic factors, including environmental, social, health, customer impact, and technological factors; (2) Include a cost-benefit analysis, identifying total benefits and total costs; (3) Include a description of funding available to implement any planned water supply project that would provide water at a higher unit cost; (4) Include a description of the water supplier's legal authority to implement the measure and efforts to work with other relevant agencies to ensure the implementation of the measure and to share the cost of implementation (10631(g)).

DMM B: Residential Plumbing Retrofit

Requirements for retrofitting residential plumbing are implemented by building and plumbing codes of the City of Montebello and the County of Los Angeles.

DMM D: Metering with Commodity Rates for All New Connections and Retrofit of Existing Connections

Plumbing retrofits of existing connections are regulated by City and County building and plumbing ordinances; therefore, they are not within the scope of ML&WC's service.

DMM E: Large Landscape Conservation Programs and Incentives

Regulation of large landscapes, along with irrigation practices and related water conservation, are implemented by the City of Montebello.

DMM J: Wholesale Agency Programs

ML&WC is a retailer, not a wholesaler. However, Central Basin Municipal Water District (CBMWD), from whom ML&WC is going to take recycled water, is a wholesaler that runs a variety of water conservation programs. One of CBMWD's primary water conservation campaigns is the *Shut Your Tap!* Campaign, which encourages water customers to be mindful of their water consumption by making simple lifestyle changes, such as taking shorter showers, making sure that sprinklers do not have any leaks, and substituting water brooms for hoses when cleaning paved areas. As part of the campaign, CBMWD sends speakers to various community events to further promote the importance of water use efficiency, and publications on a variety of water-related topics are also available. Moreover, the *Shut Your Tap!* Campaign holds a monthly forum for cities, water agencies, and other water stakeholders to trade ideas and information on water conservation issues. CBMWD also provides cities and retail agencies with a "Conservation Messaging Tool Kit," which consists of water conservation tip sheets, door hangers, bill inserts, local cable TV announcements, countertop tent cards, and sample newsletter articles. The tool kit is designed to aid cities and retail agencies in sharing information to the water customers (Reference: CBMWD UWMP 2010).

CBMWD also promotes MWD's "Mandatory Water Use Efficiency Ordinance."

DMM L: Water Conservation Coordinator

CBMWD's staff includes a full-time conservation coordinator, who leads the promotion of water conservation through about CBMWD's service area. The coordinator also works closely with cities and other water retail agencies in implementing water conservation programs and encouraging water customers to be more aware of and minimize their water use (Reference: CBMWD UWMP 2010).

Appendix A1

Notice of Preparation

NOTICE OF PUBLIC HEARING

NOTICE OF PREPARATION AND PUBLIC HEARING FOR THE MONTEBELLO LAND AND WATER COMPANY'S 2010 URBAN WATER MANAGEMENT PLAN

The Montebello Land and Water Company (the "Company") is currently preparing an update to its Urban Water Management Plan ("Plan") in compliance with the California Urban Water Management Planning Act. The current Plan was completed in 2005. An update is required every five years. The Company welcomes the input and involvement of all interested parties as it updated its Plan.

The Plan describes the Company's planning efforts to ensure an adequate water supply to meet existing and future water demands under a range of water supply conditions, including water shortages. Draft portions of the Plan will be made available to appropriate water agencies including wholesale suppliers, water management agencies, and neighboring retail agencies as they are developed. The completed Draft 2010 Plan will be available for public review beginning June 7, 2011, at the Company's office location stated below.

The Company will conduct a public hearing at the following time and place to receive comments on the Draft 2010 Plan:

Date:	*Tuesday, June 14, 2011*
Time:	*9:00 a.m.*
Location:	*Montebello Land & Water Company* *344 East Madison Avenue* *Montebello, CA 90640*

All interested persons are invited to attend the public hearing and provide comments regarding the Draft 2010 Plan. Oral statements will be heard, but for accuracy of the record, all important testimony should be submitted in writing.

For more information, please feel free to contact Kenneth Bradbury, General Manager at (323) 722-8654 (ken@mtblw.com).

Date of Notice: May 16, 2010

Appendix A2

Board of Directors' Meeting Minutes

MINUTES OF THE REGULAR MEETING OF THE BOARD OF DIRECTORS OF MONTEBELLO LAND AND WATER COMPANY

A regular meeting of the Board of Directors of Montebello Land and Water Company was held at 9:00 a.m. on Tuesday, June 14, 2011, at the Company's office located at 344 E. Madison Ave., Montebello, California. The meeting was attended by President Shaffer, and Board Members Akashi, Burke, Jugan and Kayiran. Mr. Burke acted as Secretary for the meeting. Joseph P. Buchman of Burke, Williams & Sorensen, LLP was also present.

The meeting was called to order by President Shaffer at approximately 9:07 a.m.

After review of the Minutes of the Meeting of the Board of Directors of May 10, 2011, on approval of the motion by Mr. Kayiran, seconded by Mr. Jugan, the same were approved.

After review of the Monthly Bills, on approval of the motion by Mr. Akashi, seconded by Mr. Burke, the same were approved for payment.

Following review of the Monthly Operating Statement, Monthly Leak Report, Monthly Production Reports, and Bi-Monthly Billing for Consumers, on approval of the motion by Mr. Akashi, seconded by Mr. Jugan, these were ordered filed.

First, the Board reviewed the May 2011 Pension Plan Investment Report. Following discussion, the Board accepted the report without action.

Next, the Board discussed the Company's Defined Benefit Pension Plan and Life Insurance. Following discussion, the Board directed Mr. Buchman to prepare or obtain a report from Qualified Benefits, Inc. regarding the parameters of the Death Benefit under the Pension Plan.

At the request of the President, General Manager Kenneth S. Bradbury then joined the meeting.

Next, the Board reviewed the AKM Consulting Engineers 2010 Urban Water Management Plan (the "Plan"). Mr. Kayiran presented the Plan and answered questions asked by the Board. Following discussion, the Board found that the Plan (1) satisfied all applicable requirements, and (2) that a duly noticed public hearing had been conducted. On the motion duly made and seconded, the Plan was approved. Mr. Kayiran did not participate in the vote. The Board directed Mr. Bradbury to submit the Plan to the Department of Water Resources.

Next, Mr. Bradbury presented revised Company billing statement to implement the Board-approved surcharge for water delivered after July 1, 2011, to passthrough the increase in the replenishment assessment equal to $.09 per ccf. Following discussion, on the motion duly made and seconded, the Board approved the revised Company billing statement.

Appendix C

WRD Groundwater Monitoring Report

2009-2010

Water Replenishment District
of Southern California

REGIONAL GROUNDWATER MONITORING REPORT WATER YEAR 2009-2010

Central and West Coast Basins
Los Angeles County, California

February 2011

WRD

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REGIONAL GROUNDWATER MONITORING REPORT
CENTRAL AND WEST COAST BASINS
LOS ANGELES COUNTY, CALIFORNIA
WATER YEAR 2009-2010

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

(562) 921-5521

Division 1	**Willard H. Murray, Jr., Vice President**
Division 2	**Robert Katherman, Secretary**
Division 3	**Lillian Kawasaki, Director**
Division 4	**Sergio Calderon, President**
Division 5	**Albert Robles, Treasurer**

Robb Whitaker	**General Manager**
Ted Johnson	**Chief Hydrogeologist**

Prepared by:

Tony Kirk	**Hydrogeologist**
Mat Kelliher	**Hydrogeologist**
Benny Chong	**Associate Hydrogeologist**
Peter Piestrzeniewicz	**Assistant Hydrogeologist**
Jason Weeks	**Senior Engineer**
Phuong Ly	**Water Quality Specialist**

FEBRUARY 2011

Executive Summary

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

WRD has been monitoring the CWCB for over 50 years, and this year's annual report presents the most comprehensive information to date due to our growing network of aquifer-specific monitoring wells and in-depth water quality analysis. 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 these 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 2009-10. Detailed information is presented in the body of the report with a summary below:

Groundwater Levels

Groundwater levels increased modestly over most of the Central Basin during water year 2009-10. Water levels increased up to 14 feet in the Cerritos area and in the unconfined Montebello Forebay area up to 11 feet. Water levels decreased up to 3 feet in the Lakewood area. Water levels were generally stable to slightly increasing for the coastal area of the West Coast Basin during water year 2009-10. Water levels increased in the Carson and Dominguez Gap areas of the West Coast Basin from 1 up to 5 feet and decreased in the Gardena area up to 6 feet.

Groundwater Quality

WRD has taken an active role in monitoring and protecting the groundwater and replenishment water quality in the CWCB. We have established the Regional Groundwater Monitoring Program which consists of a network of nearly 280 monitoring wells at over 50 locations throughout the District. WRD collects nearly 500 groundwater samples from these wells on an annual basis and analyzes them for over 100 water quality constituents to produce nearly 50,000 individual data points to help track the water quality in the basins. By analyzing and reviewing the results on a regular basis, any new or growing water quality concerns can be identified and managed effectively.

The results of this monitoring including data tables, water quality maps, and graphs of trends are presented in Chapter 3 of this report. Overall, the groundwater in the CWCB continues to be of high quality and suitable for potable and non-potable uses and continues to meet our high standards for quality. There are localized areas of marginal to poor water quality that may require treatment prior to use. The causes of these lesser quality areas can be from natural or human sources. 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 maps and trend graphs to focus on ten key water quality constituents including total dissolved solids (TDS), iron, manganese, nitrate, chloride, trichloroethylene (TCE), tetrachloroethylene (PCE), arsenic, total organic carbon, and perchlorate. TDS while elevated locally is not a widespread problem in the CWCB and is typically present along with chloride, an indicator of historic seawater intrusion. The most prevalent water quality issue in the CWCB is manganese, a naturally occurring contaminant. TCE and PCE also impact many wells in the District. WRD is currently investigating perchlorate, an emerging contaminant of concern. Other key constituents do not appear to be a water quality concern.

Upcoming Activities and Challenges Ahead

WRD remains committed to its statutory charge to protect and preserve the groundwater resources in the CWCB. To that end, WRD will be installing additional monitoring wells in the upcoming year to enhance its monitoring well network and will perform other projects and programs to meet this charge. One of the biggest challenges currently facing the District is the rising cost of imported water and the shortage of imported water for replenishment. The District has gone nearly 3 years with severely limited availability of imported water for the spreading grounds resulting in falling water levels. The District seeks to eliminate this reliance on imported water for replenishment and looks to expand its use of local sources including storm water and recycled water. We call this initiative our Water Independence Now (WIN) program – a program designed to ensure a reliable source of replenishment water to keep the groundwater basins useable and of high quality for all the groundwater users in the WRD service area.

WRD will continue to use the data generated by the RGWMP along with WRD's advanced GIS capabilities to address current and upcoming issues related to water quality and groundwater replenishment in the Central and West Coast Basins. WRD staff will be working on refining the hydrogeologic conceptual model of the CWCB using data from the RGWMP and other data to improve the framework for understanding the dynamics of the groundwater system and use as a planning tool. WRD will continue to be proactively involved in the oversight of the most significant contaminated sites that threaten CWCB groundwater resources and will continue to fund the Safe Drinking Water Program to address impacted groundwater. WRD will meet with other stakeholders and the Regional Water Quality Control Board to initiate development of a Salt / Nutrient Management Plan for the CWCB. WRD will continue to take the lead in working with the RWQCB and stakeholders to develop a Plan for the CWCB.

WRD will continue efforts under its Groundwater Contamination Prevention Program in order to minimize or eliminate threats to groundwater supplies. This includes continued organization of the Central and West Coast Basin Groundwater Contamination Forum

with key stakeholders including the Environmental Protection Agency, Department of Toxic Substances Control, Los Angeles Regional Water Quality Control Board, California Department of Public Health, United States Geological Survey, and various cities resulting in a list of high-priority contaminated groundwater sites within the District. Currently, the list includes approximately 47 sites across the CWCB.

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

ASR	Aquifer Storage and Recovery
AWTF	Advanced Water Treatment Facility
AWWA	American Water Works Association
BGS	Below Ground Surface
CDPH	California Department of Public Health (formerly California Department of Health Services)
CSDLAC	County Sanitation Districts of Los Angeles County
CWCB	Central and West Coast Basins
DBMS	Database Management System
DTSC	California Department of Toxic Substances Control
DWR	State Department of Water Resources
EPA	U.S. Environmental Protection Agency
ESR	Engineering Survey and Report
GIS	Geographic Information System
GPS	Global Positioning System
LACDHS	Los Angeles County Department of Health Services
LACDPW	Los Angeles County Department of Public Works
LARWQCB	Los Angeles Regional Water Quality Control Board
MCL	Maximum Contaminant Level
mg/L	Milligrams per Liter
µg/L	Micrograms 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
RGWMP	Regional Groundwater Monitoring Program
RL	Response Level
SAT	Soil Aquifer Treatment

GLOSSARY OF ACRONYMS (continued)

TCE	Trichloroethylene
TDS	Total Dissolved Solids
TITP	Terminal Island Treatment Plant
TOC	Total Organic Carbon
UCRM	Unregulated Chemicals Requiring Monitoring
USGS	United States Geological Survey
VOC	Volatile Organic Compounds
WBMWD	West Basin Municipal Water District
WIN	Water Independence Now
WRD	Water Replenishment District of Southern California
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 and West Coast Basins (CWCB) in southern Los Angeles County (**Figure 1.1**). Our mission is to protect and preserve high-quality groundwater in the basins through innovative, cost-effective, and environmentally sensitive management practices for the benefit of residents and businesses of the CWCB.

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

1.1 BACKGROUND OF THE REGIONAL GROUNDWATER MONITORING PROGRAM

Since its formation in 1959, WRD has been actively involved in groundwater replenishment, water quality monitoring, contamination prevention, data management, and data publication. Historical over pumping of the CWCB caused overdraft, seawater intrusion and other groundwater management problems related to supply and quality. Adjudication of the basins in the early 1960s set a limit on allowable 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 water levels and water quality in the CWCB to ensure the usability of this groundwater reservoir.

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

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

Data are generally provided for a water year, 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 CWCB. The study was documented in USGS Water Resources Investigations Report 03-4065, *Geohydrology, Geochemistry and Ground-Water Simulation-Optimization of the Central and West Coast Basins, Los Angeles County, California* (Reichard et al. 2003). This study was the nucleus of the Regional Groundwater Monitoring Program. In addition to compiling existing available data, this study recognized that the sampling of production wells did not adequately characterize the layered multiple aquifer systems of the CWCB. The study focused on new data collection through drilling and construction of nested groundwater monitoring wells and conducting depth-specific water quality sampling.

Figure 1.3 shows the locations of wells in the resultant WRD nested monitoring well network. Currently, WRD has nearly 280 wells at over 50 locations. A listing and construction details for the WRD wells are presented in **Table 1.1.** WRD and the USGS are currently expanding the nested monitoring well network. Three new wells are

scheduled to be completed in the next year, with an additional two wells scheduled through 2012. 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 of monitoring the quality of groundwater in the Montebello Forebay. The Regional Groundwater Monitoring Program was designed to serve as an expanded, more representative basinwide monitoring program for the CWCB. This Regional Groundwater Monitoring Report is published in lieu of the previous *Annual Reports*.

1.2 CONCEPTUAL HYDROGEOLOGIC MODEL

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

The locations of idealized geologic cross-sections AA' and BB' through the CWCB are shown on **Figure 1.3**. Cross-sections AA' and BB' are presented on **Figures 1.4** and **1.5**, respectively. These cross-sections are derived from cross-sections presented in

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

1.3 GIS DEVELOPMENT AND IMPLEMENTATION

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

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

In early 2003, WRD completed the development of its Internet-based GIS, which was made available to the public for access to CWCB groundwater information. WRD's Internet-based GIS can be accessed through our GIS web site at *http://gis.wrd.org*. The

web site provides the public with access to much of the water level and water quality data contained in this report. The well information can be accessed through interactive map or text searches and the results can be displayed in both tabular and graphical formats.

1.4 SCOPE OF REPORT

This report updates information on groundwater conditions in the CWCB for water year 2009-10, 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 2009-10. Section 3 presents water quality data for the WRD nested monitoring wells, basinwide production wells, and replenishment water. Section 4 summarizes the findings of this report. Section 5 describes future regional groundwater monitoring activities. Section 6 lists the references used in this report. Tables and figures are presented at the end of the report. This report can be viewed online and can be downloaded in PDF format from the WRD web site at www.wrd.org.

SECTION 2
GROUNDWATER LEVELS

Groundwater levels are an indication of the amount of groundwater in the basins. They reveal 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. Groundwater levels are used to determine when additional replenishment water is required and are used to calculate storage changes. Groundwater levels can also be used to demonstrate possible source areas for seawater intrusion or show the effectiveness of seawater barrier wells.

WRD tracks groundwater levels throughout the year by measuring the depth to water in monitoring wells and production wells located throughout the CWCB. **Table 2.1** presents groundwater level measurements collected from the District's nested monitoring wells during water year 2009-10. In order to capture the daily and seasonal variations in water levels, WRD has installed automatic data-logging equipment in numerous wells to collect water levels daily. WRD also obtains water level data from cooperating entities such as the pumpers, DWR, and LACDPW, who collect water levels from their wells. These data are entered into WRD's GIS water level database for analysis.

From the water level database, a groundwater elevation contour map, change in groundwater level map, and groundwater elevation hydrographs for key wells are 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 CWCB in the deeper, main producing aquifers. The levels were measured at the end of the water year during Fall 2010. 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, respectively.

In the West Coast Basin, water levels are highest along the West Coast Basin Barrier Injection Project, and decrease to the east where they are at their lowest elevation in Gardena between the Charnock Fault and Newport-Inglewood Uplift, both of which are geologic structural features restricting 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 increased modestly over most of the Central Basin during water year 2009-10. Water levels increased up to 14 feet in the Cerritos area and in the unconfined Montebello Forebay area up to 11 feet. Water levels decreased up to 3 feet in the Lakewood area. In the West Coast Basin water levels were generally stable to slightly increasing for the coastal area during water year 2009-10. Water levels increased in the Carson and Dominguez Gap areas of the West Coast Basin from 1 up to 5 feet and decreased in the Gardena area up to 6 feet.

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 WRD Engineering Survey and Report (ESR). The ESR hydrographs illustrate the general history of groundwater conditions in the CWCB: 1) Steep water level declines occurred in the 1930s through 1950s as a result of excessive pumping (overdraft); 2) In the mid-1950s to early 1960s, there was a sharp reversal in this downward trend due to initiation of resource management policies, water levels 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 2.8** are historical hydrographs of key nested monitoring wells, one in the Montebello Forebay, one in the Los Angeles Forebay, two in the Central Basin Pressure Area, and two in the West Coast Basin, respectively. These hydrographs illustrate there can be distinct ground water elevation differences between individual aquifers at a nested well location. The differences in elevation are influenced by variable discharge (i.e. pumping wells) and recharge (i.e. injection, percolation, or underflow) and the degree of hydraulic communication between aquifers. These hydrographs are particularly useful in identifying which zones are in the main flow system when corresponding zones show the greatest depths and seasonal fluctuations in groundwater levels during the water year. Observations from **Figures 2.3 through 2.8** are explained 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. It has 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 feet below ground surface (BGS) to 1,130 feet BGS. Because this well is in the Montebello Forebay, where the aquifers are in general hydraulic communication with each other, water level responses in all of the 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 increased over the past water year by about seven feet, but overall have dropped about 20 feet over the past 5 years.

2.5 GROUNDWATER LEVELS IN THE LOS ANGELES FOREBAY

Figure 2.4 is a hydrograph for WRD's Huntington Park #1 nested monitoring well located in the Los Angeles Forebay near the intersection of Slauson Avenue and Alameda Street. It has five individual zones that are screened in the following aquifers (from shallowest to deepest): Gaspur, Exposition, Gage, Jefferson, and Silverado, with depths ranging from 134 feet BGS to 910 feet BGS. Only four of the zones are shown on the hydrograph because the shallowest well (screened from 114 feet to 134 feet in the Gaspur Aquifer) is dry and perforated above the water table, and therefore no water elevations can be shown on the graph. There is a large separation in water levels between Zone 4 and the deeper three 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 2 zones, in the Silverado and Jefferson aquifers, were generally similar and trended downward through the year, decreasing by about 2 feet over the past water year. **Figure 2.4** suggests water levels in the Los Angeles Forebay have remained relatively stable and have generally decreased only 2 to 4 feet over the past 10 years.

2.6 GROUNDWATER LEVELS IN THE CENTRAL BASIN PRESSURE AREA

Figure 2.5 is a hydrograph for WRD's Willowbrook #1 nested monitoring well**.** Willowbrook #1 is located in the Central Basin Pressure Area, away from the Montebello Forebay, about 7 miles to the southwest. It has 4 individual zones that are screened in the Gage, Lynwood, Silverado, and Sunnyside Aquifers, with depths ranging from 200 feet BGS to 905 feet BGS. Water levels in Zone 1 show the greatest response to seasonal changes. The upper three zones have generally shallower water levels than the Zone 1. The upper 2 zones track very closely. These trends suggest some aquifer separation (aquitards) between Zone 1 and 2 and between zone 2 and 3. Zones 3 and 4 likely have little hydraulic separation. Willowbrook water levels in all zones dropped approximately 1 to 2 feet over water year 2009-10, and have declined about 24 feet over the past decade.

In another region of the Central Basin Pressure Area, **Figure 2.6** is the historical water level hydrograph for key nested monitoring well Long Beach #6 located in the Central

Basin Pressure Area, on Spring Street near the Long Beach Airport. It has 6 individual zones that are screened in the following (from shallowest to deepest): Gage, Lynwood, Silverado, Sunnyside (2 zones), and Pico Formation with depths ranging from 220 feet BGS to 1,510 feet BGS. Because this area in 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 Silverado and Lynwood Aquifers, have varied up to 110 feet through a seasonal cycle, from a high of 10 feet below sea level in April 2007 to a low of nearly 130 feet below sea level in recent years. Water levels of the other zones generally show significant seasonal variation also, 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 as seen during water year 2008-09. **Figure 2.6** shows that water levels remain near 7 year lows but did not decrease substantially over the past water year.

2.7 GROUNDWATER LEVELS IN THE WEST COAST BASIN

Figure 2.7 is a nested hydrograph for key nested monitoring well PM-4 Mariner. This well is located in the City of Torrance, in the coastal area inland from the West Coast Basin Seawater Barrier. It has 4 individual zones that are screened in the following aquifers (from shallowest to deepest): Lynwood (2 zones), Silverado, and Sunnyside, with depths ranging from 200 feet BGS to 710 feet BGS. All four zones respond similarly to seasonal fluctuations. Water levels in Zone 1, the Sunnyside Aquifer are deepest, separated from Zone 2 (Silverado Aquifer) which is several feet higher. Zones 3 and 4 (Lynwood and Gage Aquifers) are both about 2 feet above Zone 2. Water levels increased about 1 to 2 feet in all zones over the water year 2009-10 and have generally increased from 2 to 6 feet over the past 10 years.

Figure 2.8 is a hydrograph for WRD's Carson #1 nested monitoring well 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. It has 4 individual zones that are screened in the following aquifers (from shallowest to deepest): Gage, Lynwood, Silverado, and Sunnyside, with depths ranging from 250 feet BGS to 1,110 feet BGS. Water levels in Zone 1 track very similar to Zone 2 throughout the year, and Zone 3 tracks similar to Zone 4. Groundwater elevations differ by about 35 feet between the upper two zones and lower two 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 finished the year about 2 feet higher than the previous year and have generally increased 25 feet over the past 10 years. Water levels in zones 3 and 4 have both been relatively stable over the past 5 years but have generally increased 10 feet over the past 10 years.

SECTION 3
GROUNDWATER AND REPLENISHMENT WATER QUALITY

This section discusses the vertical and horizontal distribution of water quality constituents in the CWCB based on data from WRD's monitoring wells, the quality of water from purveyor's production wells, and the quality of source waters used for CWCB groundwater replenishment. Regional groundwater quality maps summarize water quality constituents of interest in WRD nested monitoring wells and purveyors production wells. Water quality trends for total dissolved solids (TDS) are closely tracked as TDS is a good indicator of overall water quality.

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 effect, risk assessment, detection capability, treatability, and economic feasibility are considered. A Secondary MCL is established for constituents that impact aesthetics of the water, such as taste, odor, and color, and do not impact health. 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 review 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 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 previously described the value of data from aquifer specific nested monitoring wells and these data provide the most valuable insight into CWCB groundwater quality. Semi-annual groundwater samples from WRD nested wells were collected and submitted to a CDPH 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 2009-10. **Table 3.2** presents water quality analytical results from WRD nested monitoring wells in the West Coast Basin during water year 2009-10. Supplementing the data from the nested monitoring well network, data for CWCB 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 for ten of the most significant water quality constituents including total dissolved solids (TDS), iron, manganese, nitrate, chloride, trichloroethylene (TCE), tetrachloroethylene (PCE), arsenic, total organic carbon (TOC), and perchlorate. 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 purveyor's production wells.

Trends for TDS are presented for six key nested monitoring wells in the CWCB. Four key Central Basin wells are located in the Montebello Forebay, the Los Angeles Forebay, the western Central Basin Pressure Area, and the southern Central Basin Pressure Area. Two key wells represent the West Coast Basin, including one for the coastal area and one for the inland area. Each key well trend shows long-term (up to 12 years) variation of TDS in the different aquifers. Locations of the six TDS key wells are shown on **Figure 1.3**.

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

WRD nested monitoring well data for water year 2009-10 indicate relatively low TDS concentrations for groundwater in the deeper producing aquifers of the Central Basin (**Figure 3.1**). In the Central Basin, Silverado Aquifer zones in 22 out of 28 (79%) WRD nested monitoring wells had TDS concentrations below 500 mg/L and 26 out of 28 (93%) were below 1,000 mg/L. In contrast, West Coast Basin nested monitoring well data show generally higher TDS concentrations. Silverado zones of 6 out of 17 (35%) nested wells had TDS below 500 mg/L and 10 out of 17 (59%) had were below 1000 mg/L. Elevated TDS concentrations are observed along the coastal margins of the West Coast Basin and the Dominguez Gap area.

Figure 3.2 presents CDPH water quality data for TDS in production wells across the CWCB for the period spanning water years 2007-10. In the Central Basin, TDS generally ranged between 250 and 750 mg/L over most of the basin. A few wells along the San Gabriel River, in the Norwalk area, contained TDS in excess of 750 mg/L. Another localized area in the northernmost portion of the Central Basin shows a grouping of production wells between 500 and 750 mg/L. Data from many of the production wells in the southernmost portion of the Central Basin indicated TDS less than 250 mg/L.

Data from West Coast Basin wells indicate that most drinking water wells in production had TDS concentrations below 750 mg/L. Several production wells located close to the coast in the Manhattan Beach/Hawthorne/Torrance areas had TDS concentrations above 750 mg/L. Inland production wells had generally lower TDS. In the Carson area, TDS

was generally below 250 mg/L and in the Gardena area TDS was below 500 mg/L in most wells.

Trends in TDS concentrations at six key WRD nested monitoring wells are shown on **Figures 3.3 thru 3.8**. All of the aquifers in the 4 key Central Basin wells were below the MCL for TDS. Trends are generally stable to slightly increasing over the past 7 to 11 years. In the Montebello and Los Angeles Forebays (**Figures 3.3 and 3.4**) the deeper aquifers show little variability while the shallowest aquifers tend to fluctuate somewhat, possibly in response to variations in recharge water. In the western sub-area of the Central Basin Pressure Area, **Figure 3.5** (Willowbrook #1) shows steady concentrations in all aquifers with little variability over the past 12 years. In the southern sub-area of the Central Basin, **Figure 3.6** shows (Long Beach #6) slightly decreasing TDS concentrations are shown with little variability in the four shallowest aquifers, and more variable, slightly increasing TDS in the deeper two aquifers.

In the West Coast Basin, the TDS trend for the Silverado Aquifer in the coastal sub-area (PM-4 Mariner) is far above the MCL and has been generally increasing over the past 12 years as shown on **Figure 3.7**. This zone has been impacted by the saline plume from historic seawater intrusion. Other aquifers at this monitoring location have relatively stable TDS at concentrations below the MCL. TDS concentrations for the inland West Coast Basin key well (Carson #1) are shown on **Figure 3.8** with low TDS and trends generally stable in the deeper aquifers and show TDS decreasing substantially over the decade in the shallowest aquifer.

3.1.2 Iron

Iron occurs naturally in groundwater. Additionally, it is leached from minerals or steel pipes. Sufficient concentrations of iron in water can affect the water's suitability for domestic or industrial purposes. The Secondary MCL for iron in drinking water is 0.3 mg/L. High concentrations of iron in water stains plumbing fixtures and clothing, encrusts well screens, clogs pipes, and may impart a salty taste. It is considered an

essential nutrient, important for human health, and does not pose significant health effects except in special cases. Some industrial processes cannot tolerate more than 0.1 mg/L.

Nested monitoring well data do not indicate iron to be a widespread water quality problem in groundwater in the CWCB. **Figure 3.9** shows iron data in WRD nested monitoring wells for water year 2009-10. In the Central Basin, iron was below the MCL in Silverado zones in 26 out of the 28 nested wells tested. In zones above or below the Silverado, iron was detected above the MCL in only 5 out of the 28 Central Basin nested wells. Iron was detected above the MCL in only one Silverado zone, and in only three wells above or below the Silverado.

At nested monitoring wells in the West Coast Basin, elevated iron occurs locally. Iron is generally detected in one or more zones at all 17 well locations at concentrations below the MCL. One well in the West Coast Basin had an iron concentration in the Silverado exceeding the MCL. Four wells had iron concentrations above the MCL in shallow zones above the Silverado.

Figure 3.10 presents CDPH water quality data for iron in production wells across the CWCB for the period spanning water years 2007-10. Data from CDPH indicate 31 of 258 (12%) Central Basin production wells tested have iron concentrations in groundwater exceeding the secondary MCL. In the West Coast Basin, 7 production wells out of 32 (22%) tested have iron concentrations exceeding the secondary MCL. There does not appear to be a distinct pattern to the occurrence of elevated iron but it appears that samples from production wells tend to show higher iron levels than samples from nested monitoring wells.

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. The Secondary MCL for manganese is

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

Manganese concentrations in the WRD nested monitoring wells exhibit (**Figure 3.11**) widespread vertical and horizontal variations across the CWCB. In the southern portion of the basin, elevated manganese typically occurs in shallower aquifers above the Silverado producing zones. In the northern portion of the Central Basin, manganese is present in shallow zones, the Silverado zones, and the deeper zones. Seven nested monitoring wells in the Central Basin had manganese concentrations exceeding the MCL in the Silverado Aquifer.

In the southern portion of the West Coast Basin, elevated manganese concentrations were limited to aquifer zones above the Silverado. In the western and northern portions of the West Coast Basin, manganese concentrations exceeding the MCL are not limited to any specific zone.

Figure 3.12 presents CDPH water quality data for manganese in production wells across the CWCB for the period spanning water years 2007-10. In the Central Basin, data show a large number of wells having elevated manganese concentrations with 47 out of 247 production wells (19%) tested exceeding the MCL. The production wells with elevated manganese are not limited to a specific area but tend to be widespread, but there does appear to be an area around and south of the Montebello Forebay Spreading Grounds and a second area at the southern end of the Central Basin where manganese is consistently below the MCL or not detected at all. In the West Coast Basin 18 out of 32 production wells (56%) tested had concentrations of manganese exceeding the MCL.

3.1.4 Nitrate

CDPH Primary MCLs limit two forms of nitrogen in drinking water, nitrite and nitrate. Nitrate cannot exceed concentrations of 45 mg/L (measured as Nitrate), corresponding to 10 mg/L nitrate as nitrogen. Nitrite is limited to 1 mg/L as nitrogen. The combined total of the nitrite and nitrate, measured as total nitrogen cannot exceed 10 mg/L. These

constituents are of concern because they present an acute health risk and can cause anoxia in infants. When consumed in excess of these limits, they reduce the uptake of oxygen causing shortness of breath, lethargy, and a bluish color.

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

Figure 3.13 presents nitrate (as nitrogen) water quality data for nested monitoring wells in the CWCB during water year 2009-10. Nested monitoring wells in the very near vicinity of the Montebello Forebay Spreading Grounds indicate concentrations of nitrate slightly above detection limits but below the MCL. Silverado and deeper zones of nested wells more distant from the spreading grounds do not generally have detectable concentrations of nitrate. The detectable but relatively low concentrations of nitrate at and near the spreading grounds may be due to the local water and/or recycled water component of recharge at the spreading grounds. Nitrate is also observed in shallow zones at numerous nested monitoring well locations around the Central Basin. Shallow occurrences of nitrate, may be attributed to local surface recharge impacted by agricultural activities prior to extensive land development.

In the West Coast Basin nested monitoring wells, nitrate was limited to the shallowest zones of several monitoring wells. As in the Central Basin, shallow zone occurrences of

nitrate with deeper zones below detection limits may be attributable to local surface recharge impacted by agricultural activities prior to extensive land development.

Figure 3.14 presents CDPH water quality data for nitrate in production wells across the CWCB for the period spanning water years 2007-10. Detectable concentrations below the MCL were generally located in the vicinity of the Montebello and Los Angeles Forebays, and in far northwestern portion of the Central Basin. Production wells in the southern portion of the Central Basin, and all of the West Coast Basin, show relatively low nitrate concentrations below 3 mg/L or nitrate was not detected at all. The nitrate MCL was not exceeded in any production well in the CWCB during the 2007-10 period.

3.1.5 Chloride

Chloride at elevated levels causes water to taste salty and chloride is the characteristic constituent used to identify seawater intrusion. The secondary MCL for chloride is 250 mg/L with an upper level MCL of 500 mg/L, and a short term MCL of 600 mg/l. **Figure 3.15** presents water quality data for chloride in WRD nested monitoring wells in the CWCB during water year 2009-10. In the Central Basin the Silverado zones of the nested monitoring wells contain generally low chloride concentrations. In the West Coast Basin chloride concentrations exceeded the secondary upper MCL limit in the Silverado zones in about a third of the West Coast Basin nested wells, primarily in areas where seawater intrusion could be the source, or from sources yet to be identified. Numerous wells in the West Coast Basin show chloride impacts above and below the Silverado aquifer.

Figure 3.16 presents CDPH water quality data for chloride in production wells in the CWCB for the period spanning water years 2007-10. Chloride was not detected above the secondary upper MCL level in any of the Central Basin production wells. In the southern portion of the Central Basin, chloride concentrations in production wells were generally below 50 mg/L. In the northeastern portion of the Central Basin, chloride concentrations ranged from 50 to 100 mg/L. In the West Coast Basin, available CDPH data indicate that one production well on the west side of the basin had a chloride

concentration above the upper level MCL. Several other production wells inland from the coast show somewhat elevated chloride concentrations above the recommended MCL. Production wells further inland in the West Coast Basin generally have very low chloride concentrations.

3.1.6 Trichlorlethylene (TCE)

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

TCE (**Figure 3.17**) was detected in nine WRD nested monitoring well locations in the Central Basin. In the West Coast Basin, TCE was detected in shallow zones of three nested monitoring wells. No Central Basin or West Coast Basin nested well contained a detectable TCE concentration in the Silverado aquifer.

Figure 3.18 presents CDPH water quality data for TCE in production wells across the CWCB the period spanning water years 2007-10. A total of 284 wells were tested for TCE. The data show that over the past three years, TCE has been detected in 58 production wells in the Central Basin. Eighteen detections were above the MCL. Wells impacted by TCE are located in the northern portion of the Central Basin, within or near the Montebello and Los Angeles Forebay areas. In the West Coast Basin, TCE was not detected in any production wells.

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 Primary MCL for PCE in drinking water is 5 µg/L. Through improper disposal practices, PCE has contaminated many groundwater basins. Like TCE, PCE can be easily removed from water using

common treatment processes.

During water year 2009-10, PCE (**Figure 3.19**) was detected at 9 nested well locations in the Central Basin. In the Silverado Aquifer, there were two detections, both below the MCL. Generally, PCE detected in nested wells occurred within or near the vicinity of the Montebello and Los Angeles Forebays. In the West Coast Basin, PCE was detected below the MCL in the shallowest zone at one nested monitoring well.

Figure 3.20 presents CDPH water quality data for PCE in production wells across the CWCB for the period spanning water years 2007-10. In the Central Basin, PCE was detected in 60 production wells out of 284 wells tested. Twelve of the 60 wells exceeded the MCL for PCE. Production wells with detectable PCE are primarily located within the vicinity of the Los Angeles and Montebello Forebays and extend southwestward and southward into the Central Basin Pressure Area. PCE was not detected in any production wells tested in the West Coast Basin.

3.1.8 Arsenic

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

Figure 3.21 presents arsenic water quality data for WRD nested monitoring wells during water year 2009-10. In the Central Basin, arsenic concentrations ranged from non-

detectable to 36 µg/L. Arsenic concentrations greater than the MCL in the Central Basin were found at seven nested wells but only one well had arsenic over the MCL in the Silverado aquifer. Arsenic concentrations exceeding the MCL in the Silverado aquifer zones were found at only one Central Basin nested monitoring well. In the West Coast Basin, arsenic was detected above the MCL at three nested monitoring wells and one detection was in a Silverado aquifer zone.

Figure 3.22 presents CDPH water quality data for arsenic in production wells across the CWCB for the period spanning water years 2007-10. Ten production wells in the Central Basin contained arsenic concentrations above the MCL. Arsenic did not exceed the MCL in any West Coast Basin production wells.

3.1.9 Total Organic Carbon (TOC)

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

Figure 3.23 presents TOC water quality data for WRD nested monitoring wells during

water year 2009-10. In the Central Basin, TOC was present in multiple zones of all 28 nested monitoring wells. In the West Coast Basin, TOC greater than 1 mg/L is present in one or more zones at all 17 nested monitoring wells tested, and at concentrations greater than 5 mg/L in one or more zones at 9 of the 17 West Coast Basin nested monitoring wells. Where TOC is present, concentrations are typically below 1 mg/L and less frequently between 1 and 5 mg/L. The lower concentrations occur in the shallow and middle zones of the nested wells; higher concentrations of TOC are generally found in the deeper zones. WRD has previously reported an association between deeper naturally occurring TOC and the occurrence of apparent color (colored water) concentrations in groundwater. Deeper wells with TOC greater than 5 mg/L are likely to contain naturally occurring organic carbon, and not wastewater related organic carbon.

Figure 3.24 presents limited CDPH water quality data for TOC in production wells across the CWCB for the period spanning water years 2007-10. During the three-year period, only 57 production wells were tested for TOC as purveyors are not required to monitor TOC under Title 22 regulations. Forty-one production wells had TOC concentrations above 1 mg/L, and 12 of those were over 5 mg/L.

3.1.10 Perchlorate

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

Figure 3.25 presents perchlorate water quality data for WRD nested monitoring wells during water year 2009-10. In the Central Basin perchlorate was detected at 15 of 28 nested monitoring wells, with a detection at one well exceeding the MCL. In the West Coast Basin, perchlorate was detected at two out of 17 nested monitoring wells, with one detection above the MCL.

Figure 3.26 presents CDPH water quality data for perchlorate in production wells across the CWCB for the period spanning water years 2007-10. Five production wells had detectable perchlorate and only 2 out of 280 production wells tested in the CWCB contained perchlorate concentrations above the revised MCL. Perchlorate was not detected in any West Coast Basin production wells.

3.2 QUALITY OF REPLENISHMENT WATER

This section discusses water quality data for key parameters in WRD replenishment water and local surface water. Although numerous constituents are monitored, the constituents reported here are the ones found to be most prevalent at elevated levels or are of current regulatory interest. The data are classified according to their sources. The key water quality parameters of this discussion are the same as those discussed for the WRD nested monitoring wells: TDS, iron, manganese, nitrate, chloride, TCE, PCE, arsenic, TOC, and perchlorate. Monitoring the concentrations of these constituents is necessary for an understanding of the general chemical nature of the recharge source, and its suitability for replenishing the groundwater basins.

3.2.1 Quality of Imported Water

Both treated and untreated imported water are used for groundwater recharge in the CWCB. Only treated imported water is used at the seawater barriers. This water meets all drinking water standards and is suitable for direct injection. Average water quality data for treated imported water are presented in **Table 3.3**. Untreated imported water ("raw water") is used for recharge at the Montebello Forebay spreading grounds. The untreated imported water can be State Project Water, Colorado River Water, or a blend of State Project Water and Colorado River Water.

In 2009 the average TDS concentration of untreated Colorado River water was 623 mg/L and the average TDS concentration of untreated State Project Water was 303 mg/L.

Nitrate averages were 0.3 mg/L in untreated Colorado River Water and the average

nitrate concentration of State Project Water was 0.8 mg/L. Recently and historically, both Colorado River and State Project Water nitrate concentrations have been far below the MCL.

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

The average chloride concentrations of Colorado River Water and State Project Water have not changed significantly over the past several years. State Project Water chloride concentrations have historically been below their respective MCLs as has the chloride concentration in Colorado River Water.

TOC was reported at 2.7 and 1.9 mg/L in untreated Colorado River and State Project Water respectively. According to the MWD, TCE and PCE have not been detected in Colorado River Water or State Project Water during the calendar year 2009 reporting period. Perchlorate was below the MCL in untreated Colorado River Water and not detected in State Project Water during calendar year 2009.

3.2.2 Quality of Recycled Water

Recycled water is used for groundwater recharge in the CWCB through spreading grounds percolation and barrier injection. In the Montebello Forebay, recycled water from the Whittier Narrows Water Reclamation Plant (WRP), San Jose Creek East WRP, San Jose Creek West WRP, and Pomona WRP is diverted into spreading basins where it percolates into the subsurface. The water quality from these WRPs is carefully controlled and monitored, as required by permits, and typically shows little variation over time. Average water quality data 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 MCL in recycled water from the four WRPs.

Recycled water from the West Basin Municipal Water District WRP undergoes advanced treatment using microfiltration, reverse osmosis, ultraviolet light, and advanced oxidation with hydrogen peroxide, and is blended with imported water, then injected at the West Coast Barrier. This water is treated to comply with all drinking water standards and is suitable for direct injection. The blend of recycled water and imported water is injected to prevent the intrusion of seawater and to replenish the groundwater basins. The West Basin Municipal Water District received approval from the Los Angeles Regional Water Quality Control Board (LARWQCB) to use 75 percent and conditional approval for up to 100 percent recycled water at the West Coast Barrier. **Table 3.3** presents average water quality data for this injected recycled water.

The Alamitos Seawater Barrier receives a blend of treated imported water and recycled water from the Leo J. Vander Lans Treatment Facility, owned by WRD. The recycled water is disinfected tertiary effluent from the Long Beach Water Reclamation Plant of the County Sanitation Districts of Los Angeles County (CSDLAC) which is further treated with microfiltration, reverse osmosis, and ultraviolet light by WRD. The water meets drinking water quality standards and other stringent requirements of regulatory agencies for injection into a seawater barrier. This project began deliveries in October 2005. **Table 3.3** presents average water quality of the recycled water prior to blending.

Tertiary effluent from the City of Los Angeles Terminal Island Treatment Plant (TITP) is treated further at the Advanced Water Treatment Facility (AWTF) with microfiltration, reverse osmosis, and disinfection with chlorine to produce recycled water. The water meets drinking water quality standards and also other stringent requirements by regulatory agencies for injection into a seawater barrier. Deliveries began in February 2006. **Table 3.3** presents average water quality data of the recycled water from the TITP AWTF.

3.2.3 Quality of Stormwater

Stormwater infiltrates to some degree throughout the District. It is also intentionally diverted from the major storm channels and percolated along with imported and recycled water at the Montebello Forebay Spreading Grounds. Periodic stormwater quality analyses have been performed by LACDPW throughout the history of operations at the Montebello Forebay Spreading Grounds. Average stormwater quality data for water year 2009-10 are presented on **Table 3.3**. The average TDS, manganese, nitrate, chloride, TCE, and PCE, and perchlorate in stormwater spread in the Montebello Forebay are relatively low. Stormwater TOC was 8.1 mg/L, which is higher than other sources. Metals including iron, lead and copper were relatively high in tested stormwater.

3.3 MINERAL CHARACTERISTICS OF GROUNDWATER IN THE CENTRAL AND WEST COAST BASINS

Major minerals data obtained from laboratory analyses were used to characterize groundwater from discrete vertical zones of each WRD well (**Table 3.4**). Research by the USGS has provided three distinct groupings of groundwater compositions. Group A groundwater is typically calcium bicarbonate or calcium bicarbonate/sulfate dominant. Group B groundwater has a typically calcium-sodium bicarbonate or sodium bicarbonate character. Group C has a sodium chloride character. A few of the WRD wells yield groundwater samples which do not fall into one of the three major groups and are classified separately in Group D.

Groundwater from Group A likely represents recent recharge water containing a significant percentage of imported water. Groundwater from Group B represents older native groundwater replenished by natural local recharge. Groundwater from Group C represents groundwater impacted by seawater intrusion or connate saline brines. **Table 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 of the Central Basin and inland of the salt water wedge and

injected water in the West Coast Basin. Group C water is generally found near the coastlines or in deeper zones. Several wells, grouped as "Other" on **Table 3.4**, exhibit a chemical character range different from Group A, B, and C ranges and represents unique waters not characteristic of the dominant flow systems in the basins. The USGS is 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
SUMMARY OF FINDINGS

This Regional Groundwater Monitoring Report was prepared by WRD to provide a comprehensive review of groundwater conditions in the CWCB during water year 2009-10. A summary of findings is presented below.

- Artificial replenishment activities combined with natural replenishment and controlled pumping have ensured a sustainable, reliable supply of groundwater in the CWCB. Artificial replenishment water sources used by WRD include imported water from the MWD, recycled water from the CSDLAC, and recycled water with advanced treatment from WBMWD, the City of Los Angeles, and WRD's Leo J. Vander Lans water treatment facility.
- Groundwater levels (heads) are monitored continuously in the CWCB during the year. The WRD nested monitoring wells show clear, significant differences in groundwater elevations between the various aquifers. The water level differences in the WRD nested monitoring wells reflect both hydrogeologic and pumping conditions in the CWCB. Vertical head differences between 1 and 40 feet occur between zones above and within the producing zones. The greatest head differences between aquifers tend to occur in the Long Beach area of the Central Basin and the inland Gardena and Carson areas of the West Coast Basin, while the smallest differences occur in the Montebello Forebay recharge area, and the Torrance area which has merged aquifers.
- Basinwide hydrographs and groundwater elevations measured in nested monitoring wells and key production wells indicate general increases with some local decreases in water levels over the Central Basin during water year 2009-10. Groundwater levels increased modestly over most of the Central Basin during water year 2009-10. Water levels increased up to 14 feet in the Cerritos area and in the unconfined Montebello Forebay area up to 11 feet. Water levels decreased up to 3 feet around the Lakewood area.
- Water levels were generally stable to slightly increasing for the coastal area of the

West Coast Basin during water year 2009-10. Water levels increased in the coastal, Carson, and Dominguez Gap areas of West Coast Basin from 1 up to 5 feet and decreased in the Gardena area up to 6 feet.

- Based on data obtained from WRD nested monitoring wells during water year 2009-10, the water quality associated with key constituents in groundwater differs both vertically between aquifers and horizontally across the CWCB.
- TDS concentrations for WRD wells located in the Central Basin are relatively low, while TDS concentrations for WRD wells located in the West Coast Basin are elevated in portions of the basin, primarily the Torrance and Dominguez Gap areas. The elevated TDS concentrations may be caused by seawater intrusion, connate brines, or possibly oil field brines.
- The Secondary MCL for iron is 0.3 mg/L. Iron is generally present at low levels in most WRD nested monitoring wells. Concentrations were above the MCL in only three wells and only one Silverado Aquifer zone. Iron was detected above the MCL in 31 of 258 production wells tested. Sources of the localized high iron concentrations have not yet been identified, but are possibly naturally occurring or come from well casings.
- Manganese concentrations exceed the MCL (50 µg/L) in a large number of nested monitoring wells and production wells across the CWCB. Similar to iron, sources of the localized high manganese concentrations have not yet been identified, but are possibly naturally occurring.
- Chloride concentrations are reasonably low in Central Basin monitoring wells and production wells, as well as in wells in the inland areas of the West Coast Basin. Some coastal areas of the West Coast Basin are impacted by high chloride groundwater.
- Nitrate concentrations in WRD nested monitoring wells in the CWCB are generally below MCLs. Concentrations approaching or exceeding the MCL (10 mg/L) tend to be limited to the uppermost zone at a particular nested well and are likely due to localized surface recharge. Concentrations above the MCL were not observed in the Silverado aquifer. CDPH data indicates that none of the CWCB production wells tested for nitrate above the MCL during the period spanning water years 2007-10.

- TCE was not detected in the Silverado Aquifer in any of the WRD nested monitoring wells sampled. The MCL for TCE in drinking water is 5 µg/L. CDPH data indicate that TCE was detected in 58 production wells in the Central Basin during the period spanning water years 2007-10, 18 out of the 58 detections exceed the MCL for TCE. In the West Coast Basin, TCE was not detected above the MCL in any production wells.
- The MCL for PCE in drinking water is 5 µg/L. PCE was detected in 9 WRD nested monitoring wells in the Central Basin and one in the West Coast Basin. PCE was detected in the Silverado aquifer in two WRD nested wells, both below the MCL. CDPH data indicate that PCE was detected in 60 production wells in the Central Basin during the period spanning water years 2007-10. A total of 12 out of the 60 detections exceeded the MCL for PCE. PCE was not detected in any of the West Coast Basin production wells.
- The MCL for arsenic in drinking water is 10 µg/L. WRD nested monitoring wells indicate that arsenic concentrations in the south-central and especially near the eastern side of the Central Basin can exceed the State MCL. Ten production wells in the Central Basin have arsenic concentrations exceeding the MCL of 10 µg/L. Arsenic was not detected above the MCL in any of the West Coast Basin production wells.
- Total organic carbon, while not regulated, is being monitored and studied in relation to the use of recycled water for artificial recharge and future development of potential groundwater production from deeper portions of the CWCB than have typically been utilized in the past. Lower concentrations were found in shallow and moderate zones, and higher concentrations (greater than 5 mg/L) were found in deeper zones.
- The MCL for perchlorate in drinking water is 6 µg/L. Perchlorate was detected in 15 of 28 nested monitoring wells in the Central Basin, and above the MCL (6 µg/L) at one location. In the West Coast Basin perchlorate was detected in 2 of 17 nested wells with one detection above the MCL. Perchlorate was detected in 5 Central Basin production wells, exceeding the MCL in 2 of them. Perchlorate was not detected in any production wells in the West Coast Basin.
- The water quality associated with key constituents in untreated imported water used

at the Montebello Forebay Spreading Grounds and treated imported water used at the Seawater Barriers remains good. Average TDS, hardness, iron, and manganese concentrations in imported water used for recharge, comply with their respective MCLs. Meanwhile, TCE and PCE were not detected in either water source. Perchlorate was detected below the MCL in untreated Colorado River water and was not detected in untreated State Project water.

- The water quality associated with key constituents in recycled water used at the Montebello Forebay Spreading Grounds and barrier injection wells also remains in compliance and is monitored regularly to ensure its safe use.
- Stormwater samples are collected and analyzed for water quality parameters by the LACDPW. Recent available data from water year 2009-10 show that average stormwater TDS concentrations are lower than most other sources of replenishment water and other constituent concentrations make stormwater a good replenishment source.
- As shown by the data presented herein, groundwater in the CWCB is of generally good quality and is suitable for use by the pumpers in the District, the stakeholders, and the public. 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 5
FUTURE ACTIVITIES

WRD will continue to update and augment its Regional Groundwater Monitoring Program to best serve the needs of the District, the pumpers, and the public. Some of the activities planned or which utilize data generated from this program for the upcoming water year 2009-10 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 has developed the Water Independence Now (WIN) initiative, which includes increasing the safe use of recycled water for groundwater recharge and reducing the reliance on imported water supplies.
- WRD will continue to maximize recycled water use at the West Coast Barrier and will promote maximum permitted recycled water injection at the Dominguez Gap and Alamitos Gap Barriers. Extensive monitoring of these recycled water injection projects will be performed by WRD Staff to comply with applicable permit conditions and to track subsurface movement of the recycled water.
- WRD will continue to monitor the quality of replenishment water sources to ensure the CWCB are being recharged with high-quality water.
- WRD continues refining the regional understanding of groundwater occurrence, movement, and quality. Water levels will be recorded using automatic dataloggers to monitor groundwater elevation differences throughout the year. Conductivity sensors are being utilized at selected locations which can track water quality changes to supplement the automated water level data. Telemetry technology is being tested which can send real-time water level data directly to the WRD office and post 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 groundwater quality. Three new wells have been completed in the past year, and five additional wells are scheduled to be completed by 2012. Each year, WRD evaluates the need to fill data gaps in the water level data, water quality data, and hydrogeologic conceptual model with additional geologic data provided from drilling, construction, and monitoring of nested wells.

- WRD will continue to sample groundwater from nested monitoring wells, and analyze the samples for general water quality constituents. In addition, WRD will continue to focus on constituents of interest to WRD, the pumpers, and other stakeholders such as TCE, PCE, arsenic, fuel oxygenates, TOC, apparent color, hexavalent chromium, and perchlorate. Emerging chemicals of concern which have not been comprehensively monitored could include pesticides, n-nitrosodimethylamine (NDMA), 1,4-dioxane, pharmaceuticals, and other emerging chemicals of concern.
- WRD staff will be working on refining the hydrogeologic conceptual model of the CWCB using data from the RGWMP and other data to improve the framework for understanding the dynamics of the groundwater system and use as a planning tool.
- WRD will continue efforts under its Groundwater Contamination Prevention Program in order to minimize or eliminate threats to groundwater supplies. The Groundwater Contamination Prevention Program includes several ongoing efforts, including the Central and West Coast Basin Groundwater Contamination Forum with key stakeholders including the Environmental Protection Agency, Department of Toxic Substances Control, Los Angeles Regional Water Quality Control Board, California Department of Public Health, United States Geological Survey, and various cities. Stakeholders meet regularly (meetings are held 3 to 4 times per year at WRD) and share data on contaminated groundwater sites within the District. WRD has acted as the meeting coordinator and data repository/distributor, helping stakeholders to characterize contamination and develop optimal methods for addressing contamination. WRD has developed a list of high-priority contaminated groundwater sites within the District. The list includes approximately 47 sites across the CWCB.
- In 2003, WRD developed a scope of work with the LACDHS to clarify the status of 217 potentially abandoned (a.k.a., “unknown status”) wells located within District

boundaries, as identified through researching WRD's groundwater production database. WRD was able to reduce the number of "unknown status" wells from 217 to 20. Most of the remaining 20 are suspected to have been paved over during development of industrial and residential neighborhoods.

- WRD will continue to be proactively involved in the oversight of the most significant contaminated sites that threaten CWCB groundwater resources.
- WRD will continue to fund the Safe Drinking Water Program to address VOC impacted groundwater, especially by PCE and TCE in the CWCB.
- Salt / Nutrient Management Plans are a new State requirement for groundwater basins throughout California. The Plans are required as part of the Recycled Water Policy issued by the State Water Resources Control Board (SWRCB) and effective as of May 14, 2009. As stated in the Policy, its purpose is to "establish uniform requirements for recycled water use and to develop sustainable water supplies throughout the state". The SWRCB therefore "supports and encourages every region…to develop a Salt / Nutrient Management Plan by 2014". With one exception (elevated TDS concentrations near the coast due to historic seawater intrusion, now controlled through freshwater barrier injection), salts and nutrients have not been shown to be a concern in the CWCB. However, since Salt / Nutrient Management Plans are required, WRD began meeting with other stakeholders and the Regional Water Quality Control Board (RWQCB, the agency responsible for bringing stakeholders' Salt / Nutrient Management Plans to the SWRCB for approval) to initiate development of a Salt / Nutrient Management Plan for the CWCB. WRD will continue to take the lead in working with the RWQCB and stakeholders to develop a Plan for the CWCB.
- WRD will continue to use the data generated by the Regional Groundwater Monitoring Program along with WRD's advanced GIS capabilities to address current and upcoming issues related to water quality and groundwater replenishment in the Central and West Coast Basins.

SECTION 6

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TABLES

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TABLE 1.1
CONSTRUCTION INFORMATION FOR WRD NESTED MONITORING WELLS

Well Name	Zone	WRD ID Number	Depth of Well (feet)	Top of Perforation (feet)	Bottom of Perforation (feet)	Aquifer Designation
Bell #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	390	370	390	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	1790	1600	1620	Not Interpreted
	2	102076	1240	1220	1240	Not Interpreted
	3	102077	1100	1080	1100	Not Interpreted
	4	102078	890	870	890	Not Interpreted
	5	102079	640	620	640	Not Interpreted
	6	102080	380	360	380	Not Interpreted
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

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	Gaspur
Gardena #1	1	100020	990	970	990	Sunnyside
	2	100021	465	445	465	Silverado
	3	100022	365	345	365	Lynwood
	4	100023	140	120	140	Gage
Gardena #2	1	101804	1335	1275	1335	Sunnyside
	2	101805	790	770	790	Silverado
	3	101806	630	610	630	Silverado
	4	101807	360	340	360	Lynwood
	5	101808	255	235	255	Gardena
Hawthorne #1	1	100887	990	910	950	Sunnyside
	2	100888	730	710	730	Silverado
	3	100889	540	520	540	Silverado
	4	100890	420	400	420	Silverado
	5	100891	260	240	260	Lynwood
	6	100892	130	110	130	Gage
Huntington Park #1	1	100005	910	890	910	Silverado
	2	100006	710	690	710	Jefferson
	3	100007	440	420	440	Gage
	4	100008	295	275	295	Exposition
	5	100009	134	114	134	Gaspur
Inglewood #1	1	100091	1400	1380	1400	Pico Formation
	2	100092	Abandoned Well			
	3	100093	450	430	450	Silverado
	4	100094	300	280	300	Lynwood
	5	100095	170	150	170	Gage
Inglewood #2	1	100824	860	800	840	Pico Formation
	2	100825	470	450	470	Sunnyside
	3	100826	350	330	350	Silverado
	4	100827	245	225	245	Lynwood

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
Lakewood #1	1	100024	1009	989	1009	Sunnyside
	2	100025	660	640	660	Silverado
	3	100026	470	450	470	Lynwood
	4	100027	300	280	300	Gage
	5	100028	160	140	160	Artesia
	6	100029	90	70	90	Bellflower
La Mirada #1	1	100876	1150	1130	1150	Sunnyside
	2	100877	985	965	985	Silverado
	3	100878	710	690	710	Lynwood
	4	100879	490	470	490	Jefferson
	5	100880	245	225	245	Gage
Lomita #1	1	100818	1340	1240	1260	Sunnyside
	2	100819	720	700	720	Sunnyside
	3	100820	570	550	570	Silverado
	4	100821	420	400	420	Silverado
	5	100822	240	220	240	Gage
	6	100823	120	100	120	Gage
Long Beach #1	1	100920	1470	1430	1450	Sunnyside
	2	100921	1250	1230	1250	Sunnyside
	3	100922	990	970	990	Silverado
	4	100923	619	599	619	Lynwood
	5	100924	420	400	420	Jefferson
	6	100925	175	155	175	Gage
Long Beach #2	1	101740	1090	970	990	Sunnyside
	2	101741	740	720	740	Sunnyside
	3	101742	470	450	470	Silverado
	4	101743	300	280	300	Lynwood
	5	101744	180	160	180	Gage
	6	101745	115	95	115	Gaspur
Long Beach #3	1	101751	1390	1350	1390	Sunnyside
	2	101752	1017	997	1017	Silverado
	3	101753	690	670	690	Silverado
	4	101754	550	530	550	Silverado
	5	101755	430	410	430	Lynwood
Long Beach #4	1	101759	1380	1200	1220	Pico Formation
	2	101760	820	800	820	Sunnyside
Long Beach #6	1	101792	1530	1490	1510	Pico Formation
	2	101793	950	930	950	Sunnyside
	3	101794	760	740	760	Sunnyside
	4	101795	500	480	500	Silverado
	5	101796	400	380	400	Lynwood
	6	101797	240	220	240	Gage
Long Beach #8	1	101819	1495	1435	1455	Pico Formation
	2	101820	1040	1020	1040	Sunnyside
	3	101821	800	780	800	Silverado
	4	101822	655	635	655	Silverado
	5	101823	435	415	435	Lynwood
	6	101824	185	165	185	Gage

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
Los Angeles #1	1	100926	1370	1350	1370	Pico Formation
	2	100927	1100	1080	1100	Sunnyside
	3	100928	940	920	940	Silverado
	4	100929	660	640	660	Lynwood
	5	100930	370	350	370	Gage
Los Angeles #2	1	102003	1370	1330	1370	Not Interpreted
	2	102004	730	710	730	Not Interpreted
	3	102005	525	505	525	Not Interpreted
	4	102006	430	410	430	Not Interpreted
	5	102007	265	245	265	Not Interpreted
	6	102008	155	135	155	Not Interpreted
Los Angeles #3	1	102069	1230	1210	1230	Not Interpreted
	2	102070	895	875	895	Not Interpreted
	3	102071	725	705	725	Not Interpreted
	4	102072	570	550	570	Not Interpreted
	5	102073	350	330	350	Not Interpreted
	6	102074	210	190	210	Not Interpreted
Montebello #1	1	101770	980	900	960	Pico Formation
	2	101771	710	690	710	Sunnyside
	3	101772	520	500	520	Silverado
	4	101773	390	370	390	Lynwood
	5	101774	230	210	230	Gage
	6	101775	110	90	110	Exposition
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

TABLE 1.1
CONSTRUCTION INFORMATION FOR WRD NESTED MONITORING WELLS

Well Name	Zone	WRD ID Number	Depth of Well (feet)	Top of Perforation (feet)	Bottom of Perforation (feet)	Aquifer Designation
PM-1 Columbia	1	100042	600	555	595	Sunnyside
	2	100043	505	460	500	Silverado
	3	100044	285	240	280	Lynwood
	4	100045	205	160	200	Gage
PM-3 Madrid	1	100034	685	640	680	Sunnyside
	2	100035	525	480	520	Silverado
	3	100036	285	240	280	Lynwood
	4	100037	190	145	185	Gage
PM-4 Mariner	1	100038	715	670	710	Sunnyside
	2	100039	545	500	540	Silverado
	3	100040	385	340	380	Lynwood
	4	100041	245	200	240	Lynwood
PM-5 Columbia Park	1	102047	1380	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
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	1390	1345	1365	Not Interpreted
	2	102063	1180	1160	1180	Not Interpreted
	3	102064	1040	1020	1040	Not Interpreted
	4	102065	795	775	795	Not Interpreted
	5	102066	625	605	625	Not Interpreted
	6	102067	235	215	235	Not Interpreted
	7	102068	70	60	70	Not Interpreted
South Gate #1	1	100893	1460	1440	1460	Pico Formation
	2	100894	1340	1320	1340	Sunnyside
	3	100895	930	910	930	Silverado
	4	100896	585	565	585	Lynwood
	5	100897	250	220	240	Exposition
Westchester #1	1	101776	860	740	760	Pico Formation
	2	101777	580	560	580	Sunnyside
	3	101778	475	455	475	Silverado
	4	101779	330	310	330	Lynwood
	5	101780	235	215	235	Gage

TABLE 1.1
CONSTRUCTION INFORMATION FOR WRD NESTED MONITORING WELLS

Well Name	Zone	WRD ID Number	Depth of Well (feet)	Top of Perforation (feet)	Bottom of Perforation (feet)	Aquifer Designation
Whittier #1	1	101735	1298	1180	1200	Sunnyside
	2	101736	940	920	940	Sunnyside
	3	101737	620	600	620	Silverado
	4	101738	470	450	470	Lynwood
	5	101739	220	200	220	Gage
Whittier #2	1	101936	1390	1370	1390	Sunnyside
	2	101937	1110	1090	1110	Sunnyside
	3	101938	675	655	675	Silverado
	4	101939	445	425	445	Silverado
	5	101940	335	315	335	Lynwood
	6	101941	170	150	170	Gardena
Whittier Narrows #1	1	100046	769	749	769	Sunnyside
	2	100047	769	609.5	629	Sunnyside
	3	100048	769	462.5	482.5	Sunnyside
	4	100049	769	392.5	402	Silverado
	5	100050	769	334	343.5	Silverado
	6	100051	769	272.5	282.5	Lynwood
	7	100052	769	233.5	243	Jefferson
	8	100053	769	163	173	Gardena
	9	100054	769	95	104.5	Gaspur
Whittier Narrows #2	1	100055	769	659.3	678.4	Pico Formation
	2	100056	769	579.1	598.2	Pico Formation
	3	100057	769	469.0	488.2	Pico Formation
	4	100058	769	418.6	428.2	Pico Formation
	5	100059	769	328.7	338.3	Pico Formation
	6	100060	769	263.2	273.3	Not Interpreted
	7	100061	769	213.7	223.3	Not Interpreted
	8	100062	769	135.7	145.3	Not Interpreted
	9	100063	769	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 2009-2010

	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6
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
10/23/2009	-17.1	-32.42	-18.18	-19.4	-12.53	16.74
12/28/2009	-12.27	-29	-13.32	-12.74	-7.62	17.69
3/29/2010	-17.08	-27.47	-6.93	-11.92	-6.65	17.55
5/4/2010	-16.86	-28.01	-11.05	-13.02	-7.51	17.59
6/29/2010	-19.47	-29.47	-13.77	-14.02	-7.97	16.25
9/26/2010	-19.89	-32.45	-16.72	-16.02	-10.59	10.86
9/27/2010	-19.76	-32.49	-16.62	-16.53	-12.03	14.8
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
12/28/2009	3.43	4.43	6.3	12.22	15.98	15.95
3/29/2010	9.77	10.83	13.64	19.63	21.81	18.68
5/4/2010	10.32	12.03	14.79	20.99	22.4	19.46
6/29/2010	5.69	7.79	10.15	17.75	20.09	17.05
9/27/2010	0.8	1.19	2.99	9.9	12.42	10.98
Carson #1						Reference Point Elevation: 24.16
Depth of Well	990-1010	740-760	460-480	250-270		
Aquifer Name	Sunnyside	Silverado	Lynwood	Gage		
2/17/2010	-49.57	-50.65	-16.44	-14.67		
3/11/2010	-50.78	-49.58	-16.25	-14.57		
3/24/2010	-50.17	-49.12	-16.19	-14.49		
4/12/2010	-51.74	-50.14	-15.96	-14.29		
5/19/2010	-52.76	-50.88	-15.87	-14.18		
6/22/2010	-54.67	-52.98	-16.17	-14.39		
7/23/2010	-53.49	-51.89	-16.28	-14.51		
8/18/2010	-55.09	-53.39	-16.36	-14.56		
9/21/2010	-52.16	-50.49	-15.99	-14.32		
9/27/2010	-52.19	-50.54	-15.94	-14.25		
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	
12/30/2009	-40.61	-35.71	-35.33	-31.47	-28.72	
3/11/2010	-39.06	-34.11	-33.65	-30.09	-27.59	
3/26/2010	-38.97	-35.17	-33.83	-30.13	-27.54	
7/1/2010	-39.44	-34.38	-34.02	-30.14	-27.43	
9/21/2010	-38.93	-34.03	-33.65	-29.88	-27.23	
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
12/23/2009	-41.64	-49.71	-38.47	11.04	15.54	15.58
4/6/2010	-39.32	-50.29	-34.24	14.00	17.53	17.52
5/5/2010	-40.04	-50.51	-32.41	13.42	17.04	17.03
5/27/2010	-43.75	-53.54	-33.1	13.05	16.4	16.34
6/3/2010	-44.93	-54.09	-33.59	12.98	16.29	16.28
6/29/2010	-45.72	-53.38	-34.15	12.74	16.07	16.04
9/20/2010	-48.76	-56.92	-39.53	11.82	15.28	15.26
Cerritos #2						Reference Point Elevation: 75.27
Depth of Well	1350-1370	915-935	740-760	490-510	350-370	150-170
Aquifer Name	Sunnyside	Silverado	Silverado	Jefferson	Gage	Gaspur
12/23/2009	-20.14	-27.37	-23.81	-4.81	20.24	28.14
4/6/2010	-15.98	-28.63	-6.26	-4.75	20.96	28.66
5/5/2010	-16.63	-31.91	-29.62	-5.57	20.48	28.66
5/18/2010	-17.93	-32.72	-28.42	-5.45	20.43	28.44
5/25/2010	-18.37	-33.54	-28.96	-5.54	20.49	28.4
5/28/2010	-18.74	-32.99	-28.97	-5.85	20.22	28.12
6/24/2010	-20.32	-34.61	-29.15	-5.77	19.98	27.94
9/23/2010	-23.37	-36.45	-34.71	-10.86	18.33	27.00

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TABLE 2.1
GROUNDWATER ELEVATIONS, WATER YEAR 2009-2010

	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6
Chandler #3						Reference Point Elevation: 153.2
Depth of Well	341-363	165-192				
Aquifer Name	Gage/Lynw/Silv	Gage/Lynw/Silv				
12/29/2009	-17.84	-17.66				
03/29/2010	-17.04	-16.87				
04/20/2010	-17.22	-17.15				
06/30/2010	-18.16	-17.47				
07/13/2010	-17.75	-17.6				
09/09/2010	-18.94	-18.89				
09/21/2010	-18.6	-18.63				
Commerce #1						Reference Point Elevation: 170.09
Depth of Well	1330-1390	940-960	760-780	570-590	325-345	205-225
Aquifer Name	Pico Formation	Sunnyside	Sunnyside	Silverado	Hollydale	Exposition/Gage
12/29/2009		50.48	47.1	12.48	16.51	53.99
3/29/2010	54.15	55.13	51.58	15.66	18.77	54.24
5/4/2010	54.04	56.19	52.7	16.46	19.14	54
6/29/2010		55.43	51.54	13.48	15.52	53.69
8/12/2010		53.14	49.2	10.57	14.01	53.16
9/20/2010	53.49	51.57	47.64	10.51	14.11	52.92
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	
12/29/2009	-65.73	-65.41	-23.93	-9.33	-4.81	
3/22/2010	-66.14	-65.74	-21.8	-8.03	-5.79	
6/29/2010	-69.75	-69.37	-22.18	-10.27	-8.01	
9/14/2010	-70.11	-69.76	-27.82	-14.97	-13.34	
9/23/2010	-70.38	-70.07	-27.02	-17.55	-14.71	
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
12/29/2009	-26.02	-46.72	-38.62	-37.46	-31.08	-24.44
3/26/2010	-26.75	-46.96	-39.75	-38.58	-30.58	-24.42
6/29/2010	-27.19	-49.76	-41.27	-39.93	-31.75	-25.78
7/9/2010	-27.44	-49.59	-42.15	-41.32	-35.13	-26.86
9/15/2010	-28.87	-50.82	-41.89	-40.68	-33.76	-27.06
Downey #1						Reference Point Elevation: 97.21
Depth of Well	1479-1495	830-850	585-605	380-400	295-315	150-170
Aquifer Name	Sunnyside	Sunnyside	Silverado	Hollydale	Gage	Exposition
12/17/2009	-6.42	-2.39	3.35	6.36	33.62	38.16
3/29/2010	1.76	5.22	5.89	7.35	33.43	37.7
5/5/2010	1.98	5.52	5.78	7.24	33.32	37.54
7/14/2010	-2.58	1.59	2.43	4.03	32.50	37.20
9/16/2010	-7.33	-3.46	-1.48	1.11	31.44	36.73
Gardena #1						Reference Point Elevation: 82.20
Depth of Well	970-990	445-465	345-365	120-140		
Aquifer Name	Sunnyside	Silverado	Lynwood	Gage		
12/28/2009	-57.41	-129.56	-97.42	-12.18		
1/19/2010	-57.26	-128.5	-96.72	-11.8		
3/9/2010	-57.3	-125.72	-95.76	-12.24		
3/22/2010	-57.23	-127.70	-95.83	-12.11		
6/30/2010	-56.21	-135.43	-98.85	-11.91		
7/13/2010	-56.58	-135.50	-99.21	-12.04		
9/22/2010	-57.54	-137.83	-100.9	-12.03		
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	
12/30/2009	-44.69	-58.54	-58.77	-24.57	-11.28	
3/17/2010	-44.14	-57.37	-57.43	-23.91	-10.94	
6/30/2010	-43.54	-57.75	-58	-23.8	-10.57	
7/13/2010	-43.79	-58.53	-58.76	-24.21	-10.73	
9/22/2010	-44.47	-58.66	-58.9	-23.94	-10.68	

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TABLE 2.1
GROUNDWATER ELEVATIONS, WATER YEAR 2009-2010

	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6
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
12/29/2009	-80.93	-12.8	-11.45	-11.2	-7.13	1.11
3/30/2010	-81.48	-12.11	-10.87	-10.68	-6.66	1.52
4/21/2010	-78.82	-12.05	-10.84	-10.61	-6.65	1.87
5/6/2010	-80.3	-12.06	-10.88	-10.61	-6.68	1.8
5/10/2010	-80.65	-12.24	-11.06	-10.85	-6.84	1.64
6/30/2010	-80.68	-12.62	-11.5	-11.25	-7.05	1.81
9/26/2010	-79.15	-11.92	-10.81	-10.63	-6.6	0.53
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	
12/29/2009	-30	-29.82	-23.57	13.71	Dry	
3/22/2010	-30.15	-30.86	-23.17	13.6	Dry	
3/29/2010	-30.71	-31.15	-23.15	13.6	Dry	
5/12/2010	-30.96	-31.62	-25.2	12.88	Dry	
6/22/2010	-31.05	-31.27	-24.52	12.77	Dry	
7/23/2010	-30.87	-31.98	-24.78	12.63	Dry	
8/19/2010	-29.9	-30.86	-24.13	12.8	Dry	
9/27/2010	-29.52	-32.14	-23.57	12.33	Dry	
Inglewood #1						Reference Point Elevation: 110.56
Depth of Well	1380-1400		430-450	280-300	150-170	
Aquifer Name	Pico Formation	Abandoned	Silverado	Lynwood	Gage	
12/29/2009	-33.35		-44.98	0.06	5.27	
3/30/2010	-33.55		-43.61	0.63	5.27	
4/27/2010	-33.82		-43.73	0.41	5.56	
5/6/2010	-34.89		-44.01	0.35	5.52	
6/30/2010	-32.82		-44.36	0.49	5.63	
9/21/2010	-33.68		-44.11	0.87	5.78	
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		
12/29/2009	-26.06	-17.51	-5.86	-1.5		
3/30/2010	-26.03	-17.34	-5.56	-1.22		
6/30/2010	-26.44	-17.69	-5.59	-1.22		
9/22/2010	-25.79	-17.38	-5.39	-1.04		
Lakewood #1						Reference Point Elevation: 37.91
Depth of Well	989-1009	640-660	450-470	280-300	140-160	70-90
Aquifer Name	Sunnyside	Silverado	Lynwood	Gage	Artesia	Bellflower
12/29/2009	-121.17	-67.98	-59.34	-29.5	-13.84	10.59
3/30/2010	-84.08	-57.65	-52.77	-30.94	-14.78	10.9
5/6/2010	-132.02	-67.04	-58.89	-30.48	-14.29	11.18
6/30/2010	-85.37	-58.14	-53.94	-28.47	-13.09	10.7
9/16/2010	-143.91	-67.23	-60.23	-34.48	-17.91	9.910
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	
12/23/2009	-27.68	-25.52	-33.52	-42.5	-21.1	
2/1/2010	-24.44	-22.65	-26.75	-33.47	-17.43	
3/15/2010	-21.28	-18.53	-22.89	-35.82	-13.06	
3/30/2010	-21.51	-18.45	-39.27	-41.36	-15.82	
5/23/2010	-24.25	-20.47	-37.56	-47.23	-16.29	
5/25/2010	-24.47	-20.65	-38.45	-48.64	-16.53	
6/24/2010	-26.05	-22.42	-43.55	-55.04	-19.6	
9/10/2010	-30.54	-26.77	-40.2	-58.94	-23.98	
9/30/2010	-31.92	-28.02	-45.59	-57.37	-23.17	

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TABLE 2.1
GROUNDWATER ELEVATIONS, WATER YEAR 2009-2010

	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6
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
12/29/2009	-32.48	-19.32	-18.23	-18.52	-16.56	-18.08
3/24/2010	-31.8	-17.53	-21.49	-19.63	-17.31	-20.25
6/30/2010	-31.6	-18.77	-17.61	-17.75	-15.95	-17.08
7/13/2010	-31.25	-19.04	-17.79	-18.01	-16.07	-17.24
9/21/2010	-32.93	-19.82	-19.43	-18.97	-16.38	-17.71
Long Beach #1						Reference Point Elevation: 28.69
Depth of Well	1430-1450	1230-1250	970-990	599-619	400-420	155-175
Aquifer Name	Sunnyside	Sunnyside	Silverado	Lynwood	Jefferson	Gage
12/23/2009	-39.61	-42.01	-78.13	-46.9	-43.26	-17.52
3/26/2010	-44.63	-47.69	-74.31	-43.67	-41.16	-13.7
5/25/2010	-46.05	-49.18	-79.41	-47.27	-43.75	-13.12
5/27/2010	-46.01	-49.16	-79.12	-47.16	-43.33	-12.83
6/29/2010	-46.54	-49.70	-81.24	-47.27	-43.25	-13.59
9/27/2010	-47.52	-50.52	-85.15	-49.75	-46.59	-16.53
Long Beach #2						Reference Point Elevation: 42.15
Depth of Well	970-990	720-740	450-470	280-300	160-180	95-115
Aquifer Name	Sunnyside	Sunnyside	Silverado	Lynwood	Jefferson	Gage
12/28/2009	-93.14	-44.73	-38.57	-12.67	-1.43	0.95
3/29/2010	-91.24	-50.23	-43.4	-12.31	-0.84	1.36
6/29/2010	-99.96	-52.38	-43	-12.83	-0.96	1.24
9/27/2010	-98.69	-50.53	-44.73	-13.62	-1.44	0.82
Long Beach #3						Reference Point Elevation: 24.60
Depth of Well	1350-1390	997-1017	670-690	530-550	410-430	
Aquifer Name	Sunnyside	Silverado	Silverado	Silverado	Lynwood	
12/31/2009	-38.40	-52.84	-52.84	-53.17	-2.05	
3/10/2010	-37.85	-48.54	-48.53	-48.84	-2.18	
3/26/2010	-37.73	-48.16	-48.16	-48.5	-2.15	
6/23/2010	-37.42	-52.1	-52.1	-52.54	-2.33	
9/21/2010	-37.62	-48.68	-48.66	-49.02	-1.99	
Long Beach #4						Reference Point Elevation: 9.52
Depth of Well	1200-1220	800-820				
Aquifer Name	Pico Formation	Sunnyside				
10/25/2007	-35.73	-18.82				
12/27/2007	-35.23	-17.52				
03/19/2008	-34.46	-16.11				
09/17/2008	-34.47	-15.11				
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
12/31/2009	-50.83	-69.81	-71.37	-119.75	-119.8	-40.24
3/26/2010	-58.18	-76.93	-77.72	-116.42	-116.55	-39.76
5/11/2010	-60.02	-78.27	-79.44	-121.91	-121.93	-41.25
5/27/2010	-60.75	-78.87	-79.97	-117.84	-117.59	-41.62
6/22/2010	-61.21	-79.6	-80.77	-123.63	-123.66	-41.74
7/26/2010	-62.28	-79.94	-80.96	-117.59	-117.68	-42.2
8/18/2010	-61.95	-77.66	-78.66	-116.89	-117	-42.26
9/20/2010	-62.22	-78.47	-79.57	-124.74	-124.77	-42.02
Long Beach #8						Reference Point Elevation: 17.78
Depth of Well	1435-1455	1020-1040	780-800	635-655	415-435	165-185
Aquifer Name	Pico Formation	Sunnyside	Silverado	Silverado	Lynwood	Gage
11/4/2009	-17.81	-35.89	-49.19	-46.82	-46.39	1.6
1/5/2010	-18.12	-36.18	-49.65	-47.21	-46.78	1.57
3/26/2010	-18.33	-35.95	-45.9	-43.67	-43.28	1.66
6/23/2010	-18.41	-35.55	-48.37	-45.96	-45.52	1.79
9/15/2010	-18.37	-35.87	-45.51	-43.34	-43	1.77

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TABLE 2.1
GROUNDWATER ELEVATIONS, WATER YEAR 2009-2010

	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6
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	
12/31/2009	-26.11	-24.45	-25.77	-28.5	-21.25	
3/29/2010	-25.79	-23.96	-25.26	-27.44	-20.48	
6/30/2010	-26.16	-24.15	-25.49	-27.93	-21.21	
9/24/2010	-26.3	-23.57	-24.6	-26.44	-20.24	
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	Not Interpreted	Not Interpreted	Not Interpreted	Not Interpreted	Not Interpreted	Not Interpreted
12/29/2009	48.25	0.94	0.58	-16.39	-25.39	Dry
3/29/2010	48.92	-0.44	-0.88	-16.85	-25.2	Dry
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
12/31/2009	81.09	78.52	78.02	74.83	70.66	Dry
3/30/2010	106.66	95.83	95.23	90.64	81.12	Dry
6/23/2010	95.31	92.73	92	87.87	85.37	Dry
9/20/2010	86.68	80.59	79.83	76.35	78.85	Dry
Norwalk #1						Reference Point Elevation: 95.44
Depth of Well	1400-1420	990-1010	720-740	430-450	220-240	
Aquifer Name	Sunnyside	Silverado	Lynwood	Jefferson	Gage	
11/3/2009	22.19	-18.6	2.42	-1.96	-1.9	
12/23/2009	24.24	-15.65	4.96	-0.78	-0.82	
3/30/2010	29.4	-11.67	10.32	0.33	0.41	
5/5/2010	30.16	-12.52	10.3	-0.45	0.15	
6/24/2010	28.29	-14.28	8.39	-2.67	-1.21	
9/30/2010	24.24	-19.6	3.41	-4.45	-3.01	
Norwalk #2						Reference Point Elevation: 107.4
Depth of Well	1460-1480	1260-1280	960-980	800-820	480-500	236-256
Aquifer Name	Sunnyside	Sunnyside	Silverado	Lynwood	Gardena	Exposition
12/23/2009	5.1	5.21	2.09	4.57	16.47	23.25
3/30/2010	10.7	10.78	10.29	13.39	18.22	24.95
5/5/2010	11.43	11.44	10.43	13.78	18.33	25.18
6/24/2010	9.99	10.08	6.93	9.91	16.25	23.95
9/29/2010	5.35	5.44	-1.1	1.78	10.72	19.86
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		
12/29/2009	126.52	98.45	97.05	106.33		
3/30/2010	140.82	134.51	134.27	133.01		
4/26/2010	143.07	124.43	123.31	133.01		
6/29/2010	140.49	120.91	122.02	126.57		
9/28/2010	129.82	104.72	102.02	109.16		
Pico #2						Reference Point Elevation: 149.6
Depth of Well	1180-1200	830-850	560-580	320-340	235-255	100-120
Aquifer Name	Sunnyside	Sunnyside	Sunnyside	Silverado	Lynwood	Gaspur
10/21/2009	54.57	51.79	56.75	69.82	69.4	78.09
12/16/2009	59.6	60.16	61.91	70.19	69.82	76.13
3/30/2010	81.75	80.89	87.23	90.98	90.52	94.78
5/6/2010	82.88	82.22	89.2	92.83	93.6	101.89
6/15/2010	76.87	75.26	81.83	91.67	92.51	96.51
9/23/2010	59.81	58.09	63.78	80.79	82.02	88.81

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TABLE 2.1
GROUNDWATER ELEVATIONS, WATER YEAR 2009-2010

	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6
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		
12/28/2009	-12.34	-9.25	-9.19	-9.2		
2/17/2010	-11.89	-8.94	-8.88	-8.81		
3/22/2010	-11.74	-8.75	-8.75	-8.69		
6/30/2010	-11.69	-8.71	-8.65	-8.62		
9/22/2010	-11.29	-8.42	-8.32	-8.36		
PM-4 Mariner						Reference Point Elevation: 97.7
Depth of Well	670-710	500-540	340-380	200-240		
Aquifer Name	Sunnyside	Silverado	Lynwood	Lynwood		
12/28/2009	-6.81	-3.81	-0.74	-0.72		
2/17/2010	-6.43	-4.28	-1.16	-1.12		
3/28/2010	-6.32	-3.41	-0.34	-0.25		
4/13/2010	-6.11	-3.46	-0.3	-0.26		
5/19/2010	-6.19	-3.65	-0.5	-0.45		
6/22/2010	-6.38	-4.55	-1.38	-1.34		
7/23/2010	-6.62	-4.61	-1.49	-1.43		
8/19/2010	-6.58	-4.5	-1.36	-1.31		
9/17/2010	-6.05	-3.58	-0.4	-0.34		
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
12/28/2009	-37.79	-47.34	-9.6	-7.07	-0.98	-0.62
1/25/2010	-37.68	-47.01	-9.29	-6.98	-1.13	-0.84
2/16/2010	-37.71	-46.69	-9.26	-6.83	-1.14	-0.76
3/3/2010	-37.7	-46.57	-9.24	-6.91	-1.15	-0.76
3/10/2010	-37.77	-46.57	-9.17	-6.79	-1.07	-0.74
3/29/2010	-37.71	-46.45	-9.11	-6.55	-0.43	-0.13
6/30/2010	-37.12	-45.29	-8.99	-6.73	-1.53	-1.14
9/22/2010	-37.17	-47.24	-8.14	-6.03	-0.76	-0.42
PM-6 Madrona Marsh						Reference Point Elevation: 79
Depth of Well	1195-1235	905-925	770-790	530-550	390-410	240-260
Aquifer Name	Pico Formation	Sunnyside	Sunnyside	Silverado	Lynwood	Gage
12/28/2009	-37.9	-14.04	-12.34	-5.04	-3.84	-3.35
3/29/2010	-37.02	-13.19	-11.69	-4.24	-2.83	-2.43
6/30/2010	-36.57	-13.2	-11.75	-4.7	-3.16	-2.8
8/6/2010	-37.5	-13.47	-11.85	-4.65	-3.35	-2.86
9/22/2010	-37.2	-13.17	-11.64	-4.13	-2.9	-2.44
Rio Hondo #1						Reference Point Elevation: 144.36
Depth of Well	1110-1130	910-930	710-730	430-450	280-300	140-160
Aquifer Name	Sunnyside	Sunnyside	Sunnyside	Silverado	Lynwood	Gardena
12/17/2009	55.95	55.49	54.79	45.48	50.06	51.73
3/29/2010	72.95	74.68	73.87	64.31	72.5	74.39
5/4/2010	75.38	76.6	75.56	68.36	78.23	80.6
5/20/2010	74.12	74.05	73.08	66.44	75.08	77.29
6/7/2010	71.59	69.88	69.03	61.15	71.07	73.6
6/9/2010	71.48	69.8	68.93	60.68	70.72	73.27
6/16/2010	70.42	68.16	67.24	59.96	69.44	71.95
7/22/2010	64.84	62.77	61.92	52.13	62.49	65.42
8/19/2010	61.91	57.83	56.98	47.79	57.72	60.75
9/23/2010	57.49	53.54	52.21	44.55	53.34	56.37
9/27/2010	56.92	50.95	50.01	42.85	52.51	55.7

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TABLE 2.1
GROUNDWATER ELEVATIONS, WATER YEAR 2009-2010

	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6
Seal Beach #1						Reference Point Elevation: 7
Depth of Well	1345-1365	1160-1180	1020-1040	775-795	605-625	215-235
Aquifer Name	Not Interpreted	Not Interpreted	Not Interpreted	Not Interpreted	Not Interpreted	Not Interpreted
6/24/2010	-45.04	-45.23	-45.12	-70.64	-50.1	-13.07
7/27/2010	-45.93	-46.13	-46.01	-72.01	-51.63	-13.84
9/8/2010	-46.02	-46.2	-46.09	-76.11	-51.93	-15.02
9/10/2010	-46.11	-46.29	-46.17	-76.2	-52.07	-15.02
9/20/2010	-46.27	-46.44	-46.34	-75.22	-52.31	-13.93
	ZONE 7					
Depth of Well	60-70					
Aquifer Name	Not Interpreted					
6/24/2010	-4.28					
7/27/2010	-4.79					
9/8/2010	-5.81					
9/10/2010	-5.74					
9/20/2010	-5.3					
South Gate #1						Reference Point Elevation: 90.96
Depth of Well	1440-1460	1320-1340	910-930	565-585	220-240	
Aquifer Name	Pico Formation	Sunnyside	Silverado	Lynwood	Exposition	
10/19/2009	-20.73	-17.83	-11.96	-12.02	29.81	
1/5/2010	-15.51	-12.34	-5.84	-9.09	29.89	
3/30/2010	-11.11	-7.97	-2.72	-9.25	29.61	
5/5/2010	-10.99	-7.9	-2.45	-10.65	29.51	
5/14/2010	-11.11	-8.09	-3.41	-11.06	29.39	
6/29/2010	-13.28	-10.07	-5.26	-13.6	29.08	
7/8/2010	-13.77	-10.59	-7.46	-12.62	28.89	
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	
12/29/2009	1.81	8.66	8.85	8.89	8.93	
3/25/2010	2.22	8.83	9.02	9.07	9.15	
6/30/2010	2.22	8.91	9.18	9.18	9.21	
9/22/2010	2.11	8.86	9.05	9.02	9.07	
Whittier #1						Reference Point Elevation: 217.17
Depth of Well	1180-1200	920-940	600-620	450-470	200-220	
Aquifer Name	Sunnyside	Sunnyside	Silverado	Lynwood	Gage	
12/29/2009	119.59	119.59	111.11	108.84	198.41	
3/30/2010	119.39	119.37	111.8	109.84	199.91	
6/24/2010	119.06	119.02	111.69	109.88	199.46	
9/28/2010	118.82	118.77	111.14	109.06	199.02	
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
12/31/2009	81.44	82.1	72.96	74.77	91.08	98.25
3/30/2010	92.98	93.39	90.41	91.37	103.82	107.2
4/26/2010	94.96	95.27	93.62	94.64	107.37	109.92
6/15/2010	93.77	93.97	90.13	87.97	102.44	108.58
9/29/2010	84.98	85.24	66.82	66	93.39	103.45
Willowbrook #1						Reference Point Elevation: 96.21
Depth of Well	885-905	500-520	360-380	200-220		
Aquifer Name	Sunnyside	Silverado	Lynwood	Gage		
12/30/2009	-52.77	-37.12	-40.79	-40.33		
3/16/2010	-52.14	-37.27	-40.53	-39.92		
3/17/2010	-52.12	-37.23	-40.31	-39.77		
5/28/2010	-53.19	-37.99	-41.83	-41.05		
6/22/2010	-53.69	-38.39	-42.29	-41.53		
7/23/2010	-54.09	-38.74	-43.21	-42.21		
8/18/2010	-54.36	-38.85	-44.28	-42.51		
9/17/2010	-54.63	-39.09	-43.82	-43.06		
… 9/22/2010	-53.61	-38.68	-43.31	-42.62		

TABLE 2.1
GROUNDWATER ELEVATIONS, WATER YEAR 2009-2010

	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6
Wilmington #1						Reference Point Elevation: 37.96
Depth of Well	915-935	780-800	550-570	225-245	120-140	
Aquifer Name	Sunnyside	Sunnyside	Silverado	Lynwood	Gage	
12/29/2009	-50.57	-51.16	-51.01	-17.82	-14.26	
3/24/2010	-46.73	-47.35	-47.26	-17.41	-14.03	
5/11/2010	-47.78	-48.35	-48.32	-16.84	-13.45	
6/7/2010	-48.69	-49.22	-49.18	-17.2	-13.72	
6/30/2010	-49.19	-49.73	-49.66	-17.14	-13.66	
7/13/2010	-49.21	-49.77	-49.75	-17.2	-13.67	
8/18/2010	-49.61	-49.54	-50.1	-17.49	-13.95	
9/21/2010	-45.55	-46.08	-46.06	-16.57	-13.25	
Wilmington #2						Reference Point Elevation: 29.78
Depth of Well	950-970	755-775	540-560	390-410	120-140	
Aquifer Name	Sunnyside	Silverado	Lynwood	Lynwood	Gage	
12/29/2009	-36.4	-31.44	-26.48	-25.53	-6.5	
3/24/2010	-34.4	-29.98	-25.3	-24.4	-6.38	
6/29/2010	-34.88	-29.73	-24.95	-23.95	-5.89	
8/10/2010	-35.81	-30.86	-25.77	-24.78	-5.97	
8/17/2010	-35.72	-30.77	-25.64	-24.65	-5.89	
9/21/2010	-33.43	-29.18	-24.55	-23.62	-6	
Whittier Narrows #1						Reference Point Elevation: 215.14
Depth of Well	749-769	609.5-629	462.5-482.5	392.5-402	334-343.5	272.5-282.5
Aquifer Name	Sunnyside	Sunnyside	Sunnyside	Silverado	Silverado	Lynwood
3/17/2010	178.24	179.51	181.72	185.78	186.67	187.99
9/8/2010	172.38	174.06	176.25	180.08	181.01	182.15
	ZONE 7	**ZONE 8**	**ZONE 9**			
Depth of Well	233.5-243	163-173	95-104.5			
Aquifer Name	Jefferson	Gardena	Gaspur			
3/17/2010	187.95	187.99	189.5			
9/8/2010	182.13	182.06	183.62			
Whittier Narrows #2						Reference Point Elevation: 209.08
Depth of Well	659-678	579-598	469-488	419-428	329-338	263-273
Aquifer Name	Pico Formation	Pico Formation	Pico Formation	Pico Formation	Pico Formation	Not Defined
3/17/2010	-11.93	-11.79	-10.77	-2.47	112.8	167.27
9/9/2010	-12.95	-12.76	-12.81	-5.98	103.68	157.55
	ZONE 7	**ZONE 8**	**ZONE 9**			
Depth of Well	214-224	136-145	91-100			
Aquifer Name	Not Defined	Not Defined	Gardena			
3/17/2010	168.37	168.96	173.17			
9/9/2010	158.53	160.17	166.78			

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TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2009/2010

Constituents	Units	MCL	MCL Type	Bell #1											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				5/20/2010	9/26/2010	5/20/2010	9/26/2010	5/20/2010	9/26/2010	5/20/2010	9/26/2010	5/20/2010	9/26/2010	5/20/2010	9/26/2010
General Mineral Characteristics															
Total Dissolved Solids (TDS)	mg/l	1000	S	**1010**	990	350	320	310	310	350	350	450	440	650	660
Cation Sum	meq/l			16	16	5.9	5.8	5.4	5.1	6.2	6	7.8	7.3	11	12
Anion Sum	meq/l			17	17	5.6	5.6	5.2	5.2	5.9	5.8	7.4	7.3	11	11
Iron	mg/l	0.3	S	0.12	0.13	0.028	0.024	ND	ND	0.021	0.021	ND	ND	ND	ND
Manganese	ug/l	50	S	23	22	71	78	48	50	70	74	ND	ND	ND	ND
Turbidity	NTU	5	S	0.54	0.43	0.14	0.44	0.1	0.31	0.2	0.29	0.28	0.45	1.4	11
Alkalinity	mg/l			640	630	170	170	160	160	180	180	180	180	250	250
Boron	mg/l	1	N	1.6	1.6	0.15	0.15	0.14	0.13	0.16	0.16	0.16	0.14	0.17	0.16
Bicarbonate	mg/l			780	770	210	200	200	190	220	220	220	220	300	300
Calcium	mg/l			12	12	54	52	48	44	59	57	78	72	120	130
Carbonate as CO3	mg/l			11	13	2.2	2.4	ND	2	ND	2.4	ND	2.2	ND	ND
Hardness (Total, as CaCO3)	mg/l			54	53	180	180	160	150	200	200	270	250	440	450
Chloride	mg/l	500	S	140	140	20	22	26	28	26	26	48	49	110	110
Fluoride	mg/l	2	P	0.43	0.38	0.23	0.19	0.41	0.37	0.42	0.38	0.34	0.29	0.37	0.32
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.85	0.92	0.82	0.84	0.66	0.69	0.73	0.89	0.8	0.95	0.95	1.1
Magnesium, Total, ICAP	None			5.6	5.5	11	11	11	10	14	14	19	18	32	33
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	1.5	1.4	2.6	2.6
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			5.3	5.4	2.8	3	3.4	3.4	3.3	3.4	2.9	2.8	2.9	3.1
Sodium	mg/l			340	340	51	50	47	45	46	44	52	48	60	61
Sulfate	mg/l	500	S	ND	ND	77	78	56	58	73	74	110	110	140	140
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Nitrate, Nitrite-N, CALC	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	1.5	1.4	2.6	2.6
Total Organic Carbon	mg/l			17	17	0.43	0.38	0.57	0.47	0.47	0.35	ND	ND	0.37	0.43
Carbon Dioxide	mg/l			6.1	5	2.1	ND	2.4	ND	3.1	2	3.5	2.2	7.5	4.9
General Physical Properties															
Apparent Color	ACU	15	S	140	350	ND	5	ND	5	ND	ND	ND	ND	ND	5
Lab pH	Units			8.3	8.4	8.2	8.3	8.1	8.2	8.1	8.2	8	8.2	7.8	8
Odor	TON	3	S	8	2	2	ND	2	ND	1	ND	2	ND	2	1
pH of CaCO3 saturation(25C)	Units			7.5	7.5	7.4	7.4	7.5	7.5	7.3	7.4	7.2	7.3	6.9	6.9
pH of CaCO3 saturation(60C)	Units			7	7	7	7	7	7.1	6.9	6.9	6.8	6.8	6.4	6.4
Specific Conductance	µmho/cm	1600	S	1600	1600	550	550	520	510	570	570	730	710	1100	1100
Metals															
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	1.8	ND	ND	ND	ND	ND	1.4	1.3	3.8	3.6	2.2	1.7
Barium, Total, ICAP/MS	ug/l	1000	P	13	13	36	34	35	33	62	59	230	230	120	120
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	4.8	1.1	ND	ND	1.1	ND	ND	ND	1.9	ND	6.7	4.3
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1300	P	4.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	6	ND	ND	ND	ND	ND	ND	ND	8.8	11	5.6	5.4
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds															
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	0.62	0.78	6.1	8
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l	1000	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	2.1	1.7	3.4	4

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2009/2010

Constituents	Units	MCL	MCL Type	Bell Gardens #1					
				Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6
				5/3/2010	5/3/2010	5/3/2010	5/3/2010	5/3/2010	5/3/2010
General Mineral Characteristics									
Total Dissolved Solids (TDS)	mg/l	1000	S	480	270	460	360	350	370
Cation Sum	meq/l			7.3	4.9	7.2	5.6	5.7	6.1
Anion Sum	meq/l			7.3	4.9	7.2	5.6	5.7	6
Iron	mg/l	0.3	S	0.04	0.026	ND	ND	ND	ND
Manganese	ug/l	50	S	42	53	ND	ND	ND	ND
Turbidity	NTU	5	S	0.16	0.12	0.076	0.12	0.055	0.58
Alkalinity	mg/l			170	160	150	130	150	160
Boron	mg/l	1	N	0.064	0.14	0.18	0.17	0.18	0.17
Bicarbonate	mg/l			210	200	180	160	180	190
Calcium	mg/l			97	40	76	53	55	61
Carbonate as CO3	mg/l			ND	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			300	130	240	170	180	200
Chloride	mg/l	500	S	50	31	63	43	40	39
Fluoride	mg/l	2	P	0.17	0.26	0.29	0.37	0.21	0.32
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.83	0.52	0.6	0.37	0.3	0.48
Magnesium, Total, ICAP	None			14	7.7	13	9.7	11	12
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	2.4	1.7	2	1.7
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND
Potassium	mg/l			2.1	2.4	3.3	3.1	2.9	3.2
Sodium	mg/l			30	51	52	48	45	45
Sulfate	mg/l	500	S	120	38	110	81	70	79
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND
Total Nitrate, Nitrite-N, CALC	mg/l	10	P	ND	ND	2.4	1.7	2	1.7
Total Organic Carbon	mg/l			ND	0.38	0.41	0.32	ND	ND
Carbon Dioxide	mg/l			3.6	2.8	3.8	3.2	5.2	4.3
General Physical Properties									
Apparent Color	ACU	15	S	3	3	ND	ND	ND	ND
Lab pH	Units			8	8.1	7.9	7.9	7.8	7.9
Odor	TON	3	S	2	2	1	1	1	1
pH of CaCO3 saturation(25C)	Units			7.1	7.5	7.3	7.5	7.4	7.4
pH of CaCO3 saturation(60C)	Units			6.7	7.1	6.9	7.1	7	6.9
Specific Conductance	umho/cm	1600	S	700	480	720	570	570	600
Metals									
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	ND	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	2.2	ND	2.9	2.5	1.3	2
Barium, Total, ICAP/MS	ug/l	1000	P	95	59	120	46	53	50
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	ND	ND	1.6	1.5	1.4	1.3
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1300	P	ND	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15	P	ND	0.66	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds									
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	2.4	0.76
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	0.56	1.8
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	0.54
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l			ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770	N	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260	N	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l	1000	N	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	0.51	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2009/2010

Constituents	Units	MCL	MCL Type	Cerritos #1											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				4/5/2010	9/8/2010	4/5/2010	9/8/2010	4/5/2010	9/8/2010	4/5/2010	9/8/2010	4/5/2010	9/8/2010	4/5/2010	9/8/2010
General Mineral Characteristics															
Total Dissolved Solids (TDS)	mg/l	1000	S	270	260	250	250	300	290	280	290	260	260	260	260
Cation Sum	meq/l			4.8	5	4.5	4.6	5.2	5.4	5	5.1	4.7	4.9	4.7	4.9
Anion Sum	meq/l			4.6	4.8	4.4	4.5	5.1	5.2	4.9	4.9	4.5	4.5	4.8	4.7
Iron	mg/l	0.3	S	ND	ND	ND	ND	0.025	0.027	0.083	0.082	0.059	0.063	0.073	0.074
Manganese	ug/l	50	S	26	27	30	31	45	44	77	79	110	110	140	140
Turbidity	NTU	5	S	0.27	0.14	0.082	0.1	0.074	0.092	0.28	0.2	0.13	0.19	0.052	0.66
Alkalinity	mg/l			190	170	160	160	170	170	180	180	180	180	160	190
Boron	mg/l	1	N	0.095	0.1	0.08	0.076	0.11	0.1	0.1	0.096	0.1	0.1	0.089	0.09
Bicarbonate	mg/l			230	200	190	190	210	210	220	220	220	220	200	240
Calcium	mg/l			36	37	34	34	42	44	47	48	40	42	47	48
Carbonate as CO3	mg/l			2.1	3	2.4	2.5	3.2	2.3	ND	2	ND	2.2	3	2.2
Hardness (Total, as CaCO3)	mg/l			110	110	110	110	130	140	160	170	140	150	160	160
Chloride	mg/l	500	S	9.9	15	13	13	19	19	13	13	10	9.9	15	9.6
Fluoride	mg/l	2	P	0.27	0.23	0.4	0.34	0.42	0.37	0.57	0.5	0.51	0.44	0.34	0.29
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.62	0.78	0.65	0.68	0.88	0.75	0.6	0.73	0.64	0.7	0.9	0.77
Magnesium, Total, ICAP	None			4.8	5.1	5.4	5.5	6.2	6.4	11	11	9.8	10	9.4	9.7
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			2.2	2.3	2.2	2.2	2	2.1	2	2	1.9	2.1	2.1	2.1
Sodium	mg/l			60	62	53	55	59	61	38	39	42	44	35	36
Sulfate	mg/l	500	S	24	50	41	44	57	58	42	41	28	29	50	25
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Nitrate, Nitrite-N, CALC	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			0.48	ND	ND	ND	ND	ND	ND	ND	ND	0.3	ND	0.33
Carbon Dioxide	mg/l			2.8	ND	ND	ND	ND	2	3.4	2.6	2.6	2.4	ND	2.7
General Physical Properties															
Apparent Color	ACU	15	S	3	ND	ND	ND	ND	ND	ND	ND	3	3	ND	5
Lab pH	Units			8.1	8.4	8.3	8.3	8.4	8.2	8	8.2	8.1	8.2	8.4	8.2
Odor	TON	3	S	2	ND	3	ND	2	ND	2	1	2	ND	2	ND
pH of CaCO3 saturation(25C)	Units			7.5	7.6	7.6	7.6	7.5	7.5	7.4	7.4	7.5	7.5	7.5	7.4
pH of CaCO3 saturation(60C)	Units			7.1	7.1	7.2	7.2	7.1	7	7	7	7.1	7	7	6.9
Specific Conductance	umho/cm	1600	S	450	460	430	430	500	500	470	460	440	430	470	430
Metals															
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	14	15	11	11	19	20	5.1	5.4	8.8	8.5	34	35
Barium, Total, ICAP/MS	ug/l	1000	P	48	51	100	110	130	130	62	64	82	81	100	100
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds															
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l	1000	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	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

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2009/2010

Constituents	Units	MCL	MCL Type	Cerritos #2											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				4/6/2010	9/8/2010	4/6/2010	9/8/2010	4/6/2010	9/8/2010	4/6/2010	9/8/2010	4/6/2010	9/8/2010	4/6/2010	9/8/2010
General Mineral Characteristics															
Total Dissolved Solids (TDS)	mg/l	1000	S	200	200	480	510	210	200	220	230	230	210	960	**1100**
Cation Sum	meq/l			3.8	3.8	8.3	8.4	3.8	3.9	4.3	4.4	4.3	4.5	18	18
Anion Sum	meq/l			3.7	3.7	8.1	8.3	3.7	3.8	4.2	4.2	4.1	4.2	17	18
Iron	mg/l	0.3	S	ND	ND	ND	ND	ND	ND	0.031	0.031	0.089	0.089	0.28	0.29
Manganese	ug/l	50	S	12	11	ND	ND	40	40	85	86	100	110	790	840
Turbidity	NTU	5	S	0.1	0.1	0.086	0.053	1.1	1.1	0.097	0.13	0.21	0.25	1.6	1.8
Alkalinity	mg/l			150	150	180	180	160	160	180	180	180	180	350	350
Boron	mg/l	1	N	0.063	0.061	0.15	0.15	0.073	0.072	0.085	0.082	0.084	0.082	0.12	0.11
Bicarbonate	mg/l			190	190	210	210	200	200	220	220	220	220	430	430
Calcium	mg/l			44	43	96	96	45	46	53	53	54	55	230	240
Carbonate as CO3	mg/l			ND	ND	ND	ND	2	2.5	2.1	2.4	2.2	2.5	ND	ND
Hardness (Total, as CaCO3)	mg/l			130	130	310	320	140	140	170	170	160	170	760	780
Chloride	mg/l	500	S	5.7	5.9	72	74	5.2	5.4	5.9	5.9	5.7	5.7	180	190
Fluoride	mg/l	2	P	0.29	0.25	0.38	0.33	0.35	0.27	0.44	0.38	0.36	0.31	0.31	0.3
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.63	0.67	0.83	0.91	0.7	0.81	0.79	0.86	0.81	0.88	1.4	1.4
Magnesium, Total, ICAP	None			5.6	5.7	18	18	6	6.2	8.5	8.7	7.5	7.8	45	46
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	3.2	3.3	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			2.7	2.8	4.2	4.2	2.4	2.5	2.6	2.6	2.8	2.9	4.5	4.5
Sodium	mg/l			24	25	45	46	23	23	21	21	22	23	57	57
Sulfate	mg/l	500	S	19	20	110	110	16	17	17	17	16	16	220	250
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.051
Total Nitrate, Nitrite-N, CALC	mg/l	10	P	ND	ND	3.2	3.3	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			ND	ND	0.33	0.72	ND	ND	ND	ND	ND	ND	1.4	1.4
Carbon Dioxide	mg/l			2.1	ND	3.8	3.2	2	ND	2.5	2.1	2.4	2.1	10	10
General Physical Properties															
Apparent Color	ACU	15	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5	5
Lab pH	Units			8.2	8.2	8	8	8.2	8.3	8.2	8.2	8.2	8.2	7.9	7.9
Odor	TON	3	S	2	ND	2	ND	2	1	2	1	2	1	2	1
pH of CaCO3 saturation(25C)	Units			7.5	7.5	7.1	7.1	7.5	7.5	7.4	7.4	7.4	7.4	6.5	6.4
pH of CaCO3 saturation(60C)	Units			7.1	7.1	6.7	6.7	7.1	7	6.9	6.9	6.9	6.9	6	6
Specific Conductance	umho/cm	1600	S	360	340	820	800	360	350	400	390	400	390	1600	1600
Metals															
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	2.3	2.3	2.2	2.1		3	7.3	8	16	17	7.5	8.3
Barium, Total, ICAP/MS	ug/l	1000	P	110	110	160	160	120	120	160	170	170	180	120	110
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	ND	ND	2	1.3	ND	ND	ND	ND	ND	ND	1.8	1.1
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds															
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l	1000	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	0.96	1	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

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2009/2010

Constituents	Units	MCL	MCL Type	Commerce #1										
				Zone 1	Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				8/12/2010	5/4/2010	9/20/2010	5/4/2010	9/20/2010	5/4/2010	9/20/2010	5/4/2010	9/20/2010	5/4/2010	9/20/2010
General Mineral Characteristics														
Total Dissolved Solids (TDS)	mg/l	1000	S	**13000**	640	890	600	530	520	510	470	480	390	400
Cation Sum	meq/l			220	11	16	10	9.5	8.6	8.6	7.9	8.2	6.5	6.8
Anion Sum	meq/l			250	11	16	10	9.5	8.9	8.6	8	8.3	6.7	6.8
Iron	mg/l	0.3	S	1.2	0.036	0.043	0.051	0.04	0.038	0.04	ND	ND	ND	ND
Manganese	ug/l	50	S	160	ND	12	48	47	63	62	ND	ND	ND	ND
Turbidity	NTU	5	S	63	0.41	3.9	0.2	0.22	0.089	0.22	0.29	0.46	0.98	1.8
Alkalinity	mg/l			470	320	320	240	230	200	200	190	190	170	170
Boron	mg/l	1	N	6.7	0.53	0.67	0.28	0.26	0.24	0.26	0.17	0.17	0.14	0.13
Bicarbonate	mg/l			570	390	390	290	280	250	250	230	230	210	210
Calcium	mg/l			180	49	53	61	60	49	49	78	79	59	61
Carbonate as CO3	mg/l			ND	2.8	2.7	2	2.2	ND	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			1100	220	240	240	240	200	200	280	290	220	230
Chloride	mg/l	500	S	8700	170	340	180	140	92	88	74	81	64	65
Fluoride	mg/l	2	P	0.14	0.37	0.34	0.34	0.32	0.43	0.41	0.34	0.3	0.45	0.44
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			1.1	0.87	0.9	0.83	0.87	0.64	0.68	0.69	0.71	0.52	0.55
Magnesium, Total, ICAP	None			150	23	26	21	21	19	20	21	22	18	19
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	4.2	4.2	6.6	6.7
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			49	5.6	6.4	3.6	3.5	3.3	3.3	2.2	2.4	1.7	1.8
Sodium	mg/l			4600	150	240	120	110	100	100	51	56	46	47
Sulfate	mg/l	500	S	0.55	9.2	9.3	32	41	100	99	90	91	48	49
Surfactants	mg/l	0.5	S	0.12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Nitrate, Nitrite-N, CALC	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	4.2	4.2	6.6	6.7
Total Organic Carbon	mg/l			16	4	4.9	1.3	1.2	0.69	0.79	ND	0.31	ND	
Carbon Dioxide	mg/l			26	5.8	5.9	4.3	3.7	4.1	3.7	4.8	4.7	4.6	4.4
General Physical Properties														
Apparent Color	ACU	15	S	50	35	20	5	3	3	3	ND	ND	ND	ND
Lab pH	Units			7.6	8	8	8	8.1	8	8	7.9	7.9	7.9	7.9
Odor	TON	3	S	3	40	40	1	1	2	2	1	1	1	ND
pH of CaCO3 saturation(25C)	Units			6.4	7.2	7.1	7.2	7.2	7.4	7.4	7.2	7.2	7.4	7.3
pH of CaCO3 saturation(60C)	Units			6	6.7	6.7	6.8	6.8	6.9	6.9	6.8	6.7	6.9	6.9
Specific Conductance	umho/cm	1600	S	23000	1100	1700	1000	980	840	870	770	820	670	700
Metals														
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	32	ND	ND	1.1	ND	ND	ND	ND	ND	ND	ND
Barium, Total, ICAP/MS	ug/l	1000	P	660	64	85	110	91	240	240	85	86	56	59
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	25	ND	3.1	3.4	1.2	2.1	ND	6.3	5.3	11	11
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	77	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds														
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	2.3	1.7	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	0.66	0.75	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l	1000	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	2.2	3	2.7	2.1

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2009/2010

Constituents	Units	MCL	MCL Type	Compton #1							
				Zone 1		Zone 2		Zone 3		Zone 4	
				4/20/2010	9/14/2010	4/20/2010	9/14/2010	4/20/2010	9/14/2010	4/20/2010	9/14/2010
General Mineral Characteristics											
Total Dissolved Solids (TDS)	mg/l	1000	S	230	240	300	280	310	300	330	320
Cation Sum	meq/l			3.9	3.8	4.6	4.7	5.1	5.1	5.4	5.5
Anion Sum	meq/l			4	4	4.8	4.8	5.1	5.2	5.5	5.5
Iron	mg/l	0.3	S	ND	ND	ND	ND	0.025	0.027	0.071	0.071
Manganese	ug/l	50	S	15	13	18	18	60	59	85	79
Turbidity	NTU	5	S	0.21	0.42	0.15	0.29	0.6	0.52	0.71	0.6
Alkalinity	mg/l			180	180	150	150	160	160	170	170
Boron	mg/l	1	N	0.15	0.15	0.11	0.11	0.12	0.11	0.097	0.1
Bicarbonate	mg/l			220	210	180	180	200	200	210	210
Calcium	mg/l			20	20	39	40	49	49	59	60
Carbonate as CO3	mg/l			3.1	3.3	2	2.2	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			57	56	110	110	160	160	170	180
Chloride	mg/l	500	S	14	14	22	23	23	25	21	21
Fluoride	mg/l	2	P	0.31	0.28	0.34	0.33	0.27	0.25	0.26	0.25
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.53	0.56	0.64	0.69	0.67	0.71	0.72	0.77
Magnesium, Total, ICAP	None			1.8	1.7	3.3	3.4	9.1	8.9	6	6.2
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			1.5	1.5	1.6	1.6	2.7	2.6	2.4	2.5
Sodium	mg/l			62	61	55	55	43	42	44	44
Sulfate	mg/l	500	S	1.3	1.5	59	60	58	60	72	74
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND
Total Nitrate, Nitrite-N, CALC	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			3.2	3.3	0.71	0.72	0.46	0.62	ND	ND
Carbon Dioxide	mg/l			ND	ND	ND	ND	2.4	2.2	2.8	2.6
General Physical Properties											
Apparent Color	ACU	15	S	20	35	5	10	3	5	ND	3
Lab pH	Units			8.3	8.4	8.3	8.3	8.1	8.2	8.1	8.1
Odor	TON	3	S	4	3	2	2	2	3	3	3
pH of CaCO3 saturation(25C)	Units			7.8	7.8	7.6	7.6	7.5	7.5	7.4	7.4
pH of CaCO3 saturation(60C)	Units			7.4	7.4	7.2	7.2	7	7	6.9	6.9
Specific Conductance	umho/cm	1600	S	370	380	470	480	500	510	540	540
Metals											
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	ND	ND	ND	ND	ND	ND	21	21
Barium, Total, ICAP/MS	ug/l	1000	P	11	9.2	13	12	60	59	160	160
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds											
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770	N	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260	N	ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l	1000	N	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND		ND		ND		ND	

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2009/2010

Constituents	Units	MCL	MCL Type	Compton #2											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				4/22/2010	9/15/2010	4/22/2010	9/15/2010	4/22/2010	9/15/2010	4/22/2010	9/15/2010	4/22/2010	9/15/2010	4/22/2010	9/15/2010
General Mineral Characteristics															
Total Dissolved Solids (TDS)	mg/l	1000	S	570	570	330	320	310	300	360	370	360	390	440	450
Cation Sum	meq/l			9.3	10	6.1	6	5.1	5.1	6.2	6.1	6.6	6.3	7.6	7.5
Anion Sum	meq/l			10	9.9	6.1	6.1	5.1	5	6	6.1	6.4	6.5	7.4	7.4
Iron	mg/l	0.3	S	0.044	0.048	0.026	0.033	ND	ND	0.029	0.027	ND	0.026	ND	ND
Manganese	ug/l	50	S	ND	12	32	32	34	35	43	43	100	110	25	47
Turbidity	NTU	5	S	1.2	1.9	2.4	1.7	0.56	0.29	0.15	0.19	2	1.9	14	2.8
Alkalinity	mg/l			480	470	280	290	160	160	180	190	190	190	180	180
Boron	mg/l	1	N	0.64	0.67	0.18	0.18	0.11	0.11	0.12	0.11	0.13	0.12	0.16	0.16
Bicarbonate	mg/l			580	570	350	350	200	190	220	230	230	230	220	210
Calcium	mg/l			11	12	27	27	45	45	65	65	64	63	79	76
Carbonate as CO3	mg/l			7.5	8.2	3.3	3.7	ND	2	ND	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			35	39	88	89	140	140	210	210	220	210	270	260
Chloride	mg/l	500	S	14	14	13	13	20	20	27	28	33	35	68	69
Fluoride	mg/l	2	P	0.37	0.41	0.24	0.26	0.19	0.2	0.21	0.22	0.27	0.29	0.35	0.37
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.66	0.73	0.69	0.74	0.68	0.7	0.79	0.79	0.83	0.81	0.68	0.68
Magnesium, Total, ICAP	None			2	2.2	5.2	5.2	6.7	6.9	12	11	14	14	18	18
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.22	ND
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			2.6	2.9	4.1	4	2.6	2.6	2.6	2.5	4	3.8	3.9	4.1
Sodium	mg/l			200	220	96	96	52	50	45	43	49	45	50	50
Sulfate	mg/l	500	S	ND	ND	ND	ND	60	61	75	76	78	80	93	93
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Nitrate, Nitrite-N, CALC	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.22	ND
Total Organic Carbon	mg/l			14	14	3.2	3.2	0.6	0.7	0.38	0.33	0.42	0.45	0.47	0.56
Carbon Dioxide	mg/l			4.8	4.3	3.8	3.5	2.1	2	3.1	3.2	3	3	4.6	4.3
General Physical Properties															
Apparent Color	ACU	15	S	140	150	25	30	5	10	3	3	3	5	3	3
Lab pH	Units			8.3	8.3	8.2	8.2	8.2	8.2	8.1	8.1	8.1	8.1	7.9	7.9
Odor	TON	3	S	3	2	2	1	1	2	1	1	1	1	3	1
pH of CaCO3 saturation(25C)	Units			7.6	7.6	7.5	7.5	7.5	7.5	7.3	7.3	7.3	7.3	7.2	7.2
pH of CaCO3 saturation(60C)	Units			7.2	7.2	7	7	7.1	7.1	6.8	6.8	6.8	6.8	6.8	6.8
Specific Conductance	µmho/cm	1600	S	920	900	570	570	500	500	590	580	630	620	740	730
Metals															
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.1
Arsenic, Total, ICAP/MS	ug/l	10	P	ND	1.1	ND	ND	ND	ND	ND	ND	2.1	2.1	3.9	5.6
Barium, Total, ICAP/MS	ug/l	1000	P	13	13	17	16	25	24	33	32	83	84	68	51
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1300	P	ND	ND	ND	ND	2	ND	ND	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds															
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l	1000	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	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

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2009/2010

Constituents	Units	MCL	MCL Type	Downey #1											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				4/21/2010	9/16/2010	4/21/2010	9/16/2010	4/21/2010	9/16/2010	4/21/2010	9/16/2010	4/21/2010	9/16/2010	4/21/2010	9/16/2010
General Mineral Characteristics															
Total Dissolved Solids (TDS)	mg/l	1000	S	220	220	400	390	490	510	550	580	430	420	920	950
Cation Sum	meq/l			3.7	3.9	6.3	6.5	8.1	8.3	8.9	9.4	7.2	7.1	15	16
Anion Sum	meq/l			3.7	3.6	6.3	6.5	8	8.2	9	9.2	7.2	6.8	15	16
Iron	mg/l	0.3	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Manganese	ug/l	50	S	ND	ND	ND	ND	ND	ND	2.6	2.8	120	110	76	79
Turbidity	NTU	5	S	0.053	0.1	0.2	0.49	0.11	0.4	0.054	0.2	3.7	6.9	0.33	1
Alkalinity	mg/l			160	160	160	160	170	170	190	190	210	210	370	370
Boron	mg/l	1	N	0.05	0.061	0.056	0.066	0.084	0.094	0.2	0.2	0.081	0.091	0.22	0.22
Bicarbonate	mg/l			190	190	190	190	210	210	240	240	260	250	450	450
Calcium	mg/l			41	42	81	83	100	100	96	99	91	89	180	180
Carbonate as CO3	mg/l			ND	2.6	ND	ND	ND	2.6	ND	ND	ND	3.3	ND	4
Hardness (Total, as CaCO3)	mg/l			130	130	250	260	330	340	320	330	300	290	580	590
Chloride	mg/l	500	S	5.3	5.2	38	39	68	69	77	79	39	35	93	95
Fluoride	mg/l	2	P	0.28	0.3	0.25	0.27	0.29	0.32	0.35	0.37	0.36	0.42	0.27	0.3
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.43	0.78	0.72	0.95	0.79	1.2	0.65	0.9	0.8	1.2	1.1	1.6
Magnesium, Total, ICAP	None			5.6	6	13	13	18	19	19	20	17	17	35	36
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	2	2.1	3.2	3.3	1.8	1.8	ND	ND	ND	ND
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			2.7	2.9	3.5	3.7	3.4	3.5	4.2	4.5	3.6	3.7	5.6	5.8
Sodium	mg/l			25	27	26	28	31	33	57	61	26	27	81	83
Sulfate	mg/l	500	S	17	17	93	97	110	120	140	140	88	79	250	270
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Nitrate, Nitrite-N, CALC	mg/l	10	P	ND	ND	2	2.1	3.2	3.3	1.8	1.8	ND	ND	ND	ND
Total Organic Carbon	mg/l			ND	ND	ND	ND	ND	0.3	0.4	0.72	ND	0.36	0.58	0.74
Carbon Dioxide	mg/l			3.3	ND	3.4	2.1	4.4	ND	7.1	4.1	5.7	2	17	5.3
General Physical Properties															
Apparent Color	ACU	15	S	ND	ND	ND	ND	ND	ND	ND	ND	3	3	ND	ND
Lab pH	Units			8	8.3	8	8.2	7.9	8.3	7.7	8	7.9	8.3	7.6	8.1
Odor	TON	3	S	1	2	1	1	1	ND	2	1	1	1	1	ND
pH of CaCO3 saturation(25C)	Units			7.6	7.5	7.2	7.2	7.1	7.1	7.1	7.1	7.1	7.1	6.5	6.5
pH of CaCO3 saturation(60C)	Units			7.1	7.1	6.8	6.8	6.7	6.7	6.6	6.6	6.6	6.7	6.1	6.1
Specific Conductance	µmho/cm	1600	S	360	350	630	640	800	800	890	900	700	660	1400	1400
Metals															
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	2.8	2.9	2.2	2.3	2.8	3	1.9	2	3.9	3.8	2.2	2.5
Barium, Total, ICAP/MS	ug/l	1000	P	98	94	180	170	150	130	91	88	240	220	73	69
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	3.3	3.5	2.1	2.2	1.6	1.6	ND	ND	ND	ND	ND	ND
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds															
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	0.7	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	0.66	0.57	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l	1000	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	3.8	3.5	2.9	3.1	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

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2009/2010

Constituents	Units	MCL	MCL Type	Huntington Park #1			
				Zone 1	Zone 2	Zone 3	Zone 4
				5/12/2010	5/12/2010	5/12/2010	5/12/2010
General Mineral Characteristics							
Total Dissolved Solids (TDS)	mg/l	1000	S	380	480	660	760
Cation Sum	meq/l			6.2	7.8	11	13
Anion Sum	meq/l			6.1	7.6	11	12
Iron	mg/l	0.3	S	0.26	ND	ND	ND
Manganese	ug/l	50	S	49	ND	ND	ND
Turbidity	NTU	5	S	0.36	0.3	0.25	0.22
Alkalinity	mg/l			180	190	240	320
Boron	mg/l	1	N	0.14	0.28	0.17	0.18
Bicarbonate	mg/l			220	230	300	390
Calcium	mg/l			63	78	120	140
Carbonate as CO3	mg/l			ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			220	280	410	500
Chloride	mg/l	500	S	22	46	80	73
Fluoride	mg/l	2	P	0.44	0.29	0.32	0.33
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND
Langelier Index - 25 degree	None			0.6	0.33	1	1.1
Magnesium, Total, ICAP	None			15	20	30	36
Mercury	ug/l	2	P	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	0.73	2.8	4.4
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND
Potassium	mg/l			3.1	3.6	4.3	4.7
Sodium	mg/l			40	51	58	62
Sulfate	mg/l	500	S	88	120	150	170
Surfactants	mg/l	0.5	S	ND	ND	0.8	ND
Total Nitrate, Nitrite-N, CALC	mg/l	10	P	ND	0.73	2.8	4.4
Total Organic Carbon	mg/l			ND	0.57	3.6	0.5
Carbon Dioxide	mg/l			4.6	12	6.2	9.5
General Physical Properties							
Apparent Color	ACU	15	S	5	ND	3	ND
Lab pH	Units			7.9	7.5	7.9	7.8
Odor	TON	3	S	1	1	3	3
pH of CaCO3 saturation(25C)	Units			7.3	7.2	6.9	6.7
pH of CaCO3 saturation(60C)	Units			6.9	6.7	6.5	6.2
Specific Conductance	umho/cm	1600	S	600	750	1000	1200
Metals							
Aluminum, Total, ICAP/MS	ug/l	1000	P	37	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	1	1.2	ND	1.2
Barium, Total, ICAP/MS	ug/l	1000	P	64	53	130	100
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	2.6	4	4.8	6.8
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1300	P	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15	P	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	6.5
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND
Volatile Organic Compounds							
Trichloroethylene (TCE)	ug/l	5	P	ND	3.6	6.5	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	0.56	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l			ND	2.8	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	2.5	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND
Isopropylbenzene	ug/l	770	N	ND	ND	ND	ND
n-Propylbenzene	ug/l	260	N	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l	1000	N	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	5	2

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2009/2010

Constituents	Units	MCL	MCL Type	Inglewood #2					
				Zone 1		Zone 2		Zone 3	
				5/18/2010	9/22/2010	5/18/2010	9/22/2010	5/18/2010	9/22/2010
General Mineral Characteristics									
Total Dissolved Solids (TDS)	mg/l	1000	S	**1600**	**1700**	**1500**	**1500**	310	330
Cation Sum	meq/l			28	29	26	27	5.8	5.5
Anion Sum	meq/l			30	29	27	27	5.6	5.5
Iron	mg/l	0.3	S	0.73	0.58	0.41	0.42	0.11	0.051
Manganese	ug/l	50	S	24	23	23	35	34	33
Turbidity	NTU	5	S	0.68	3.9	14	15	0.4	0.28
Alkalinity	mg/l			1400	1400	1300	1300	250	250
Boron	mg/l	1	N	3.8	3.8	3.3	3.5	0.22	0.21
Bicarbonate	mg/l			1700	1700	1600	1600	310	300
Calcium	mg/l			17	18	11	12	35	33
Carbonate as CO3	mg/l			12	13	13	14	2.9	2.9
Hardness (Total, as CaCO3)	mg/l			110	120	66	68	140	130
Chloride	mg/l	500	S	33	35	19	21	20	20
Fluoride	mg/l	2	P	0.54	0.5	0.29	0.25	0.22	0.19
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			1.1	1.1	0.9	0.96	0.75	0.72
Magnesium, Total, ICAP	None			17	17	9.3	9.5	13	12
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	ND	ND	ND	ND
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND
Potassium	mg/l			25	25	19	19	6.7	6.7
Sodium	mg/l			560	590	530	570	64	62
Sulfate	mg/l	500	S	ND	ND	ND	ND	ND	ND
Surfactants	mg/l	0.5	S	0.052	ND	ND	ND	ND	ND
Total Nitrate, Nitrite-N, CALC	mg/l	10	P	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			38	38	22	24	1.3	1.5
Carbon Dioxide	mg/l			26	23	22	19	3.5	3.3
General Physical Properties									
Apparent Color	ACU	15	S	200	200	150	200	10	15
Lab pH	Units			8	8.1	8.1	8.1	8.2	8.2
Odor	TON	3	S	67	40	67	40	2	3
pH of CaCO3 saturation(25C)	Units			7	7	7.2	7.2	7.4	7.5
pH of CaCO3 saturation(60C)	Units			6.5	6.5	6.7	6.7	7	7
Specific Conductance	umho/cm	1600	S	2600	2600	2400	2300	540	540
Metals									
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	240	ND	1000	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	ND	1.4	ND	1.2	ND	ND
Barium, Total, ICAP/MS	ug/l	1000	P	44	44	26	29	16	18
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	ND	1.9	ND	2.8	ND	ND
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1300	P	ND	ND	ND	2.1	ND	ND
Lead, Total, ICAP/MS	ug/l	15	P	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds									
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l			ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770	N	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260	N	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l	1000	N	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND		ND		ND	

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2009/2010

Constituents	Units	MCL	MCL Type	Lakewood #1											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				4/13/2010	9/16/2010	4/13/2010	9/16/2010	4/13/2010	9/16/2010	4/13/2010	9/16/2010	4/13/2010	9/16/2010	4/13/2010	9/16/2010
General Mineral Characteristics															
Total Dissolved Solids (TDS)	mg/l	1000	S	160	190	170	200	200	220	240	280	220	250	400	420
Cation Sum	meq/l			2.8	2.9	3.4	3.3	3.8	3.6	4.7	4.7	4.2	4.1	7.1	6.9
Anion Sum	meq/l			2.8	2.8	3.2	3.3	3.7	3.7	4.6	4.7	4.1	4.2	7	7.1
Iron	mg/l	0.3	S	ND	ND	ND	ND	ND	ND	0.061	0.05	0.099	0.095	0.096	0.085
Manganese	ug/l	50	S	5.7	4.9	17	17	25	23	90	84	55	54	250	240
Turbidity	NTU	5	S	0.55	0.54	0.43	0.12	0.61	0.4	0.21	0.21	0.35	0.24	0.6	0.34
Alkalinity	mg/l			96	98	130	140	150	160	170	170	180	180	200	200
Boron	mg/l	1	N	0.058	0.06	ND	ND	0.068	0.062	0.072	0.073	0.087	0.084	0.083	0.08
Bicarbonate	mg/l			120	120	160	170	190	190	200	200	210	220	240	250
Calcium	mg/l			10	10	31	31	41	39	51	51	48	47	92	89
Carbonate as CO3	mg/l			2.9	3	ND	2	ND	2.5	ND	2.1	ND	2.1	ND	ND
Hardness (Total, as CaCO3)	mg/l			27	27	93	92	120	120	150	150	160	150	270	260
Chloride	mg/l	500	S	20	20	6.3	6.5	9.3	9	34	38	11	11	76	79
Fluoride	mg/l	2	P	0.45	0.44	0.27	0.25	0.3	0.28	0.29	0.28	0.48	0.47	0.21	0.19
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.22	0.24	0.49	0.54	0.65	0.72	0.72	0.77	0.65	0.74	0.8	0.93
Magnesium, Total, ICAP	None			0.35	0.37	3.7	3.6	5	4.8	6.3	6.1	8.7	8.5	9.2	9
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			ND	ND	2	2	2.3	2.2	2.6	2.8	2.6	2.5	3.5	3.6
Sodium	mg/l			53	53	33	32	31	29	35	36	25	24	38	36
Sulfate	mg/l	500	S	15	15	17	16	16	15	14	14	13	13	40	40
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	0.06	ND	ND	0.089	0.071
Total Nitrate, Nitrite-N, CALC	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			0.74	0.9	ND	ND	ND	0.33	0.4	0.58	ND	ND	0.58	0.82
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	2.3	2.1	2.9	2.4	5	3.8
General Physical Properties															
Apparent Color	ACU	15	S	15	15	3	5	3	5	5	5	3	5	3	3
Lab pH	Units			8.6	8.6	8.2	8.3	8.2	8.3	8.2	8.2	8.1	8.2	7.9	8
Odor	TON	3	S	1	1	2	2	1	ND	1	ND	1	1	1	ND
pH of CaCO3 saturation(25C)	Units			8.4	8.4	7.7	7.7	7.6	7.6	7.4	7.4	7.4	7.4	7.1	7.1
pH of CaCO3 saturation(60C)	Units			7.9	7.9	7.3	7.3	7.1	7.1	7	7	7	7	6.7	6.7
Specific Conductance	µmho/cm	1600	S	280	290	310	310	350	360	440	470	390	400	690	720
Metals															
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	11	12	2	2.5	1.1	1	9.7	9.1	3.5	3.5	23	23
Barium, Total, ICAP/MS	ug/l	1000	P	16	15	22	20	30	28	150	140	110	110	250	240
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.1	ND
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds															
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l	1000	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	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

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2009/2010

Constituents	Units	MCL	MCL Type	La Mirada #1									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				4/9/2010	9/10/2010	4/9/2010	9/10/2010	4/9/2010	9/10/2010	4/9/2010	9/10/2010	4/9/2010	9/10/2010
General Mineral Characteristics													
Total Dissolved Solids (TDS)	mg/l	1000	S	320	350	240	260	310	330	390	390	590	**1000**
Cation Sum	meq/l			5.5	6.1	4.2	4.5	5.2	5.6	6.5	6.9	9.7	15
Anion Sum	meq/l			5.6	5.7	4.2	4.3	5.3	5.4	6.6	6.7	10	15
Iron	mg/l	0.3	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Manganese	ug/l	50	S	10	10	2.7	3	16	17	48	44	23	24
Turbidity	NTU	5	S	0.35	0.071	0.059	0.059	0.13	0.18	0.37	0.37	0.15	0.088
Alkalinity	mg/l			150	150	140	140	180	190	190	200	190	190
Boron	mg/l	1	N	0.15	0.16	0.11	0.11	0.15	0.16	0.13	0.14	0.15	0.17
Bicarbonate	mg/l			190	190	160	170	220	220	230	240	230	230
Calcium	mg/l			15	15	9.7	10	21	22	45	46	75	130
Carbonate as CO3	mg/l			2.4	2.9	3	3.2	2.3	2.4	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			49	53	30	32	81	84	180	190	300	490
Chloride	mg/l	500	S	24	25	15	15	16	16	35	33	130	280
Fluoride	mg/l	2	P	0.82	0.82	0.59	0.55	0.76	0.75	0.57	0.53	0.46	0.31
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.29	0.4	0.21	0.26	0.43	0.46	0.62	0.63	0.75	0.8
Magnesium, Total, ICAP	None			3.2	3.5	1.4	1.5	7	7.2	17	17	27	44
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	7.8	19
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			2	2.1	1.5	1.7	2.3	2.4	2.6	2.7	3	4.1
Sodium	mg/l			100	110	81	88	81	88	66	72	85	120
Sulfate	mg/l	500	S	89	90	48	49	58	59	85	88	96	98
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Nitrate, Nitrite-N, CALC	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	7.8	19
Total Organic Carbon	mg/l			ND	ND	ND	ND	0.32	0.46	ND	ND	ND	0.45
Carbon Dioxide	mg/l			ND	ND	ND	ND	2.2	2.2	3.4	3.7	4.2	6
General Physical Properties													
Apparent Color	ACU	15	S	ND	3	ND	ND	3	5	ND	ND	ND	ND
Lab pH	Units			8.3	8.4	8.5	8.5	8.2	8.2	8.1	8	8	7.8
Odor	TON	3	S	2	ND	1	ND	1	ND	1	ND	1	ND
pH of CaCO3 saturation(25C)	Units			8	8	8.2	8.2	7.8	7.8	7.4	7.4	7.2	7
pH of CaCO3 saturation(60C)	Units			7.6	7.5	7.8	7.8	7.3	7.3	7	7	6.8	6.5
Specific Conductance	umho/cm	1600	S	580	570	430	420	530	530	660	640	1000	1500
Metals													
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	5.8	5.7	7.2	7.3	6.6	7	3.1	3.5	1.6	1.7
Barium, Total, ICAP/MS	ug/l	1000	P	54	50	25	24	36	35	42	39	69	110
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	1.8	2.9
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	5.8	10
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds													
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l	1000	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	3.4	6.5

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2009/2010

Constituents	Units	MCL	MCL Type	Long Beach #1											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				3/18/2010	9/2/2010	3/18/2010	9/2/2010	3/18/2010	9/2/2010	3/18/2010	9/2/2010	3/18/2010	9/2/2010	3/18/2010	9/2/2010
General Mineral Characteristics															
Total Dissolved Solids (TDS)	mg/l	1000	S	200	230	220	210	180	200	220	230	780	780	920	950
Cation Sum	meq/l			3.4	3.9	3.3	3.6	3	3.1	3.8	3.9	13	13	15	16
Anion Sum	meq/l			3.8	3.6	3.5	3.6	2.7	3.1	3.8	3.8	13	13	16	16
Iron	mg/l	0.3	S	ND	0.021	ND	ND	ND	ND	ND	ND	0.034	0.035	0.15	0.15
Manganese	ug/l	50	S	2.4	2.6	ND	ND	ND	ND	24	23	65	70	360	360
Turbidity	NTU	5	S	0.28	0.51	0.43	0.26	1.1	2.4	1.3	0.65	0.91	1.6	0.9	0.85
Alkalinity	mg/l			160	160	150	150	100	120	140	140	140	140	270	250
Boron	mg/l	1	N	0.19	0.21	0.18	0.18	0.094	0.095	0.067	0.069	0.14	0.12	0.1	0.11
Bicarbonate	mg/l			200	190	180	180	120	150	170	170	170	170	330	300
Calcium	mg/l			2.2	2.5	2.3	2.5	5.2	5.4	23	24	61	66	180	180
Carbonate as CO3	mg/l			12	12	11	10	5.4	6.4	2.4	2.6	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			6.2	7.2	6.2	6.8	14	15	65	68	190	200	570	590
Chloride	mg/l	500	S	15	15	15	15	12	12	12	12	190	190	180	180
Fluoride	mg/l	2	P	0.68	0.63	0.65	0.59	0.68	0.63	0.41	0.34	0.25	0.19	0.28	0.22
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.16	0.22	0.15	0.14	0.19	0.28	0.47	0.54	0.68	0.74	1.2	1.2
Magnesium, Total, ICAP	None			0.2	0.22	0.12	0.13	0.27	0.27	2.1	2.2	8.7	9.7	31	31
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			ND	ND	ND	ND	ND	ND	1.3	1.2	3	3.1	3.8	3.9
Sodium	mg/l			75	86	73	79	63	65	56	57	200	210	91	95
Sulfate	mg/l	500	S	ND	ND	ND	ND	14	14	33	33	230	230	280	280
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.056	0.058
Total Nitrate, Nitrite-N, CALC	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			3.4	3.6	3.2	3.4	1.7	1.8	0.47	0.67	1.2	1.4	1.2	1.4
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	2.2	2.1	6.9	6.1
General Physical Properties															
Apparent Color	ACU	15	S	70	100	50	100	25	40	10	10	5	5	3	5
Lab pH	Units			9	9	9	8.9	8.8	8.8	8.3	8.4	8.1	8.1	7.9	7.9
Odor	TON	3	S	3	2	3	2	2	2	2	1	2	1	2	ND
pH of CaCO3 saturation(25C)	Units			8.8	8.8	8.8	8.8	8.6	8.6	7.9	7.9	7.4	7.4	6.7	6.7
pH of CaCO3 saturation(60C)	Units			8.4	8.3	8.4	8.3	8.2	8.1	7.4	7.4	7	6.9	6.2	6.3
Specific Conductance	µmho/cm	1600	S	360	340	350	340	310	300	370	370	1300	1300	1500	1400
Metals															
Aluminum, Total, ICAP/MS	ug/l	1000	P	37	44	32	43	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	1.4	1.5	7.6	7.8
Barium, Total, ICAP/MS	ug/l	1000	P	2	ND	2.1	ND	ND	ND	8.6	8.5	47	53	230	230
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	1.3	1.2	ND	ND
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds															
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l	1000	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	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

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2009/2010

Constituents	Units	MCL	MCL Type	Long Beach #2											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				5/13/2010	9/27/2010	5/13/2010	9/27/2010	5/13/2010	9/27/2010	5/13/2010	9/27/2010	5/13/2010	9/27/2010	5/13/2010	9/27/2010
General Mineral Characteristics															
Total Dissolved Solids (TDS)	mg/l	1000	S	400	410	270	260	210	220	330	330	**1100**	**1100**	**1300**	**1300**
Cation Sum	meq/l			6.6	6.6	4.7	4.4	3.8	3.6	5.2	5.2	18	17	22	21
Anion Sum	meq/l			7	6.9	4.6	4.5	3.8	3.7	5.4	5.5	18	18	21	21
Iron	mg/l	0.3	S	0.13	0.16	0.023	0.023	ND	ND	ND	ND	0.23	0.23	0.23	0.23
Manganese	ug/l	50	S	15	15	19	16	7.1	7.1	29	29	190	180	360	350
Turbidity	NTU	5	S	0.69	0.56	0.31	0.42	0.14	0.19	0.94	0.59	0.3	1.6	1.7	1.7
Alkalinity	mg/l			320	310	200	200	150	150	150	150	330	320	320	310
Boron	mg/l	1	N	0.49	0.51	0.22	0.2	0.16	0.13	0.11	0.092	0.32	0.29	0.38	0.34
Bicarbonate	mg/l			380	380	240	240	180	180	180	180	400	390	390	380
Calcium	mg/l			6.7	6.8	15	15	13	12	44	43	200	180	240	230
Carbonate as CO3	mg/l			7	4.5	3.5	4.1	3.7	4.2	2.2	2.5	2.3	2.2	2	2
Hardness (Total, as CaCO3)	mg/l			23	23	46	44	36	33	130	130	630	560	770	730
Chloride	mg/l	500	S	21	22	21	21	23	24	42	44	120	120	180	180
Fluoride	mg/l	2	P	0.61	0.61	0.4	0.42	0.55	0.55	0.27	0.29	0.14	0.15	0.25	0.26
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.41	0.23	0.47	0.53	0.41	0.43	0.73	0.77	1.4	1.3	1.4	1.4
Magnesium, Total, ICAP	None			1.5	1.5	1.8	1.7	1.1	1.1	5	4.9	30	28	38	37
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			2.2	2.4	1.9	1.8	1.2	1.1	2.7	2.8	5.4	5.3	6.7	6.4
Sodium	mg/l			140	140	86	81	70	66	59	58	130	120	140	140
Sulfate	mg/l	500	S	ND	ND	ND	ND	4.2	3.5	57	59	360	370	450	470
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	0.069	0.053	0.059	0.06	0.096	0.1
Total Nitrate, Nitrite-N, CALC	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			13	12	3.7	3.8	2	2.1	1.1	1.3	1.2	1.3	1.4	1.5
Carbon Dioxide	mg/l			2.2	3.4	ND	ND	ND	ND	ND	ND	7.5	7.4	7.8	7.7
General Physical Properties															
Apparent Color	ACU	15	S	400	400	40	40	30	35	5	10	5	10	5	10
Lab pH	Units			8.5	8.3	8.4	8.4	8.5	8.6	8.3	8.3	7.9	7.9	7.9	7.9
Odor	TON	3	S	3	2	2	1	2	2	3	1	1	2	3	1
pH of CaCO3 saturation(25C)	Units			8	8	7.9	7.9	8.1	8.1	7.5	7.6	6.5	6.6	6.5	6.5
pH of CaCO3 saturation(60C)	Units			7.6	7.6	7.4	7.5	7.6	7.7	7.1	7.1	6.1	6.2	6	6.1
Specific Conductance	umho/cm	1600	S	680	650	470	430	390	370	570	540	1700	1600	2000	1900
Metals															
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	22	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	ND	ND	ND	ND	ND	ND	1.1	ND	5.7	4.5	6.6	6
Barium, Total, ICAP/MS	ug/l	1000	P	7.8	8.1	11	10	5.4	4.8	32	29	86	74	100	87
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	1.8	ND	2.2	ND	1.8	ND	ND	ND	4.1	ND	4.3	ND
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1300	P	3.7	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	5.3	ND	6.7	ND
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.9	ND
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds															
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.4	3.2
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l	1000	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	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

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2009/2010

Constituents	Units	MCL	MCL Type	Long Beach #6											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				3/26/2010	9/1/2010	3/26/2010	9/1/2010	3/26/2010	9/1/2010	3/26/2010	9/1/2010	3/26/2010	9/1/2010	3/26/2010	9/1/2010
General Mineral Characteristics															
Total Dissolved Solids (TDS)	mg/l	1000	S	680	690	670	710	230	240	230	240	200	200	270	280
Cation Sum	meq/l			11	12	11	12	3.7	3.9	3.6	4.2	3.2	3.3	4.8	4.7
Anion Sum	meq/l			12	12	11	12	3.7	3.8	3.6	3.9	3.1	3.2	4.6	4.5
Iron	mg/l	0.3	S	0.085	0.092	0.097	0.11	0.025	0.034	ND	0.047	ND	ND	0.088	0.088
Manganese	ug/l	50	S	18	17	23	25	4	4.4	22	17	5.5	5.6	100	94
Turbidity	NTU	5	S	0.71	3.2	0.85	3.5	0.25	0.65	0.4	0.56	0.18	0.3	0.17	0.66
Alkalinity	mg/l			540	550	530	540	160	160	150	160	120	120	130	130
Boron	mg/l	1	N	1.1	1.1	1.1	1.1	0.26	0.25	0.21	0.23	0.091	0.095	0.059	0.054
Bicarbonate	mg/l			660	660	640	650	190	200	180	200	140	150	160	150
Calcium	mg/l			8.2	7.9	8.6	8.8	4.9	5	5.9	6.7	12	12	48	47
Carbonate as CO3	mg/l			12	14	11	13	7.7	8	6.3	7.7	3.2	3.2	ND	ND
Hardness (Total, as CaCO3)	mg/l			28	27	28	29	13	14	16	18	34	34	140	140
Chloride	mg/l	500	S		21	20		16	16	16	18	19	19	59	57
Fluoride	mg/l	2	P	0.72	0.71	0.72	0.7	0.64	0.62	0.65	0.64	0.58	0.57	0.21	0.2
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.74	0.8	0.73	0.79	0.32	0.35	0.31	0.45	0.34	0.33	0.57	0.5
Magnesium, Total, ICAP	None			1.6	1.6	1.5	1.6	0.24	0.25	0.34	0.38	0.82	0.81	5.5	5.5
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			1.7	1.6	1.6	1.7	ND	ND	ND	ND	1.1	1.1	2.4	2.3
Sodium	mg/l			240	260	240	260	78	83	75	88	58	59	43	42
Sulfate	mg/l	500	S	1.1	1.2	ND	ND	ND	ND	5.6	2.8	10	10	15	15
Surfactants	mg/l	0.5	S	0.069	ND	0.057	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Nitrate, Nitrite-N, CALC	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			22	23	22	23	4.8	5.3	4.9	4.5	2	2.2	0.75	0.82
Carbon Dioxide	mg/l			3.8	3.3	3.9	3.5	ND	ND	ND	ND	ND	ND	ND	2.1
General Physical Properties															
Apparent Color	ACU	15	S	350	300	350	400	120	150	50	130	60	60	ND	5
Lab pH	Units			8.5	8.5	8.4	8.5	8.8	8.8	8.7	8.8	8.5	8.5	8.1	8.1
Odor	TON	3	S	8	2	4	4	2	2	2	1	2	1	2	2
pH of CaCO3 saturation(25C)	Units			7.7	7.7	7.7	7.7	8.5	8.4	8.4	8.3	8.2	8.2	7.6	7.6
pH of CaCO3 saturation(60C)	Units			7.3	7.3	7.3	7.2	8	8	8	7.9	7.8	7.8	7.1	7.1
Specific Conductance	µmho/cm	1600	S	1000	1000	1000	1000	370	360	350	370	310	300	470	470
Metals															
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	ND	ND	ND	24	21	28	29	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	2.9	2.3	1.2	ND	ND	ND	ND	ND	ND	ND	3.2	3
Barium, Total, ICAP/MS	ug/l	1000	P	7.6	7.5	12	12	3.8	4	9.9	8.3	ND	3.6	18	18
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1300	P	2.8	ND	2.6	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds															
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l	1000	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	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

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2009/2010

Constituents	Units	MCL	MCL Type	Los Angeles #1									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				5/18/2010	9/24/2010	5/18/2010	9/24/2010	5/18/2010	9/24/2010	5/18/2010	9/24/2010	5/18/2010	9/24/2010
General Mineral Characteristics													
Total Dissolved Solids (TDS)	mg/l	1000	S	350	360	380	360	370	350	650	660	670	670
Cation Sum	meq/l			6	5.6	6.4	6.1	6.4	6.3	11	10	11	10
Anion Sum	meq/l			5.8	5.7	6.1	6	6.1	6	11	11	11	11
Iron	mg/l	0.3	S	ND	ND	0.19	0.24	ND	ND	ND	ND	ND	ND
Manganese	ug/l	50	S	43	41	**53**	**72**	14	19	ND	ND	ND	ND
Turbidity	NTU	5	S	1.5	0.29	0.87	0.82	0.091	0.58	0.095	0.29	0.23	0.36
Alkalinity	mg/l			180	180	190	180	190	180	220	220	220	220
Boron	mg/l	1	N	0.15	0.15	0.15	0.14	0.17	0.16	0.2	0.19	0.2	0.19
Bicarbonate	mg/l			220	220	230	220	230	220	270	270	270	270
Calcium	mg/l			58	54	65	61	64	62	120	110	120	110
Carbonate as CO3	mg/l			2.4	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			200	180	230	210	230	220	420	390	420	380
Chloride	mg/l	500	S	22	22	22	22	22	22	80	78	80	79
Fluoride	mg/l	2	P	0.27	0.26	0.43	0.41	0.37	0.35	0.37	0.38	0.37	0.38
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.88	0.75	0.71	0.7	0.72	0.71	0.92	1	0.9	0.9
Magnesium, Total, ICAP	None			13	12	16	15	16	16	30	29	30	27
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	ND	ND	ND	ND	**15**	**14**	**15**	**15**
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			3.9	3.9	3.5	3.5	3.3	3.5	4.4	4.5	4.6	4.3
Sodium	mg/l			45	43	41	39	41	41	59	57	59	56
Sulfate	mg/l	500	S	72	72	84	84	84	84	140	140	140	140
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Nitrate, Nitrite-N, CALC	mg/l	10	P	ND	ND	ND	ND	ND	ND	**15**	**14**	**15**	**15**
Total Organic Carbon	mg/l			0.39	0.44	ND	ND	ND	ND	0.49	0.44	0.39	0.44
Carbon Dioxide	mg/l			2.2	2.7	3.9	3.6	3.6	3.5	6.1	4.5	6.4	5.7
General Physical Properties													
Apparent Color	ACU	15	S	3	3	ND	ND	ND	ND	10	**15**	**15**	**15**
Lab pH	Units			8.2	8.1	8	8	8	8	7.9	8	7.8	7.9
Odor	TON	3	S	1	ND	1	1	1	ND	2	ND	2	ND
pH of CaCO3 saturation(25C)	Units			7.3	7.4	7.3	7.3	7.3	7.3	6.9	7	6.9	7
pH of CaCO3 saturation(60C)	Units			6.9	6.9	6.8	6.9	6.8	6.9	6.5	6.5	6.5	6.5
Specific Conductance	umho/cm	1600	S	560	560	590	590	580	590	1000	1000	1000	1000
Metals													
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium, Total, ICAP/MS	ug/l	1000	P	27	27	46	43	66	62	150	150	150	150
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	1	ND	**570**	**570**	**620**	**610**
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds													
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	**46**	**48**	**48**	**48**
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	2.5	2.8	2.7	2.8
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	**0.86**	**0.76**	**0.89**	**0.7**
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l	1000	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	5.5	5.1	5.7	5.2

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2009/2010

CONSTITUENTS	UNITS	MCL	MCL TYPE	Los Angeles #2		
				Zone 2	Zone 3	Zone 4
				6/9/2010	6/9/2010	6/9/2010
General Mineral Characteristics						
Total Dissolved Solid (TDS)	mg/l	1000	S	**1100**	**1100**	**1200**
Cation Sum	meq/l			19	19	21
Anion Sum	meq/l			19	19	21
Iron	mg/l	0.3	S	0.18	**1.3**	**1.9**
Manganese	ug/l	50	S	**360**	**170**	**120**
Turbidity	NTU	5	S	**19**	**8.5**	**22**
Alkalinity	mg/l			330	340	380
Boron	mg/l	1	N	0.23	0.22	0.27
Bicarbonate as HCO3	mg/l			400	410	460
Calcium, Total, ICAP	mg/l			200	210	220
Carbonate as CO3	mg/l			2.3	2.2	ND
Hardness (Total, as CaCO3)	mg/l			710	730	770
Chloride	mg/l	500	S	210	250	300
Fluoride	mg/l	2	P	0.17	0.22	0.23
Hydroxide as OH	mg/l			ND	ND	ND
Langelier Index - 25 degree	None			1.4	1.4	1.3
Magnesium	None			53	52	55
Mercury	ug/l	2	P	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	ND
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND
Potassium	mg/l			9	6.7	7.5
Sodium, Total, ICAP	mg/l			93	95	120
Sulfate	mg/l	500	S	310	260	240
Surfactants	mg/l	0.5	S	ND	ND	ND
Total Nitrate, Nitrite-N, CALC	mg/l	10	P	ND	ND	ND
Total Organic Carbon	mg/l			0.49	0.65	0.9
Carbon Dioxide	mg/l			7.5	8.2	13
General Physical Properties						
Apparent Color	ACU	15	S	5	**20**	**25**
Lab pH	Units			7.9	7.9	7.8
Odor	TON	3	S	ND	1	1
pH of CaCO3 saturation(25C)	Units			6.5	6.5	6.4
pH of CaCO3 saturation(60C)	Units			6.1	6.1	6
Specific Conductance	umho/cm	1600	S	**1700**	**1700**	**1900**
Metals						
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	ND	ND	ND
Barium, Total, ICAP/MS	ug/l	1000	P	72	180	200
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	1.1	1.1	1.2
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1300	P	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15	P	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND
Volatile Organic Compounds						
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND
Chloroform (Trichloromethane)	ug/l			ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND
Isopropylbenzene	ug/l	770	N	ND	ND	ND
n-Propylbenzene	ug/l	260	N	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND
Dichlorodifluoromethane	ug/l	1000	N	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2009/2010

CONSTITUENTS	UNITS	MCL	MCL TYPE	Montebello #1									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				5/4/2010	9/20/2010	5/4/2010	9/20/2010	5/4/2010	9/20/2010	5/4/2010	9/20/2010	5/4/2010	9/20/2010
General Mineral Characteristics													
Total Dissolved Solid (TDS)	mg/l	1000	S	**2100**	**2200**	870	880	520	530	530	510	490	480
Cation Sum	meq/l			35	36	15	15	8.1	8.7	8.2	8.8	8.1	8.1
Anion Sum	meq/l			36	37	15	15	8.5	8.8	8.6	8.6	8.2	8.1
Iron	mg/l	0.3	S	0.14	0.16	0.18	0.2	0.034	0.038	ND	ND	ND	ND
Manganese	ug/l	50	S	8.5	8.8	31	31	**97**	**100**	**57**	**52**	ND	ND
Turbidity	NTU	5	S	0.46	0.7	0.52	0.52	0.91	0.5	0.095	0.5	0.18	0.088
Alkalinity	mg/l			910	900	580	580	190	200	190	190	190	190
Boron	mg/l	1	N	**5.8**	**6.3**	**2.1**	**2.3**	0.14	0.22	0.11	0.15	0.23	0.21
Bicarbonate as HCO3	mg/l			1100	1100	710	700	230	240	230	230	230	230
Calcium, Total, ICAP	mg/l			12	13	17	18	97	98	99	100	79	78
Carbonate as CO3	mg/l			12	15	7.4	8.9	ND	2.2	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			54	58	71	74	310	310	310	320	260	260
Chloride	mg/l	500	S	**650**	**670**	120	130	64	71	69	69	69	68
Fluoride	mg/l	2	P	0.46	0.44	0.32	0.29	0.16	0.14	0.19	0.19	0.36	0.34
Hydroxide as OH	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.92	1	0.84	0.94	0.86	1.1	0.91	0.94	0.66	0.66
Magnesium	None			5.7	6	7.1	7.3	16	16	16	17	15	16
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	2.9	3.5
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			7.5	7.7	5.2	5.5	3.4	3.6	3.4	3.6	3.3	3.3
Sodium, Total, ICAP	mg/l			780	790	300	310	44	54	43	52	64	65
Sulfate	mg/l	500	S	ND	ND	ND	ND	140	140	140	140	110	100
Surfactants	mg/l	0.5	S	0.054	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Nitrate, Nitrite-N, CALC	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	2.9	3.5
Total Organic Carbon	mg/l			37	39	24	23	0.64	1.3	0.5	0.77	0.38	0.42
Carbon Dioxide	mg/l			11	8.4	7.1	5.9	4.1	2.8	3.6	3.6	5.5	5.4
General Physical Properties													
Apparent Color	ACU	15	S	**350**	**500**	**150**	**250**	3	10	ND	5	ND	ND
Lab pH	Units			8.2	8.3	8.2	8.3	8	8.2	8	8	7.8	7.9
Odor	TON	3	S	**8**	**8**	**8**	**4**	1	1	2	ND	1	1
pH of CaCO3 saturation(25C)	Units			7.3	7.3	7.4	7.4	7.1	7.1	7.1	7.1	7.2	7.2
pH of CaCO3 saturation(60C)	Units			6.9	6.8	6.9	6.9	6.7	6.6	6.7	6.6	6.7	6.7
Specific Conductance	umho/cm	1600	S	**3500**	**3600**	1400	1400	800	870	840	860	810	810
Metals													
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	6.7	3.3	1	ND	ND	ND	ND	ND	1.8	1.6
Barium, Total, ICAP/MS	ug/l	1000	P	40	36	27	24	36	37	88	87	58	56
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	4.6	1.7	1.3	ND	1	ND	ND	ND	1.1	ND
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1300	P	25	ND	3	ND	ND	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	14	8.6	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds													
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l	1000	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	0.52	0.74

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2009/2010

CONSTITUENTS	UNITS	MCL	MCL TYPE	Norwalk #1									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				4/14/2010	9/30/2010	4/14/2010	9/30/2010	4/14/2010	9/30/2010	4/14/2010	9/30/2010	4/14/2010	9/30/2010
General Mineral Characteristics													
Total Dissolved Solid (TDS)	mg/l	1000	S	490	500	310	300	230	250	200	200	470	470
Cation Sum	meq/l			8.6	8.4	5.2	5	3.8	4.2	3.5	3.4	8.3	7.7
Anion Sum	meq/l			8.1	8.1	5	5.2	4	4.3	3.4	3.4	7.9	7.9
Iron	mg/l	0.3	S	ND	ND	ND	ND	0.02	ND	ND	0.029	0.11	0.18
Manganese	ug/l	50	S	ND	2.1	6.2	6.8	17	19	42	43	**160**	**150**
Turbidity	NTU	5	S	0.16	0.44	0.59	0.4	1	0.49	2.1	4.7	**25**	4.9
Alkalinity	mg/l			270	270	170	170	120	120	130	130	200	200
Boron	mg/l	1	N	0.41	0.4	0.2	0.2	ND	ND	0.052	0.051	0.087	0.081
Bicarbonate as HCO3	mg/l			330	330	200	210	150	150	160	160	250	240
Calcium, Total, ICAP	mg/l			14	13	9.2	8.8	24	26	28	27	75	69
Carbonate as CO3	mg/l			3.4	4.7	3.6	4.9	ND	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			63	61	28	27	68	73	92	90	260	240
Chloride	mg/l	500	S	65	66	57	59	48	56	20	22	130	130
Fluoride	mg/l	2	P	0.5	0.47	0.61	0.58	0.31	0.28	0.3	0.28	0.27	0.25
Hydroxide as OH	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.4	0.54	0.26	0.37	0.12	0.4	0.35	0.45	0.75	0.81
Magnesium	None			7.1	6.8	1.3	1.2	2	2.1	5.4	5.3	18	16
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			2.4	2.4	1.3	1.3	1.9	2.3	1.7	1.8	3.5	3.6
Sodium, Total, ICAP	mg/l			170	160	110	100	56	61	37	37	68	65
Sulfate	mg/l	500	S	40	42	ND	ND	10	9.3	9.6	9.2	5.9	5.9
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	0.18	0.26
Total Nitrate, Nitrite-N, CALC	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			2.2	2.2	2.6	2.7	0.4	0.5	0.37	0.4	1.9	1.8
Carbon Dioxide	mg/l			3.4	2.4	ND	ND	2.3	ND	ND	ND	4.7	3.7
General Physical Properties													
Apparent Color	ACU	15	S	**25**	**25**	**40**	**30**	ND	3	3	5	5	5
Lab pH	Units			8.2	8.4	8.4	8.6	8	8.3	8.2	8.3	7.9	8
Odor	TON	3	S	**8**	**4**	**3**	2	**3**	ND	**3**	ND	2	**4**
pH of CaCO3 saturation(25C)	Units			7.8	7.8	8.2	8.2	7.9	7.9	7.8	7.8	7.2	7.2
pH of CaCO3 saturation(60C)	Units			7.4	7.4	7.7	7.7	7.5	7.4	7.4	7.4	6.7	6.8
Specific Conductance	umho/cm	1600	S	820	800	520	510	410	420	340	340	820	800
Metals													
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	37	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	ND	ND	ND	ND	5	5	**17**	**16**	**12**	**12**
Barium, Total, ICAP/MS	ug/l	1000	P	11	15	7.3	6.8	81	85	110	110	340	330
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	ND	ND	1.1	ND	ND	ND	ND	1.3	2.4	1
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	**72**	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds													
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l	1000	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	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

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2009/2010

CONSTITUENTS	UNITS	MCL	MCL TYPE	Norwalk #2											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				4/28/2010	9/29/2010	4/28/2010	9/29/2010	4/28/2010	9/29/2010	4/28/2010	9/29/2010	4/28/2010	9/29/2010	4/28/2010	9/29/2010
General Mineral Characteristics															
Total Dissolved Solid (TDS)	mg/l	1000	S	420	430	270	270	260	230	310	330	450	460	470	490
Cation Sum	meq/l			7.2	7.3	4.8	4.8	4.1	4.2	5.6	5.6	7.2	7.6	8.1	8.2
Anion Sum	meq/l			7.2	7.2	4.9	4.8	4.1	4.1	5.5	5.5	7.4	7.6	8.1	8.2
Iron	mg/l	0.3	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Manganese	ug/l	50	S	13	10	11	11	24	23	ND	ND	19	11	8.2	7.5
Turbidity	NTU	5	S	0.31	0.16	0.62	0.18	0.16	0.15	0.16	0.11	0.16	0.15	0.3	0.16
Alkalinity	mg/l			190	180	190	180	150	150	170	160	160	160	190	190
Boron	mg/l	1	N	0.24	0.23	0.25	0.24	ND	ND	0.063	0.058	0.13	0.12	0.2	0.19
Bicarbonate as HCO3	mg/l			230	220	230	220	190	180	210	200	190	190	230	230
Calcium, Total, ICAP	mg/l			45	48	12	12	42	43	66	65	79	85	81	81
Carbonate as CO3	mg/l			ND	2.1	2.9	3.8	ND	ND	ND	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			150	160	39	39	120	130	210	210	260	280	270	270
Chloride	mg/l	500	S	68	70	32	32	12	13	22	23	67	71	67	68
Fluoride	mg/l	2	P	0.32	0.3	0.45	0.45	0.18	0.19	0.26	0.26	0.21	0.21	0.34	0.35
Hydroxide as OH	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.54	0.74	0.27	0.39	0.59	0.35	0.62	0.79	0.51	0.8	0.57	0.76
Magnesium	None			9	9.5	2.3	2.3	5	5.1	11	11	16	17	17	17
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	ND	ND	ND	ND	1.1	1.2	2.5	2.7	2.4	2.3
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			3.7	3.8	2.5	2.6	2.6	2.7	3.3	3.4	3.9	4.1	4	4.1
Sodium, Total, ICAP	mg/l			94	92	92	91	35	36	31	30	42	43	59	59
Sulfate	mg/l	500	S	72	76	11	12	33	35	66	69	100	110	110	110
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Nitrate, Nitrite-N, CALC	mg/l	10	P	ND	ND	ND	ND	ND	ND	1.1	1.2	2.5	2.7	2.4	2.3
Total Organic Carbon	mg/l			1.3	1.2	1.4	1.2	0.33	0.34	ND	ND	0.36	0.44	0.44	0.58
Carbon Dioxide	mg/l			4.1	2.5	ND	ND	2.2	3.8	4	2.5	5.4	2.9	6.6	4.3
General Physical Properties															
Apparent Color	ACU	15	S	10	10	**20**	**20**	ND	ND	ND	ND	ND	ND	ND	ND
Lab pH	Units			8	8.2	8.3	8.4	8.1	7.9	7.9	8.1	7.8	8	7.8	7.9
Odor	TON	3	S	2	ND	2	1	2	2	1	ND	1	ND	1	ND
pH of CaCO3 saturation(25C)	Units			7.4	7.4	8	8	7.5	7.6	7.3	7.3	7.3	7.2	7.2	7.2
pH of CaCO3 saturation(60C)	Units			7	7	7.6	7.6	7.1	7.1	6.9	6.9	6.8	6.8	6.7	6.7
Specific Conductance	umho/cm	1600	S	750	710	490	460	410	400	560	530	750	730	820	780
Metals															
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	3.2	2.7	ND	ND	ND	ND	2.1	2.2	2.4	2.4	1.7	1.7
Barium, Total, ICAP/MS	ug/l	1000	P	48	49	9	9.1	29	30	140	160	89	78	54	56
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	1.9	ND	ND	ND	ND	ND	3.6	1.7	2.5	ND	1.7	ND
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds															
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	0.56	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	0.54	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l	1000	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	0.51	1.4	1.7	1.6	1.4	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2009/2010

CONSTITUENTS	UNITS	MCL	MCL TYPE	Pico #1						
				Zone 1	Zone 2		Zone 3		Zone 4	
				9/28/2010	5/18/2010	9/28/2010	5/18/2010	9/28/2010	5/18/2010	9/28/2010
General Mineral Characteristics										
Total Dissolved Solid (TDS)	mg/l	1000	S	350	330	330	400	540	560	590
Cation Sum	meq/l			5.9	5.9	5.4	7	8.4	9.3	9.3
Anion Sum	meq/l			6.1	5.6	5.5	6.9	8.7	9.3	9.3
Iron	mg/l	0.3	S	0.093	0.29	0.29	**0.31**	**0.39**	ND	ND
Manganese	ug/l	50	S	36	24	24	13	17	ND	ND
Turbidity	NTU	5	S	**6.3**	1.3	2.1	3.1	1.9	0.062	0.19
Alkalinity	mg/l			300	170	170	170	200	160	160
Boron	mg/l	1	N	0.63	0.08	0.069	0.15	0.13	0.22	0.22
Bicarbonate as HCO3	mg/l			360	210	200	210	240	200	200
Calcium, Total, ICAP	mg/l			9	74	68	73	99	95	94
Carbonate as CO3	mg/l			4.3	ND	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			36	240	220	240	320	310	310
Chloride	mg/l	500	S	3.1	22	21	42	66	100	110
Fluoride	mg/l	2	P	0.25	0.27	0.27	0.25	0.28	0.28	0.28
Hydroxide as OH	mg/l			ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.33	0.64	0.66	0.31	0.71	0.53	0.57
Magnesium	None			3.3	13	12	15	19	18	18
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	ND	ND	ND	1.7	1.7
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			3.7	2.9	2.9	3.7	4.1	4.5	4.9
Sodium, Total, ICAP	mg/l			120	24	22	46	43	68	69
Sulfate	mg/l	500	S	1.1	75	72	110	140	140	140
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND
Total Nitrate, Nitrite-N, CALC	mg/l	10	P	ND	ND	ND	ND	ND	1.7	1.7
Total Organic Carbon	mg/l			3.2	ND	0.31	ND	0.45	0.59	0.69
Carbon Dioxide	mg/l			3.3	4.3	3.7	8.9	6.5	6.7	5.7
General Physical Properties										
Apparent Color	ACU	15	S	**40**	5	5	5	10	ND	3
Lab pH	Units			8.3	7.9	8	7.6	7.8	7.7	7.8
Odor	TON	3	S	1	1	1	1	1	1	1
pH of CaCO3 saturation(25C)	Units			7.9	7.3	7.3	7.3	7.1	7.2	7.2
pH of CaCO3 saturation(60C)	Units			7.5	6.8	6.9	6.8	6.6	6.7	6.7
Specific Conductance	µmho/cm	1600	S	560	550	520	680	810	930	910
Metals										
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	5.2	ND	ND	ND	ND	3	2.9
Barium, Total, ICAP/MS	ug/l	1000	P	16	83	88	41	53	55	59
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	1.6	ND
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds										
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l			ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770	N	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260	N	ND	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l	1000	N	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	3	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2009/2010

CONSTITUENTS	UNITS	MCL	MCL TYPE	Pico #2											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				5/5/2010	9/23/2010	5/5/2010	9/23/2010	5/5/2010	9/23/2010	5/5/2010	9/23/2010	5/5/2010	9/23/2010	5/5/2010	9/23/2010
General Mineral Characteristics															
Total Dissolved Solid (TDS)	mg/l	1000	S	520	570	580	640	540	550	500	510	470	490	310	410
Cation Sum	meq/l			8.6	8.8	9.7	9.5	8.4	8.8	7.8	8	7.7	7.6	5	6.5
Anion Sum	meq/l			9	9	10	10	8.8	8.8	8.3	8.2	7.9	7.8	5.2	6.6
Iron	mg/l	0.3	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Manganese	ug/l	50	S	ND	ND	2.6	ND	ND	ND	ND	ND	24	26	ND	ND
Turbidity	NTU	5	S	0.2	0.91	0.12	0.41	0.5	0.96	0.12	0.58	0.11	0.6	1.8	**14**
Alkalinity	mg/l			220	210	230	220	200	200	140	140	130	130	100	110
Boron	mg/l	1	N	0.063	ND	0.15	0.14	0.16	0.15	0.24	0.23	0.23	0.24	0.12	0.14
Bicarbonate as HCO3	mg/l			260	260	280	270	240	240	170	170	160	160	130	130
Calcium, Total, ICAP	mg/l			120	120	120	120	96	100	68	67	59	57	32	50
Carbonate as CO3	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			370	380	400	390	320	340	230	230	210	210	120	190
Chloride	mg/l	500	S	52	54	79	79	72	74	98	97	94	92	55	77
Fluoride	mg/l	2	P	0.25	0.22	0.26	0.25	0.3	0.28	0.33	0.28	0.38	0.4	0.41	0.28
Hydroxide as OH	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.87	1.1	0.84	0.98	0.57	0.95	0.23	0.44	0.14	0.3	-0.27	-0.00078
Magnesium	None			20	21	24	24	19	20	14	15	16	16	10	16
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	3.2	3.2	2.8	2.9	3	3.2	2.5	2.8	2.5	2.9	1.5	1.8
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			3.6	3.9	3.8	3.8	4	4.2	3.8	4.1	4.1	4.4	5.2	6.6
Sodium, Total, ICAP	mg/l			25	25	37	38	43	45	73	77	76	77	56	58
Sulfate	mg/l	500	S	140	140	150	150	120	130	120	120	110	110	68	99
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Nitrate, Nitrite-N, CALC	mg/l	10	P	3.2	3.2	2.8	2.9	3	3.2	2.5	2.8	2.5	2.9	1.5	1.8
Total Organic Carbon	mg/l			ND	ND	0.37	0.38	ND	0.42	0.58	0.77	0.75	0.86	1.1	1
Carbon Dioxide	mg/l			6.4	4.2	7.9	5.4	8.9	3.8	7	4.1	6.7	4.4	5.5	5.3
General Physical Properties															
Apparent Color	ACU	15	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3	10
Lab pH	Units			7.8	8	7.8	7.9	7.7	8	7.6	7.8	7.6	7.8	7.6	7.6
Odor	TON	3	S	1	ND	1	ND	1	1	2	1	2	ND	1	1
pH of CaCO3 saturation(25C)	Units			7	7	6.9	6.9	7.1	7.1	7.4	7.4	7.5	7.5	7.8	7.6
pH of CaCO3 saturation(60C)	Units			6.5	6.5	6.5	6.5	6.6	6.6	6.9	6.9	7	7	7.4	7.2
Specific Conductance	umho/cm	1600	S	870	850	970	930	870	850	860	820	820	790	550	680
Metals															
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	1.6	1.5	2.2	2.4	1.7	1.6	2.7	2.2	1.3	ND	**16**	**12**
Barium, Total, ICAP/MS	ug/l	1000	P	170	190	120	120	99	110	59	56	75	74	77	120
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	2.1	1.7	1.6	ND	2	1.6	1.5	ND	1.6	ND	1.4	ND
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds															
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	0.68	0.74	1.8	1.9	3.4	4	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.72
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l	1000	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	1.9	1.9	0.53	0.58	0.92	1.2	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

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2009/2010

CONSTITUENTS	UNITS	MCL	MCL TYPE	Rio Hondo #1											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				4/21/2010	9/23/2010	4/21/2010	9/23/2010	4/21/2010	9/23/2010	4/21/2010	9/23/2010	4/21/2010	9/23/2010	4/21/2010	9/23/2010
General Mineral Characteristics															
Total Dissolved Solid (TDS)	mg/l	1000	S	270	280	460	480	500	500	410	420	370	330	200	200
Cation Sum	meq/l			4.4	4.3	7.4	7.3	8.1	8.2	6.4	6.5	5.8	5.2	2.8	3.3
Anion Sum	meq/l			4.4	4.5	7.5	7.5	8.1	8.1	6.6	6.7	5.9	5.4	2.9	3.3
Iron	mg/l	0.3	S	ND	ND	0.072	0.069	ND	ND	ND	ND	ND	ND	ND	ND
Manganese	ug/l	50	S	29	21	35	35	ND	ND	ND	ND	ND	ND	ND	ND
Turbidity	NTU	5	S	1.4	0.95	0.25	0.79	0.14	0.52	0.058	1.2	4.7	1.2	**9.3**	**12**
Alkalinity	mg/l			150	150	170	170	190	190	130	130	120	110	74	67
Boron	mg/l	1	N	0.055	0.07	ND	ND	0.15	0.15	0.18	0.18	0.14	0.13	0.094	0.08
Bicarbonate as HCO3	mg/l			180	180	210	210	230	230	160	160	140	140	90	82
Calcium, Total, ICAP	mg/l			40	39	97	94	91	92	59	59	53	46	20	25
Carbonate as CO3	mg/l			ND	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			130	130	310	300	290	300	190	200	180	160	70	87
Chloride	mg/l	500	S	18	18	49	50	64	65	70	74	62	54	20	32
Fluoride	mg/l	2	P	0.23	0.23	0.19	0.18	0.27	0.27	0.34	0.34	0.28	0.3	0.38	0.35
Hydroxide as OH	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.51	0.64	0.79	0.9	0.76	0.87	0.34	0.46	0.16	0.23	-0.51	-0.33
Magnesium	None			8.1	8.1	17	17	16	17	11	12	12	9.9	5	6.2
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	ND	ND	1.8	1.8	2	2.1	2	2	1.5	1.3
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			2.7	2.7	3.4	3.4	3.8	3.9	3.5	3.6	3.3	3.2	2.5	2.7
Sodium, Total, ICAP	mg/l			38	38	25	25	48	50	57	57	49	46	30	34
Sulfate	mg/l	500	S	48	48	130	130	110	110	90	91	79	71	33	45
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Nitrate, Nitrite-N, CALC	mg/l	10	P	ND	ND	ND	ND	1.8	1.8	2	2.1	2	2	1.5	1.3
Total Organic Carbon	mg/l			ND	0.36	ND	0.33	0.38	0.42	0.41	0.47	ND	0.39	ND	0.51
Carbon Dioxide	mg/l			2.3	ND	4	3	5	3.9	3.9	2.9	4.3	3.1	3	2.1
General Physical Properties															
Apparent Color	ACU	15	S	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	5	10
Lab pH	Units			8.1	8.2	7.9	8.1	7.9	8	7.8	7.9	7.7	7.9	7.7	7.8
Odor	TON	3	S	1	1	2	1	1	1	1	ND	1	ND	1	ND
pH of CaCO3 saturation(25C)	Units			7.6	7.6	7.1	7.2	7.1	7.1	7.5	7.5	7.6	7.6	8.2	8.1
pH of CaCO3 saturation(60C)	Units			7.2	7.2	6.7	6.7	6.7	6.7	7	7	7.1	7.2	7.8	7.7
Specific Conductance	µmho/cm	1600	S	440	430	710	720	800	780	680	690	620	560	300	350
Metals															
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	ND	ND	ND	ND	1.9	2	2.4	2.5	1.6	1.6	1.4	1.2
Barium, Total, ICAP/MS	ug/l	1000	P	20	20	55	54	130	130	54	55	61	53	43	50
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	1	ND	ND	ND	1.1	ND	ND	ND
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds															
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l	1000	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	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

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2009/2010

CONSTITUENTS	UNITS	MCL	MCL TYPE	South Gate #1				
				Zone 1	Zone 2	Zone 3	Zone 4	Zone 5
				5/12/2010	5/12/2010	5/12/2010	5/12/2010	5/12/2010
General Mineral Characteristics								
Total Dissolved Solid (TDS)	mg/l	1000	S	300	420	410	460	580
Cation Sum	meq/l			5.3	6.7	6.9	7.6	9.7
Anion Sum	meq/l			5.2	6.6	6.8	7.4	9.3
Iron	mg/l	0.3	S	0.03	ND	ND	ND	0.071
Manganese	ug/l	50	S	47	ND	ND	ND	**120**
Turbidity	NTU	5	S	0.11	0.45	0.19	0.33	0.46
Alkalinity	mg/l			170	150	160	170	200
Boron	mg/l	1	N	0.12	0.14	0.12	0.17	0.14
Bicarbonate as HCO3	mg/l			210	180	200	200	250
Calcium, Total, ICAP	mg/l			52	71	77	80	100
Carbonate as CO3	mg/l			ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			160	230	260	270	360
Chloride	mg/l	500	S	23	51	46	61	100
Fluoride	mg/l	2	P	0.3	0.29	0.34	0.34	0.37
Hydroxide as OH	mg/l			ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.71	0.62	0.72	0.68	0.81
Magnesium	None			8	13	16	16	26
Mercury	ug/l	2	P	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	2.1	2.3	2.3	ND
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND
Potassium	mg/l			2.4	3.1	2.8	3.2	3
Sodium, Total, ICAP	mg/l			46	45	39	52	56
Sulfate	mg/l	500	S	55	100	100	110	110
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND
Total Nitrate, Nitrite-N, CALC	mg/l	10	P	ND	2.1	2.3	2.3	ND
Total Organic Carbon	mg/l			ND	0.33	ND	0.32	0.59
Carbon Dioxide	mg/l			2.6	3.2	3.3	4	5.6
General Physical Properties								
Apparent Color	ACU	15	S	3	ND	ND	ND	3
Lab pH	Units			8.1	8	8	7.9	7.9
Odor	TON	3	S	2	1	2	1	2
pH of CaCO3 saturation(25C)	Units			7.4	7.3	7.3	7.2	7
pH of CaCO3 saturation(60C)	Units			7	6.9	6.8	6.8	6.6
Specific Conductance	umho/cm	1600	S	510	670	670	740	920
Metals								
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	3.1	2.9	2.9	2.3	2.6
Barium, Total, ICAP/MS	ug/l	1000	P	140	93	150	73	220
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	2.6	2.1	3.4	3	2.9
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1300	P	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15	P	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND
Volatile Organic Compounds								
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	0.67	2.6	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l			ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770	N	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260	N	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l	1000	N	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	0.87	2.4	0.69	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2009/2010

CONSTITUENTS	UNITS	MCL	MCL TYPE	Whittier #1									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				4/8/2010	9/28/2010	4/8/2010	9/28/2010	4/8/2010	9/28/2010	4/8/2010	9/28/2010	4/8/2010	9/28/2010
General Mineral Characteristics													
Total Dissolved Solid (TDS)	mg/l	1000	S	**2700**	**2700**	**2500**	**2600**	**1800**	**1800**	690	700	650	700
Cation Sum	meq/l			41	38	39	37	28	26	12	11	12	10
Anion Sum	meq/l			41	39	39	42	27	27	11	12	11	11
Iron	mg/l	0.3	S	**0.57**	**0.54**	**0.43**	**0.43**	0.28	**0.3**	ND	ND	ND	ND
Manganese	ug/l	50	S	**57**	**55**	**91**	**80**	**76**	**69**	25	24	5.3	5.4
Turbidity	NTU	5	S	3.3	3.8	2.8	2.7	1.6	1.9	1.4	0.15	0.88	0.72
Alkalinity	mg/l			270	270	290	290	300	290	250	260	240	240
Boron	mg/l	1	N	0.91	0.81	0.99	0.9	0.65	0.59	0.21	0.2	0.18	0.15
Bicarbonate as HCO3	mg/l			330	330	350	350	370	360	310	310	290	290
Calcium, Total, ICAP	mg/l			200	180	200	180	160	150	85	75	85	74
Carbonate as CO3	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			1100	940	1000	950	790	710	370	330	380	340
Chloride	mg/l	500	S	270	230	240	270	190	180	76	79	81	84
Fluoride	mg/l	2	P	0.26	0.27	0.27	0.28	0.47	0.48	0.18	0.18	0.3	0.3
Hydroxide as OH	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			1.1	1.1	1.2	1.1	1.2	1.1	0.85	0.74	0.82	0.79
Magnesium	None			140	120	130	120	92	85	37	34	41	37
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	ND	ND	ND	ND	3.9	4.1	4.9	5.3
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			11	11	10	9.8	7	7.1	4.1	4	3.5	3.4
Sodium, Total, ICAP	mg/l			450	440	420	410	270	260	110	100	88	83
Sulfate	mg/l	500	S	**1300**	**1300**	**1300**	**1400**	**770**	**780**	180	190	170	180
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Nitrate, Nitrite-N, CALC	mg/l	10	P	ND	ND	ND	ND	ND	ND	3.9	4.1	4.9	5.3
Total Organic Carbon	mg/l			1.6	1.7	2	2.1	1.1	1.2	ND	ND	ND	ND
Carbon Dioxide	mg/l			9.4	8.5	8.9	10	8.7	8.1	6.8	8	6.5	5.9
General Physical Properties													
Apparent Color	ACU	15	S	**20**	**20**	**15**	**20**	10	10	ND	ND	ND	ND
Lab pH	Units			7.8	7.8	7.8	7.8	7.8	7.9	7.9	7.8	7.9	7.9
Odor	TON	3	S	2	**3**	2	1	2	1	2	1	1	ND
pH of CaCO3 saturation(25C)	Units			6.6	6.7	6.6	6.7	6.7	6.7	7	7.1	7.1	7.1
pH of CaCO3 saturation(60C)	Units			6.2	6.2	6.2	6.2	6.2	6.3	6.6	6.6	6.6	6.7
Specific Conductance	umho/cm	1600	S	**3500**	**3500**	**3300**	**3300**	**2400**	**2400**	1100	1100	1100	1100
Metals													
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	1.1	ND	1.2	ND	ND	ND	1.6	1.4	1.1	ND
Barium, Total, ICAP/MS	ug/l	1000	P	18	16	18	16	21	19	34	30	27	25
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	2.4	ND	2.2	ND	1.8	ND	1.3	ND	4.1	3.5
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	13	14	16	17
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds													
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l	1000	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	1.6	1.6	2.7	2.6

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2009/2010

CONSTITUENTS	UNITS	MCL	MCL TYPE	Whittier #2											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				4/7/2010	9/29/2010	4/7/2010	9/29/2010	4/7/2010	9/29/2010	4/7/2010	9/29/2010	4/7/2010	9/29/2010	4/7/2010	9/29/2010
General Mineral Characteristics															
Total Dissolved Solid (TDS)	mg/l	1000	S	860	870	230	230	720	740	**1600**	**1800**	730	690	**1100**	**1100**
Cation Sum	meq/l			15	15	4.2	4.1	13	12	27	28	13	11	19	17
Anion Sum	meq/l			15	14	4	4	12	12	26	29	12	11	17	18
Iron	mg/l	0.3	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Manganese	ug/l	50	S	**60**	**53**	40	41	**56**	**65**	**190**	**190**	ND	ND	ND	ND
Turbidity	NTU	5	S	0.35	0.28	0.21	0.3	0.17	0.21	0.22	0.19	0.47	0.14	0.99	0.49
Alkalinity	mg/l			240	240	170	170	210	210	370	400	230	210	310	360
Boron	mg/l	1	N	0.67	0.61	0.27	0.26	0.25	0.24	0.82	0.85	0.21	0.18	0.39	0.36
Bicarbonate as HCO3	mg/l			290	290	200	210	260	250	450	490	280	250	380	440
Calcium, Total, ICAP	mg/l			91	93	24	23	89	84	140	130	140	120	180	170
Carbonate as CO3	mg/l			ND	ND	2.5	2.4	ND	ND	2.1	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			340	340	78	75	370	350	690	680	470	400	640	590
Chloride	mg/l	500	S	240	230	11	10	120	120	220	240	130	110	90	93
Fluoride	mg/l	2	P	0.31	0.26	0.3	0.27	0.3	0.27	0.47	0.43	0.25	0.24	0.29	0.26
Hydroxide as OH	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.91	0.87	0.52	0.47	0.98	0.89	1.2	1.1	1.1	1	1.3	1.2
Magnesium	None			28	26	4.5	4.4	36	35	86	85	28	24	44	42
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	ND	ND	0.55	0.58	2.4	2.4	6.8	4.2	7.9	7.9
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			4.7	4.6	2.4	2.6	3.9	4.2	4.2	4.4	4.7	4.7	5	5.1
Sodium, Total, ICAP	mg/l			190	180	58	58	120	120	310	320	78	73	130	130
Sulfate	mg/l	500	S	150	160	14	15	210	220	**570**	**650**	180	170	360	350
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Nitrate, Nitrite-N, CALC	mg/l	10	P	ND	ND	ND	ND	0.55	0.58	2.4	2.4	6.8	4.2	7.9	7.9
Total Organic Carbon	mg/l			0.7	0.78	0.5	0.56	0.36	0.41	0.42	0.51	0.33	0.36	0.44	0.51
Carbon Dioxide	mg/l			5.6	6.1	ND	ND	3.6	4	10	15	4.8	4.6	8.5	11
General Physical Properties															
Apparent Color	ACU	15	S	ND	3	5	5	ND	ND	ND	ND	ND	ND	ND	ND
Lab pH	Units			7.9	7.9	8.3	8.2	8.1	8	7.9	7.7	8	8	7.9	7.8
Odor	TON	3	S	**3**	1	2	1	2	1	1	ND	1	ND	1	1
pH of CaCO3 saturation(25C)	Units			7	7	7.8	7.8	7.1	7.1	6.7	6.6	6.8	7	6.6	6.6
pH of CaCO3 saturation(60C)	Units			6.6	6.6	7.3	7.3	6.6	6.7	6.2	6.2	6.4	6.5	6.2	6.1
Specific Conductance	umho/cm	1600	S	1500	1400	400	380	1200	1200	**2500**	**2500**	1200	1100	**1600**	1500
Metals															
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	2.4	1.2	ND	ND	2.4	2.2	1.9	1.4	1.7	1.2	1.9	1.6
Barium, Total, ICAP/MS	ug/l	1000	P	32	29	21	22	51	51	14	14	97	81	41	38
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	3.3	1.8	ND	ND	3	2.4	5.2	4.8
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1300	P	ND	ND	ND	ND	ND	ND	2.5	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.9	ND
Selenium, Total, ICAP/MS	ug/l	50	P	6.1	ND	ND	ND	ND	ND	8.8	8.1	ND	ND	ND	ND
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds															
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	1.3	0.86	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.8	0.61
1,1-Dichloroethylene	ug/l	6	P	ND	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l	1000	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	1.4	1.3	2.6	ND	5.4	2.3	3.3	2.5

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2009/2010

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
				9/8/2010	9/8/2010	9/8/2010	9/8/2010	9/8/2010	9/8/2010	9/8/2010	9/8/2010	9/8/2010
General Mineral Characteristics												
Total Dissolved Solid (TDS)	mg/l	1000	S	**1200**	210	450	540	450	470	570	590	610
Cation Sum	meq/l			19	3.5	7.1	8.2	7.1	8.7	9.6	9.8	10
Anion Sum	meq/l			20	3.4	6.9	8.1	7	8.6	9.6	9.7	10
Iron	mg/l	0.3	S	**9.1**	0.039	0.026	0.031	ND	ND	0.024	ND	ND
Manganese	ug/l	50	S	**640**	17	ND	ND	ND	26	32	17	19
Turbidity	NTU	5	S	**75**	0.59	0.63	0.56	0.28	0.46	0.39	0.51	0.43
Alkalinity	mg/l			84	110	140	150	150	160	160	170	170
Boron	mg/l	1	N	**1**	0.17	0.071	0.086	0.096	0.24	0.27	0.28	0.3
Bicarbonate as HCO3	mg/l			100	140	170	190	180	190	200	210	210
Calcium, Total, ICAP	mg/l			65	11	98	110	93	90	87	89	81
Carbonate as CO3	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			210	31	280	330	290	280	280	290	280
Chloride	mg/l	500	S	**650**	32	66	89	73	100	120	120	120
Fluoride	mg/l	2	P	0.73	0.38	0.21	0.23	0.23	0.22	0.23	0.23	0.3
Hydroxide as OH	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			-0.5	-0.032	0.79	1	0.89	0.9	0.87	0.89	0.79
Magnesium	None			13	0.49	9.7	14	13	14	15	16	18
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	1.3	1.4	1.3	1.1	2.6	2.6	2.9
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			ND	1.7	2.9	4.3	4.2	5	5.4	5.6	5.8
Sodium, Total, ICAP	mg/l			350	65	31	34	29	67	91	90	110
Sulfate	mg/l	500	S	ND	9.4	100	110	90	120	130	130	150
Surfactants	mg/l	0.5	S	ND	ND	0.11	ND	0.13	0.069	0.18	0.081	0.17
Total Nitrate, Nitrite-N, CALC	mg/l	10	P	ND	ND	1.3	1.4	1.3	1.1	2.6	2.6	2.9
Total Organic Carbon	mg/l			8.8	0.83	0.7	1	0.74	1.2	1.2	1.3	1.6
Carbon Dioxide	mg/l			12	ND	2.6	2.1	2.3	2.5	2.7	3	3.5
General Physical Properties												
Apparent Color	ACU	15	S	**120**	5	ND	ND	ND	ND	ND	ND	5
Lab pH	Units			7.1	8.2	8	8.2	8.1	8.1	8.1	8.1	8
Odor	TON	3	S	**4**	**3**	ND	ND	ND	1	1	1	1
pH of CaCO3 saturation(25C)	Units			7.6	8.2	7.2	7.1	7.2	7.2	7.2	7.2	7.2
pH of CaCO3 saturation(60C)	Units			7.2	7.8	6.8	6.7	6.8	6.8	6.8	6.7	6.8
Specific Conductance	umho/cm	1600	S	**2200**	340	680	780	690	850	940	950	990
Metals												
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	ND	ND	ND	ND	ND	22	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	9.8	1.7	1.2	1.8	1.5	1.7	1.9	1.5	1.2
Barium, Total, ICAP/MS	ug/l	1000	P	430	25	200	200	190	140	110	88	54
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	ND	ND	3.3	2	3.4	1.5	1.6	1.2	ND
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	3.7	4.2
Lead, Total, ICAP/MS	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	35	8.8	18	19
Selenium, Total, ICAP/MS	ug/l	50	P	12	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	39	25	ND	24	ND	25	21	ND	ND
Volatile Organic Compounds												
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770	N	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260	N	ND	ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l	1000	N	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P									

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2009/2010

CONSTITUENTS	UNITS	MCL	MCL TYPE	Willowbrook #1							
				Zone 1		Zone 2		Zone 3		Zone 4	
				4/15/2010	9/22/2010	4/15/2010	9/22/2010	4/15/2010	9/22/2010	4/15/2010	9/22/2010
General Mineral Characteristics											
Total Dissolved Solid (TDS)	mg/l	1000	S	350	340	310	320	350	320	350	330
Cation Sum	meq/l			6	6.4	5.7	5.7	5.9	6	5.9	5.8
Anion Sum	meq/l			5.9	6.1	5.2	5.5	5.7	5.8	5.6	5.8
Iron	mg/l	0.3	S	0.057	0.063	ND	ND	0.077	0.079	ND	ND
Manganese	ug/l	50	S	**52**	**50**	49	48	31	30	**87**	**87**
Turbidity	NTU	5	S	0.45	0.56	0.089	0.11	0.24	0.21	**27**	**10**
Alkalinity	mg/l			230	250	160	180	180	180	180	190
Boron	mg/l	1	N	0.2	0.2	0.12	0.11	0.13	0.12	0.12	0.13
Bicarbonate as HCO3	mg/l			290	310	200	210	220	220	220	230
Calcium, Total, ICAP	mg/l			41	39	58	57	60	60	60	58
Carbonate as CO3	mg/l			2.1	3	ND	2.2	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			140	130	190	190	200	200	190	190
Chloride	mg/l	500	S	17	16	20	21	20	21	23	24
Fluoride	mg/l	2	P	0.25	0.22	0.28	0.24	0.41	0.36	0.36	0.32
Hydroxide as OH	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.67	0.81	0.7	0.85	0.6	0.76	0.65	0.77
Magnesium	None			8.5	8.5	11	11	13	13	10	10
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			4.5	5	2.6	2.7	3.5	3.6	2.9	2.9
Sodium, Total, ICAP	mg/l			73	84	43	45	41	43	45	45
Sulfate	mg/l	500	S	35	28	68	69	72	75	65	66
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND
Total Nitrate, Nitrite-N, CALC	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			1.8	2.3	ND	0.34	ND	0.31	ND	0.33
Carbon Dioxide	mg/l			4.2	3.3	2.6	2.2	4.2	3	3.8	2.9
General Physical Properties											
Apparent Color	ACU	15	S	**15**	**20**	3	3	3	ND	3	5
Lab pH	Units			8.1	8.2	8.1	8.2	7.9	8.1	8	8.1
Odor	TON	3	S	**3**	1	1	ND	2	1	2	ND
pH of CaCO3 saturation(25C)	Units			7.4	7.4	7.4	7.4	7.3	7.3	7.3	7.3
pH of CaCO3 saturation(60C)	Units			6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9
Specific Conductance	umho/cm	1600	S	580	590	540	530	560	570	560	560
Metals											
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	6.1	5.8	ND	ND	2.9	2.9	4.9	4.7
Barium, Total, ICAP/MS	ug/l	1000	P	40	41	52	53	75	75	130	140
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds											
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770	N	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260	N	ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l	1000	N	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND		ND		ND		ND	

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level

TABLE 3.2
WEST COAST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2009/2010

Constituents	Units	MCL	MCL Type	Carson #1							
				Zone 1		Zone 2		Zone 3		Zone 4	
				3/11/2010	8/24/2010	3/11/2010	8/24/2010	3/11/2010	8/24/2010	3/11/2010	8/24/2010
General Mineral Characteristics											
Total Dissolved Solid (TDS)	mg/l	1000	S	210	200	250	230	310	310	370	380
Cation Sum	meq/l			3.5	3.7	4.3	4.4	5.3	5.3	6.4	6.3
Anion Sum	meq/l			3.6	3.3	4.1	4	5.3	5.1	6.4	6.2
Iron	mg/l	0.3	S	ND	ND	0.02	0.027	ND	ND	0.063	0.062
Manganese	ug/l	50	S	23	30	16	15	31	ND	**87**	**89**
Turbidity	NTU	5	S	0.71	0.19	0.26	0.3	0.35	0.095	1.2	3.5
Alkalinity	mg/l			150	140	170	170	170	160	190	180
Boron	mg/l	1	N	0.1	0.1	0.12	0.11	0.12	0.11	0.13	0.12
Bicarbonate as HCO3	mg/l			180	160	210	210	210	200	230	220
Calcium	mg/l			21	22	34	35	45	44	52	52
Carbonate as CO3	mg/l			2.4	2.4	2.8	2.7	2.2	2.3	2.4	ND
Hardness (Total, as CaCO3)	mg/l			68	71	110	120	160	160	190	190
Chloride	mg/l	500	S	20	20	21	21	23	21	41	40
Fluoride	mg/l	2	P	0.23	0.24	0.19	0.19	0.28	0.28	0.38	0.38
Hydroxide as OH	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.45	0.46	0.73	0.73	0.74	0.75	0.83	0.66
Magnesium, Total, ICAP	None			4	4.2	7.1	7.4	12	12	15	15
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			2.7	2.7	2.4	2.5	2.9	2.9	3.5	3.5
Sodium, Total, ICAP	mg/l			48	50	44	46	46	46	57	57
Sulfate	mg/l	500	S	ND	ND	ND	ND	62	59	68	67
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND
Total Nitrate, Nitrite-N, Calc.	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			0.69	0.88	0.38	0.5	ND	0.41	0.36	0.49
Carbon Dioxide	mg/l			ND	ND	ND	ND	2	ND	2.4	3.2
General Physical Properties											
Apparent Color	ACU	15	S	10	5	3	3	ND	3	3	5
Lab pH	Units			8.3	8.4	8.3	8.3	8.2	8.3	8.2	8.1
Odor	TON	3	S	1	ND	2	2	2	ND	1	ND
pH of CaCO3 saturation(25C)	Units			7.9	7.9	7.6	7.6	7.5	7.5	7.4	7.4
pH of CaCO3 saturation(60C)	Units			7.4	7.4	7.1	7.1	7	7.1	6.9	6.9
Specific Conductance	umho/cm	1600	S	340	350	400	400	510	520	610	630
Metals											
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Barium, Total, ICAP/MS	ug/l	1000	P	17	63	38	35	66	ND	180	180
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds											
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770	N	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260	N	ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l	1000	N	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND		ND		ND		ND	

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

TABLE 3.2
WEST COAST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2009/2010

Constituents	Units	MCL	MCL Type	Carson #2									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				3/11/2010	8/24/2010	3/11/2010	8/24/2010	3/11/2010	8/24/2010	3/11/2010	8/24/2010	3/11/2010	8/24/2010
General Mineral Characteristics													
Total Dissolved Solid (TDS)	mg/l	1000	S	230	230	260	260	260	280	250	250	270	250
Cation Sum	meq/l			3.8	3.9	4.6	4.4	4.9	4.8	4.3	4.3	4.6	4.5
Anion Sum	meq/l			4.9	3.8	4.4	4.4	5.1	4.7	4.5	4.2	4.7	4.5
Iron	mg/l	0.3	S	ND	ND	ND	ND	ND	ND	ND	ND	0.059	0.054
Manganese	ug/l	50	S	2.7	7.4	7.6	32	17	16	11	9.8	**57**	**56**
Turbidity	NTU	5	S	0.8	1.8	0.21	0.15	0.34	0.11	0.36	0.16	0.76	0.75
Alkalinity	mg/l			220	160	190	190	190	180	190	180	190	180
Boron	mg/l	1	N	0.15	0.14	0.15	0.13	0.13	0.13	0.12	0.11	0.12	0.11
Bicarbonate as HCO3	mg/l			260	200	230	230	230	220	230	220	230	210
Calcium	mg/l			2.5	2.8	11	10	30	29	33	32	41	40
Carbonate as CO3	mg/l			9	7.3	4.2	4.8	3.3	2.9	3.1	2.3	2.8	2
Hardness (Total, as CaCO3)	mg/l			8	8.8	43	41	110	110	120	120	140	140
Chloride	mg/l	500	S	19	19	21	21	22	22	22	21	21	21
Fluoride	mg/l	2	P	0.32	0.31	0.23	0.25	0.27	0.27	0.23	0.23	0.28	0.28
Hydroxide as OH	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.099	0.05	0.41	0.44	0.73	0.67	0.75	0.6	0.8	0.64
Magnesium, Total, ICAP	None			0.41	0.45	3.7	3.6	9.5	9.6	10	11	9.1	9
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			1.7	1.8	3.9	3.8	4.3	4.2	3.7	3.7	3.1	3.1
Sodium, Total, ICAP	mg/l			83	84	84	81	57	56	40	39	39	39
Sulfate	mg/l	500	S	ND	ND	ND	0.66	27	25	ND	ND	18	18
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Nitrate, Nitrite-N, Calc.	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			1.7	1.7	1.1	1.3	0.51	0.78	0.42	0.62	ND	0.42
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	2.2	2	2.4
General Physical Properties													
Apparent Color	ACU	15	S	**30**	**35**	**20**	**20**	5	5	3	5	ND	3
Lab pH	Units			8.7	8.8	8.5	8.5	8.3	8.3	8.3	8.2	8.3	8.2
Odor	TON	3	S	2	1	**3**	2	2	1	**3**	2	2	2
pH of CaCO3 saturation(25C)	Units			8.6	8.7	8	8.1	7.6	7.7	7.6	7.6	7.5	7.5
pH of CaCO3 saturation(60C)	Units			8.2	8.3	7.6	7.6	7.2	7.2	7.1	7.2	7	7.1
Specific Conductance	umho/cm	1600	S	380	380	430	440	460	480	410	420	440	450
Metals													
Aluminum, Total, ICAP/MS	ug/l	1000	P	23	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium, Total, ICAP/MS	ug/l	1000	P	ND	5.7	6.2	27	14	14	16	15	21	21
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds													
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l	1000	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	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 (ND): Not Detected

TABLE 3.2
WEST COAST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2009/2010

Constituents	Units	MCL	MCL Type	Chandler #3			
				Zone 1		Zone 2	
				5/20/2010	9/9/2010	5/20/2010	9/9/2010
General Mineral Characteristics							
Total Dissolved Solid (TDS)	mg/l	1000	S	610	600	**1200**	**1100**
Cation Sum	meq/l			11	11	21	20
Anion Sum	meq/l			11	11	20	19
Iron	mg/l	0.3	S	0.2	0.16	ND	ND
Manganese	ug/l	50	S	**73**	**71**	14	32
Turbidity	NTU	5	S	1.3	0.54	4.6	**120**
Alkalinity	mg/l			360	350	500	460
Boron	mg/l	1	N	0.24	0.22	0.45	0.41
Bicarbonate as HCO3	mg/l			440	420	610	560
Calcium	mg/l			78	72	200	190
Carbonate as CO3	mg/l			2.1	3	2.5	2.1
Hardness (Total, as CaCO3)	mg/l			290	270	710	690
Chloride	mg/l	500	S	120	130	200	210
Fluoride	mg/l	2	P	0.26	0.24	0.21	0.19
Hydroxide as OH	mg/l			ND	ND	ND	ND
Langelier Index - 25 degree	None			0.95	1.1	1.4	1.3
Magnesium, Total, ICAP	None			23	21	52	53
Mercury	ug/l	2	P	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	**18**	**19**
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND
Potassium	mg/l			3.5	3.5	3.9	4.2
Sodium, Total, ICAP	mg/l			130	130	150	150
Sulfate	mg/l	500	S	14	11	150	130
Surfactants	mg/l	0.5	S	ND	ND	ND	ND
Total Nitrate, Nitrite-N, Calc.	mg/l	10	P	ND	ND	**18**	**19**
Total Organic Carbon	mg/l			1.3	1.5	0.92	1
Carbon Dioxide	mg/l			9.9	6.3	16	16
General Physical Properties							
Apparent Color	ACU	15	S	10	10	ND	10
Lab pH	Units			7.9	8	7.8	7.8
Odor	TON	3	S	1	ND	2	1
pH of CaCO3 saturation(25C)	Units			6.9	7	6.4	6.4
pH of CaCO3 saturation(60C)	Units			6.5	6.5	5.9	6
Specific Conductance	umho/cm	1600	S	1100	1000	**1900**	**1600**
Metals							
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	3.6	2.9	4.1	3
Barium, Total, ICAP/MS	ug/l	1000	P	37	30	100	95
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	3.8	1.2	11	3.1
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1300	P	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15	P	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	54	85
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	9.7	8.8
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND
Volatile Organic Compounds							
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l			ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND
Isopropylbenzene	ug/l	770	N	ND	ND	ND	ND
n-Propylbenzene	ug/l	260	N	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l	1000	N	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND		4.4	

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

TABLE 3.2
WEST COAST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2009/2010

Constituents	Units	MCL	MCL Type	Gardena #1							
				Zone 1		Zone 2		Zone 3		Zone 4	
				3/9/2010	8/30/2010	3/9/2010	8/30/2010	3/9/2010	8/30/2010	3/9/2010	8/30/2010
General Mineral Characteristics											
Total Dissolved Solid (TDS)	mg/l	1000	S	360	350	320	340	310	320	**2500**	**2900**
Cation Sum	meq/l			6.4	6.2	5.7	5.7	5.7	5.5	39	38
Anion Sum	meq/l			6.6	6.4	5.7	5.7	5.4	5.5	37	40
Iron	mg/l	0.3	S	0.25	0.29	ND	0.029	0.024	0.034	ND	ND
Manganese	ug/l	50	S	**79**	**85**	**58**	**65**	47	44	ND	ND
Turbidity	NTU	5	S	**7.3**	**21**	**8.2**	**41**	4.4	**11**	**10**	**14**
Alkalinity	mg/l			290	290	190	180	170	180	160	190
Boron	mg/l	1	N	0.35	0.35	0.13	0.14	0.12	0.13	0.14	0.15
Bicarbonate as HCO3	mg/l			360	350	240	220	200	210	200	230
Calcium	mg/l			25	22	56	55	56	54	430	430
Carbonate as CO3	mg/l			3.6	3.7	ND	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			99	90	190	190	190	180	1600	1600
Chloride	mg/l	500	S	20	18	25	25	22	22	**1100**	**1200**
Fluoride	mg/l	2	P	0.2	0.19	0.4	0.38	0.41	0.39	0.15	0.14
Hydroxide as OH	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.69	0.66	0.72	0.7	0.68	0.7	0.97	0.95
Magnesium, Total, ICAP	None			9	8.5	13	13	12	11	130	130
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	ND	ND	ND	ND	**19**	**20**
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			9.5	9.8	3.6	3.6	3.2	3.2	7.6	7.6
Sodium, Total, ICAP	mg/l			96	95	41	41	43	42	140	140
Sulfate	mg/l	500	S	5.8	1.1	53	61	67	66	41	42
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	0.085	ND
Total Nitrate, Nitrite-N, Calc.	mg/l	10	P	ND	ND	ND	ND	ND	ND	**19**	**20**
Total Organic Carbon	mg/l			2.6	2.5	ND	0.34	ND	0.34	ND	ND
Carbon Dioxide	mg/l			3.8	3.6	3.4	3.2	2.8	2.8	10	15
General Physical Properties											
Apparent Color	ACU	15	S	**30**	**35**	3	10	3	5	3	5
Lab pH	Units			8.2	8.2	8.1	8.1	8.1	8.1	7.5	7.4
Odor	TON	3	S	**4**	2	**3**	1	2	1	1	1
pH of CaCO3 saturation(25C)	Units			7.5	7.6	7.3	7.4	7.4	7.4	6.5	6.4
pH of CaCO3 saturation(60C)	Units			7.1	7.1	6.9	6.9	6.9	6.9	6.1	6
Specific Conductance	umho/cm	1600	S	620	600	520	550	540	530	**4100**	**4000**
Metals											
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	**210**	**250**	ND	ND	ND	ND	3.1	4.5
Barium, Total, ICAP/MS	ug/l	1000	P	20	20	60	56	35	33	570	510
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	4.6	ND	3.1	ND	3.4	ND	12	11
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND	12	ND
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	13	7.2
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	0.76
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds											
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770	N	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260	N	ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l	1000	N	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND		ND		ND		**12**	

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

TABLE 3.2
WEST COAST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2009/2010

Constituents	Units	MCL	MCL Type	Gardena #2									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				3/17/2010	8/30/2010	3/17/2010	8/30/2010	3/17/2010	8/30/2010	3/17/2010	8/30/2010	3/17/2010	8/30/2010
General Mineral Characteristics													
Total Dissolved Solid (TDS)	mg/l	1000	S	360	350	320	320	300	310	220	240	290	290
Cation Sum	meq/l			5.8	6.1	5.4	5.4	5.2	5.2	4.2	4.1	5.3	5.3
Anion Sum	meq/l			6	6.2	5.2	5.5	5.1	5.1	4.1	4.1	5.5	5.3
Iron	mg/l	0.3	S	0.18	0.028	0.036	0.041	0.048	0.055	0.029	0.036	0.051	0.046
Manganese	ug/l	50	S	29	24	36	34	**50**	48	44	43	**67**	**58**
Turbidity	NTU	5	S	**14**	0.68	0.11	0.09	0.12	0.26	0.11	0.8	**6.8**	**8**
Alkalinity	mg/l			280	290	180	190	180	180	170	180	210	200
Boron	mg/l	1	N	0.31	0.33	0.17	0.17	0.14	0.14	0.1	0.11	0.13	0.14
Bicarbonate as HCO3	mg/l			340	360	210	230	220	210	210	210	260	240
Calcium	mg/l			15	16	38	38	47	47	31	31	49	49
Carbonate as CO3	mg/l			4.1	5.6	ND	2.2	ND	ND	ND	2.2	2.3	2.6
Hardness (Total, as CaCO3)	mg/l			63	65	140	140	170	170	120	110	170	170
Chloride	mg/l	500	S	13	13	21	22	23	22	21	21	38	38
Fluoride	mg/l	2	P	0.24	0.24	0.27	0.26	0.38	0.37	0.28	0.27	0.64	0.29
Hydroxide as OH	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.55	0.69	0.57	0.66	0.58	0.7	0.49	0.58	0.79	0.85
Magnesium, Total, ICAP	None			6	6.2	12	12	11	12	9	8.9	11	11
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			5.3	5.5	5.7	5.8	3.6	3.7	3.1	3.2	3	3.1
Sodium, Total, ICAP	mg/l			100	110	56	55	42	42	41	41	44	44
Sulfate	mg/l	500	S	ND	ND	54	54	44	43	ND	ND	11	9.5
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Nitrate, Nitrite-N, Calc.	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			3	3.3	0.49	0.67	0.35	0.63	0.53	0.81	ND	0.42
Carbon Dioxide	mg/l			3	2.4	2.7	2.5	3.5	2.5	2.6	2.2	3	2.4
General Physical Properties													
Apparent Color	ACU	15	S	**20**	**30**	5	5	3	3	5	5	3	5
Lab pH	Units			8.3	8.4	8.1	8.2	8	8.1	8.1	8.2	8.1	8.2
Odor	TON	3	S	**3**	**3**	**3**	2	**3**	2	2	2	**3**	**3**
pH of CaCO3 saturation(25C)	Units			7.7	7.7	7.5	7.5	7.4	7.4	7.6	7.6	7.3	7.4
pH of CaCO3 saturation(60C)	Units			7.3	7.2	7.1	7.1	7	7	7.2	7.2	6.9	6.9
Specific Conductance	umho/cm	1600	S	600	600	540	530	510	500	390	400	470	510
Metals													
Aluminum, Total, ICAP/MS	ug/l	1000	P	120	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium, Total, ICAP/MS	ug/l	1000	P	22	19	19	18	22	21	50	47	77	72
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds													
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l	1000	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND		ND		**6**		ND		ND	

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

TABLE 3.2
WEST COAST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2009/2010

Constituents	Units	MCL	MCL Type	Hawthorne #1											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				5/10/2010	9/26/2010	5/10/2010	9/26/2010	5/10/2010	9/26/2010	5/10/2010	9/26/2010	5/10/2010	9/26/2010	5/10/2010	9/26/2010
General Mineral Characteristics															
Total Dissolved Solid (TDS)	mg/l	1000	S	920	900	820	820	640	630	460	450	980	970	**1600**	**1600**
Cation Sum	meq/l			15	15	14	14	12	11	8.2	8.1	16	17	28	27
Anion Sum	meq/l			16	15	14	14	12	12	8.1	7.9	16	16	27	28
Iron	mg/l	0.3	S	0.14	0.15	0.12	0.14	0.21	0.21	0.022	0.021	ND	0.027	0.027	0.064
Manganese	ug/l	50	S	12	13	**51**	**51**	**65**	**66**	36	35	**170**	**190**	**480**	**480**
Turbidity	NTU	5	S	0.91	0.96	2.3	0.81	0.4	0.81	1	1.3	0.46	0.46	1.9	3.3
Alkalinity	mg/l			720	700	650	650	520	510	330	320	220	220	330	320
Boron	mg/l	1	N	**1.4**	**1.4**	0.99	**1**	0.65	0.64	0.39	0.37	0.18	0.18	0.36	0.33
Bicarbonate as HCO3	mg/l			870	850	780	790	630	620	400	390	270	270	400	390
Calcium	mg/l			16	15	18	13	39	37	40	39	130	140	230	230
Carbonate as CO3	mg/l			7.5	8.4	9.3	10	5.4	7.1	3.4	4	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			90	92	90	69	200	190	170	170	530	550	850	830
Chloride	mg/l	500	S	46	50	49	43	43	47	52	53	340	350	460	480
Fluoride	mg/l	2	P	0.11	0.091	0.22	0.22	0.2	0.19	0.34	0.33	0.27	0.23	0.23	0.2
Hydroxide as OH	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.81	0.85	0.96	0.86	1.1	1.2	0.88	0.93	0.91	1.1	1.2	1.3
Magnesium, Total, ICAP	None			12	13	10	8.8	25	24	18	18	47	50	66	65
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.71	ND
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			19	20	14	14	15	14	9.4	9.4	7.5	8.1	6.8	6.9
Sodium, Total, ICAP	mg/l			290	290	270	280	170	160	100	100	120	130	250	240
Sulfate	mg/l	500	S	ND	ND	2.6	ND	ND	ND	ND	ND	76	100	360	380
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	0.054	ND	0.072	ND
Total Nitrate, Nitrite-N, Calc.	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.71	ND
Total Organic Carbon	mg/l			12	13	15	14	6.6	6.1	2.7	2.7	1	1.1	1.5	1.4
Carbon Dioxide	mg/l			11	9.2	7.1	6.6	7.8	5.7	5	4	7.2	5.2	14	10
General Physical Properties															
Apparent Color	ACU	15	S	**200**	**200**	**300**	**300**	**40**	**60**	**25**	**25**	5	5	3	5
Lab pH	Units			8.1	8.2	8.3	8.3	8.1	8.3	8.1	8.2	7.8	7.9	7.7	7.8
Odor	TON	3	S	**3**	1	**4**	1	2	1	**4**	2	2	2	**4**	**3**
pH of CaCO3 saturation(25C)	Units			7.3	7.3	7.3	7.4	7.1	7.1	7.2	7.3	6.9	6.9	6.5	6.5
pH of CaCO3 saturation(60C)	Units			6.9	6.9	6.9	7	6.6	6.6	6.8	6.8	6.4	6.4	6	6.1
Specific Conductance	umho/cm	1600	S	1400	1400	1300	1300	1100	1100	770	770	**1600**	**1700**	**2600**	**2600**
Metals															
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	24
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.3	2.1
Barium, Total, ICAP/MS	ug/l	1000	P	33	32	31	25	35	38	34	33	130	150	39	38
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	2.3	ND	2.4	1.4	1.2	ND	ND	ND	7.5	1.3	4.4	1.2
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1300	P	3	ND	3.3	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds															
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**29**	**27**
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.5	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.3	1
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.69	0.79
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	6.7	6.2
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3	2.6
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.4	1.2
Isopropylbenzene	ug/l	770	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l	1000	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.5
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND		ND		ND		ND		ND		1.8	

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

TABLE 3.2
WEST COAST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2009/2010

Constituents	Units	MCL	MCL Type	Inglewood #1							
				Zone 1		Zone 3		Zone 4		Zone 5	
				4/27/2010	9/21/2010	4/27/2010	9/21/2010	4/27/2010	9/21/2010	4/27/2010	9/21/2010
General Mineral Characteristics											
Total Dissolved Solid (TDS)	mg/l	1000	S	**2500**	**2500**	**1200**	**1200**	760	770	**1200**	**1300**
Cation Sum	meq/l			41	38	20	21	13	14	20	22
Anion Sum	meq/l			44	44	21	21	13	14	21	21
Iron	mg/l	0.3	S	0.083	0.12	**0.48**	**0.49**	**0.35**	**0.38**	ND	ND
Manganese	ug/l	50	S	18	15	**350**	**340**	**200**	**200**	2.2	ND
Turbidity	NTU	5	S	0.74	0.78	3.5	2.9	2.3	1.7	0.72	0.27
Alkalinity	mg/l			880	870	330	330	240	240	290	290
Boron	mg/l	1	N	**4.4**	**4.2**	0.44	0.43	0.2	0.19	0.24	0.27
Bicarbonate as HCO3	mg/l			1100	1100	400	400	300	290	350	350
Calcium	mg/l			140	130	140	150	100	110	180	180
Carbonate as CO3	mg/l			5.2	7.9	ND	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			550	530	600	610	440	460	700	730
Chloride	mg/l	500	S	**870**	**890**	400	410	240	260	390	400
Fluoride	mg/l	2	P	0.25	0.23	0.42	0.4	0.36	0.34	0.2	0.19
Hydroxide as OH	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			1.6	1.8	1.1	1	0.94	0.86	0.89	0.81
Magnesium, Total, ICAP	None			50	49	57	59	45	47	63	66
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	ND	ND	ND	ND	8.2	9
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			17	15	7.5	7.9	9.6	9.3	8.1	8.7
Sodium, Total, ICAP	mg/l			660	620	190	200	100	100	140	150
Sulfate	mg/l	500	S	76	78	130	140	89	98	150	170
Surfactants	mg/l	0.5	S	0.13	0.11	0.074	ND	ND	ND	0.054	ND
Total Nitrate, Nitrite-N, Calc.	mg/l	10	P	ND	ND	ND	ND	ND	ND	8.2	9
Total Organic Carbon	mg/l			41	41	1.1	1.1	0.56	0.69	0.66	0.75
Carbon Dioxide	mg/l			24	15	11	12	6.3	7.4	16	21
General Physical Properties											
Apparent Color	ACU	15	S	**150**	**130**	10	10	10	10	ND	**60**
Lab pH	Units			7.9	8.1	7.8	7.7	7.9	7.8	7.6	7.4
Odor	TON	3	S	**3**	**4**	1	1	2	1	2	ND
pH of CaCO3 saturation(25C)	Units			6.3	6.3	6.7	6.7	7	6.9	6.7	6.6
pH of CaCO3 saturation(60C)	Units			5.8	5.9	6.2	6.2	6.5	6.5	6.2	6.2
Specific Conductance	umho/cm	1600	S	**4400**	**4200**	**2100**	**2100**	1400	1400	**2100**	**2100**
Metals											
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	7.4	4.8	1.7	1.3	1.2	1.4	1.9	1.6
Barium, Total, ICAP/MS	ug/l	1000	P	270	260	46	46	110	120	230	230
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	ND	ND	4.5	2.5	3	ND	4	2.4
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	30	17	5.2	6.7	ND	ND	8.4	9.5
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds											
Trichloroethylene (TCE)	ug/l	5	P	0.93	0.91	ND	ND	ND	ND	0.9	0.91
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770	N	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260	N	ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l	1000	N	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND		ND		ND		ND	

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

TABLE 3.2
WEST COAST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2009/2010

Constituents	Units	MCL	MCL Type	Lomita #1									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				3/24/2010	8/25/2010	3/24/2010	8/25/2010	3/24/2010	8/25/2010	3/24/2010	8/25/2010	3/24/2010	8/25/2010
General Mineral Characteristics													
Total Dissolved Solid (TDS)	mg/l	1000	S	**2000**	**1700**	**1200**	**1400**	910	980	590	770	**1700**	**1400**
Cation Sum	meq/l			28	31	19	21	16	17	12	14	24	25
Anion Sum	meq/l			27	29	19	20	15	16	11	12	24	24
Iron	mg/l	0.3	S	0.16	0.16	0.1	ND	0.039	ND	0.035	ND	0.13	0.13
Manganese	ug/l	50	S	**480**	**500**	**230**	**260**	**150**	**180**	**110**	**130**	**340**	**340**
Turbidity	NTU	5	S	2.3	1.7	3.9	**9**	2.9	**6**	1.7	1.3	1.6	1.4
Alkalinity	mg/l			260	270	260	270	300	300	260	260	280	280
Boron	mg/l	1	N	0.68	0.74	0.47	0.5	0.39	0.39	0.38	0.42	0.55	0.56
Bicarbonate as HCO3	mg/l			320	330	320	320	360	370	320	310	350	340
Calcium	mg/l			230	270	140	160	100	120	77	96	190	200
Carbonate as CO3	mg/l			ND	ND	ND	ND	2.2	ND	2.4	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			840	950	520	600	380	430	280	350	710	740
Chloride	mg/l	500	S	**770**	**840**	460	**510**	310	330	180	240	**650**	**640**
Fluoride	mg/l	2	P	0.099	0.082	0.14	0.11	0.14	0.13	0.22	0.19	0.087	0.086
Hydroxide as OH	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			1.2	1.2	1.1	1.1	1.1	1.1	1	0.94	1.2	1.2
Magnesium, Total, ICAP	None			63	71	40	47	30	34	22	28	53	57
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			16	18	13	15	11	11	8.5	11	14	16
Sodium, Total, ICAP	mg/l			250	260	190	200	180	190	140	150	220	230
Sulfate	mg/l	500	S	4.7	8.2	22	30	25	28	13	17	24	26
Surfactants	mg/l	0.5	S	0.12	ND	0.067	0.053	ND	ND	ND	ND	ND	0.088
Total Nitrate, Nitrite-N, Calc.	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			0.89	2.2	1.2	0.98	2.4	0.92	2.4	2.1	1.4	0.81
Carbon Dioxide	mg/l			8.7	10	7	7.7	6.4	7.4	4.5	6.3	9.4	9
General Physical Properties													
Apparent Color	ACU	15	S	10	5	**15**	10	**15**	**15**	**30**	**30**	5	10
Lab pH	Units			7.8	7.7	7.9	7.8	8	7.9	8.1	7.9	7.8	7.8
Odor	TON	3	S	**4**	**3**	**4**	**4**	**4**	**4**	**4**	**3**	**3**	2
pH of CaCO3 saturation(25C)	Units			6.6	6.5	6.8	6.7	6.9	6.8	7.1	7	6.6	6.6
pH of CaCO3 saturation(60C)	Units			6.1	6.1	6.3	6.3	6.4	6.4	6.6	6.5	6.2	6.2
Specific Conductance	umho/cm	1600	S	**2900**	**3200**	**1900**	**2200**	**1600**	**1700**	1100	1300	**2500**	**2600**
Metals													
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	22	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	ND	2.5	2	1.7	1.6	2.9	1.3	1.1	2.5	2.1
Barium, Total, ICAP/MS	ug/l	1000	P	130	130	86	93	63	67	45	54	110	110
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	7.9	4.4	3.8	2.5	3	ND	3.2	1.8	4.5	2.9
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	ND	15	6.3	8.3	ND	ND	ND	ND	9	10
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds													
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l	1000	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	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 (ND): Not Detected

TABLE 3.2
WEST COAST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2009/2010

Constituents	Units	MCL	MCL Type	Long Beach #3									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				3/10/2010	8/25/2010	3/10/2010	8/25/2010	3/10/2010	8/25/2010	3/10/2010	8/25/2010	3/10/2010	8/25/2010
General Mineral Characteristics													
Total Dissolved Solid (TDS)	mg/l	1000	S	450	450	220	230	240	230	**1800**	**1700**	**2000**	**1900**
Cation Sum	meq/l			7.8	8.3	3.8	3.9	4.2	4.1	26	27	30	31
Anion Sum	meq/l			8	8.2	4	3.9	4.1	4.1	27	26	30	30
Iron	mg/l	0.3	S	0.04	0.047	ND	ND	0.022	0.024	0.15	0.17	0.27	0.29
Manganese	ug/l	50	S	13	13	7.8	8.3	11	11	**270**	**260**	**380**	**400**
Turbidity	NTU	5	S	0.75	0.89	0.3	0.16	0.29	0.3	1.3	0.81	2.3	1.6
Alkalinity	mg/l			380	380	150	140	160	160	150	130	140	140
Boron	mg/l	1	N	0.37	0.39	0.13	0.14	0.15	0.15	0.12	0.12	0.12	0.12
Bicarbonate as HCO3	mg/l			450	460	180	170	200	200	180	160	170	170
Calcium	mg/l			11	12	17	17	21	20	310	300	370	380
Carbonate as CO3	mg/l			10	7.1	2.7	2.5	2.5	2.1	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			41	44	54	55	66	64	1100	1100	1200	1300
Chloride	mg/l	500	S	18	17	20	19	31	31	**800**	**780**	**900**	**920**
Fluoride	mg/l	2	P	0.51	0.51	0.35	0.35	0.3	0.3	0.14	0.14	0.14	0.14
Hydroxide as OH	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.79	0.66	0.4	0.37	0.45	0.37	1.3	1	1.3	1.2
Magnesium, Total, ICAP	None			3.3	3.6	2.9	3	3.5	3.6	79	82	85	91
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			3.3	3.5	2	2.3	2.5	2.8	12	13	9.6	11
Sodium, Total, ICAP	mg/l			160	170	62	64	64	64	110	110	110	110
Sulfate	mg/l	500	S	ND	ND	24	23	ND	ND	67	63	70	66
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	0.11	ND	0.05	ND
Total Nitrate, Nitrite-N, Calc.	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			7.6	7.9	1.2	1.4	2.4	2.8	0.54	0.61	0.64	0.59
Carbon Dioxide	mg/l			2.1	3.2	ND	ND	ND	ND	3.2	4	3.3	4.6
General Physical Properties													
Apparent Color	ACU	15	S	**80**	**100**	**15**	**15**	**25**	**25**	5	5	5	10
Lab pH	Units			8.5	8.4	8.4	8.4	8.3	8.2	8	7.8	7.9	7.8
Odor	TON	3	S	**3**	2	2	1	1	ND	2	ND	2	1
pH of CaCO3 saturation(25C)	Units			7.7	7.7	8	8	7.8	7.9	6.7	6.8	6.7	6.6
pH of CaCO3 saturation(60C)	Units			7.3	7.3	7.5	7.5	7.4	7.4	6.2	6.3	6.2	6.2
Specific Conductance	umho/cm	1600	S	770	760	380	380	400	400	**2900**	**2800**	**3300**	**3300**
Metals													
Aluminum, Total, ICAP/MS	ug/l	1000	P	27	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	ND	ND	ND	ND	ND	ND	2.6	3	3.3	3.8
Barium, Total, ICAP/MS	ug/l	1000	P	9	8.7	14	15	7.7	7.9	100	97	170	180
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	1.9	ND	ND	ND	ND	ND	2.6	3.6	3	4
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	14	11	16	13
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds													
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l	1000	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND		ND		ND		4		ND	

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

TABLE 3.2
WEST COAST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2009/2010

Constituents	Units	MCL	MCL Type	Long Beach #8					
				Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6
				9/15/2010	9/16/2010	9/16/2010	9/17/2010	9/17/2010	9/15/2010
General Mineral Characteristics									
Total Dissolved Solid (TDS)	mg/l	1000	S	690	620	900	**1300**	**1000**	**1200**
Cation Sum	meq/l			11	11	15	23	17	18
Anion Sum	meq/l			11	10	15	23	18	18
Iron	mg/l	0.3	S	0.18	0.18	0.2	0.18	**0.38**	**0.92**
Manganese	ug/l	50	S	19	27	30	25	**130**	**620**
Turbidity	NTU	5	S	1	1.3	1.3	0.89	**57**	**8.5**
Alkalinity	mg/l			530	460	630	400	300	210
Boron	mg/l	1	N	**1.1**	0.79	**1.3**	**1**	0.54	0.2
Bicarbonate as HCO3	mg/l			650	560	760	480	370	250
Calcium	mg/l			7.1	9.2	11	46	59	110
Carbonate as CO3	mg/l			11	5.3	13	4	2.4	ND
Hardness (Total, as CaCO3)	mg/l			26	36	48	250	260	440
Chloride	mg/l	500	S	24	36	87	**550**	410	480
Fluoride	mg/l	2	P	0.82	0.83	0.58	0.21	0.17	0.44
Hydroxide as OH	mg/l			ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.62	0.43	0.88	1	0.9	0.64
Magnesium, Total, ICAP	None			2.1	3.2	5.1	33	26	40
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	ND	ND	ND	ND
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND
Potassium	mg/l			ND	4	7	11	8.9	6.4
Sodium, Total, ICAP	mg/l			250	220	320	400	280	200
Sulfate	mg/l	500	S	ND	ND	ND	ND	ND	22
Surfactants	mg/l	0.5	S	ND	ND	ND	0.056	ND	ND
Total Nitrate, Nitrite-N, Calc.	mg/l	10	P	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			21	19	34	19	14	0.97
Carbon Dioxide	mg/l			4.2	6.3	4.7	6.1	5.9	9.8
General Physical Properties									
Apparent Color	ACU	15	S	**750**	**400**	**400**	**75**	**75**	**20**
Lab pH	Units			8.4	8.2	8.4	8.1	8	7.6
Odor	TON	3	S	2	2	2	2	**4**	2
pH of CaCO3 saturation(25C)	Units			7.8	7.7	7.5	7.1	7.1	7
pH of CaCO3 saturation(60C)	Units			7.3	7.3	7.1	6.7	6.7	6.5
Specific Conductance	umho/cm	1600	S	1000	940	1400	**2500**	**1900**	**1900**
Metals									
Aluminum, Total, ICAP/MS	ug/l	1000	P	21	22	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	1.7	1.1	1.8	2.3	3.3	4.4
Barium, Total, ICAP/MS	ug/l	1000	P	9.2	8.6	14	23	32	72
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	1.2	1.3	1.6	ND	ND	2.5
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1300	P	3.3	4.4	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15	P	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	7.8	5.7	ND
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	0.97	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds									
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l			ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770	N	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260	N	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l	1000	N	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	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 (ND): Not Detected

TABLE 3.2
WEST COAST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2009/2010

Constituents	Units	MCL	MCL Type	PM-3 Madrid							
				Zone 1		Zone 2		Zone 3		Zone 4	
				3/22/2010	9/7/2010	3/22/2010	9/7/2010	3/22/2010	9/7/2010	3/22/2010	9/7/2010
General Mineral Characteristics											
Total Dissolved Solid (TDS)	mg/l	1000	S	410	380	330	310	660	650	920	940
Cation Sum	meq/l			6.8	7.3	5.8	5.9	10	11	14	16
Anion Sum	meq/l			7.5	7.1	6	5.7	11	11	15	15
Iron	mg/l	0.3	S	0.043	0.055	0.12	0.13	0.091	0.1	**0.32**	**0.34**
Manganese	ug/l	50	S	27	30	43	41	**56**	**56**	**340**	**330**
Turbidity	NTU	5	S	1	1.2	0.47	0.35	0.95	**21**	3.5	2.7
Alkalinity	mg/l			340	320	200	200	200	200	200	200
Boron	mg/l	1	N	0.34	0.36	0.12	0.12	0.2	0.22	0.38	0.42
Bicarbonate as HCO3	mg/l			410	390	250	240	240	240	240	240
Calcium	mg/l			12	13	46	46	89	93	110	130
Carbonate as CO3	mg/l			7.6	5.7	2.9	ND	2.3	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			68	75	170	170	320	340	430	470
Chloride	mg/l	500	S	24	24	67	61	230	240	340	360
Fluoride	mg/l	2	P	0.3	0.28	0.36	0.35	0.32	0.3	0.29	0.28
Hydroxide as OH	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.7	0.61	0.87	0.64	1.1	0.77	1	0.75
Magnesium, Total, ICAP	None			9.2	10	13	13	25	26	34	37
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			12	13	3.2	3.3	5	5.2	6.2	6.5
Sodium, Total, ICAP	mg/l			120	130	54	55	87	93	130	150
Sulfate	mg/l	500	S	ND	ND	ND	ND	3	2.6	49	54
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND
Total Nitrate, Nitrite-N, Calc.	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			3	3.1	0.51	0.57	0.72	0.84	0.88	0.96
Carbon Dioxide	mg/l			2.4	2.9	2.2	3.6	2.7	5.3	3.6	8
General Physical Properties											
Apparent Color	ACU	15	S	**30**	**40**	5	5	5	10	10	10
Lab pH	Units			8.5	8.4	8.3	8	8.2	7.9	8	7.7
Odor	TON	3	S	**4**	1	**3**	ND	**3**	**3**	**4**	1
pH of CaCO3 saturation(25C)	Units			7.7	7.7	7.4	7.4	7.1	7.1	7	7
pH of CaCO3 saturation(60C)	Units			7.3	7.3	6.9	7	6.7	6.7	6.6	6.5
Specific Conductance	umho/cm	1600	S	670	670	590	570	1100	1100	1500	**1600**
Metals											
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	ND	ND	ND	ND	1	ND	5.2	4.8
Barium, Total, ICAP/MS	ug/l	1000	P	21	21	20	19	62	61	79	79
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	ND	ND	1.1	ND	3.1	2	3.6	2.3
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds											
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	1.4	0.72
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	5.5	2.8	**19**	**7.3**
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	0.83	0.8	1.5	1.3
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	0.87	0.57
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770	N	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260	N	ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l	1000	N	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND		ND		ND		ND	

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

TABLE 3.2
WEST COAST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2009/2010

Constituents	Units	MCL	MCL Type	PM-4 Mariner							
				Zone 1		Zone 2		Zone 3		Zone 4	
				3/28/2010	8/29/2010	3/28/2010	8/29/2010	3/28/2010	8/29/2010	3/28/2010	8/29/2010
General Mineral Characteristics											
Total Dissolved Solid (TDS)	mg/l	1000	S	340	350	**12000**	**15000**	630	670	660	640
Cation Sum	meq/l			6.3	6	210	210	10	11	11	11
Anion Sum	meq/l			6	6	220	210	10	11	11	10
Iron	mg/l	0.3	S	0.072	0.064	0.21	0.22	0.025	0.023	0.15	0.16
Manganese	ug/l	50	S	35	32	**1000**	**1000**	31	32	**80**	**81**
Turbidity	NTU	5	S	0.085	0.09	1.7	1.5	1.1	1.5	0.39	0.54
Alkalinity	mg/l			260	260	160	160	170	200	200	200
Boron	mg/l	1	N	0.2	0.18	0.28	0.26	0.3	0.27	0.26	0.25
Bicarbonate as HCO3	mg/l			310	320	190	190	210	240	240	250
Calcium	mg/l			29	28	1500	1500	36	37	77	74
Carbonate as CO3	mg/l			3.8	3.1	ND	ND	2.4	2.7	2	ND
Hardness (Total, as CaCO3)	mg/l			120	120	5800	5600	130	130	280	270
Chloride	mg/l	500	S	28	27	**7100**	**6600**	110	110	120	110
Fluoride	mg/l	2	P	0.37	0.33	0.1	0.087	0.73	0.71	0.3	0.27
Hydroxide as OH	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.78	0.67	1.4	1.4	0.68	0.74	0.93	0.9
Magnesium, Total, ICAP	None			12	12	480	450	9.4	9.9	20	20
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			7.3	6.9	61	61	6.2	6.2	6.4	6.2
Sodium, Total, ICAP	mg/l			83	81	2200	2200	180	190	120	120
Sulfate	mg/l	500	S	ND	ND	**800**	**860**	170	170	160	150
Surfactants	mg/l	0.5	S	ND	ND	0.052	ND	ND	ND	ND	ND
Total Nitrate, Nitrite-N, Calc.	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			1.2	1.7	1.2	1.1	2	1.9	0.94	1
Carbon Dioxide	mg/l			2.8	3.5	13	13	ND	2.2	3	3.3
General Physical Properties											
Apparent Color	ACU	15	S	10	10	5	5	**30**	**30**	5	10
Lab pH	Units			8.3	8.2	7.4	7.4	8.3	8.2	8.1	8.1
Odor	TON	3	S	2	1	2	2	**4**	1	**4**	2
pH of CaCO3 saturation(25C)	Units			7.5	7.5	6	6	7.6	7.5	7.2	7.2
pH of CaCO3 saturation(60C)	Units			7	7.1	5.5	5.5	7.1	7.1	6.7	6.7
Specific Conductance	umho/cm	1600	S	600	570	**19000**	**19000**	1000	1100	1100	1000
Metals											
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	ND	ND	**21**	**28**	ND	ND	ND	ND
Barium, Total, ICAP/MS	ug/l	1000	P	22	19	220	210	67	67	51	47
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	ND	ND	11	15	1.6	3.5	1.3	1.3
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1300	P	ND	ND	4.4	3.6	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	11	12	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	36	39	ND	ND	ND	ND
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds											
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770	N	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260	N	ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l	1000	N	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	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 (ND): Not Detected

TABLE 3.2
WEST COAST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2009/2010

Constituents	Units	MCL	MCL Type	PM-5 Columbia Park											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				6/17/2010	9/13/2010	6/17/2010	9/13/2010	6/17/2010	9/13/2010	6/17/2010	9/13/2010	6/17/2010	9/13/2010	6/17/2010	9/13/2010
General Mineral Characteristics															
Total Dissolved Solid (TDS)	mg/l	1000	S	**1000**	**1000**	**1100**	**1100**	510	520	370	380	**3700**	**3800**	800	810
Cation Sum	meq/l			16	16	20	19	8.2	8.9	6.7	7.2	55	53	13	14
Anion Sum	meq/l			17	17	19	19	9.3	9.2	6.8	6.9	55	55	13	13
Iron	mg/l	0.3	S	0.13	0.16	0.26	0.29	0.031	0.046	0.061	0.025	0.1	0.12	ND	ND
Manganese	ug/l	50	S	**55**	**70**	24	37	36	34	19	17	**380**	**480**	**140**	**130**
Turbidity	NTU	5	S	1.6	0.49	2.3	1	0.68	1.3	0.51	1.7	0.76	0.71	0.66	1.2
Alkalinity	mg/l			700	700	930	920	420	420	290	300	170	170	220	230
Boron	mg/l	1	N	**2.4**	**2.6**	**1.9**	**1.9**	0.32	0.36	0.18	0.21	0.2	0.22	0.18	0.2
Bicarbonate as HCO3	mg/l			860	850	1100	1100	510	510	360	360	210	210	270	280
Calcium	mg/l			14	13	7.8	8.3	12	13	22	24	500	460	97	110
Carbonate as CO3	mg/l			8.2	8.6	14	13	7.3	7.2	3.9	4.1	ND	ND	2.2	2.3
Hardness (Total, as CaCO3)	mg/l			63	59	42	42	55	59	100	110	1700	1700	340	370
Chloride	mg/l	500	S	95	100	16	14	30	30	31	31	**1600**	**1600**	180	180
Fluoride	mg/l	2	P	0.56	0.64	0.29	0.32	0.25	0.27	0.3	0.32	0.12	0.13	0.28	0.3
Hydroxide as OH	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.81	0.8	0.78	0.78	0.67	0.7	0.68	0.73	1.3	1.2	1.1	1.1
Magnesium, Total, ICAP	None			6.6	6.2	5.5	5.3	6.4	6.7	11	12	110	120	24	25
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			13	12	11	10	12	14	9.8	11	15	17	6.1	6.4
Sodium, Total, ICAP	mg/l			340	340	380	400	160	170	100	110	480	440	140	140
Sulfate	mg/l	500	S	3.1	5.9	2.5	2.1	1.5	1.3	2.9	1.5	310	300	180	170
Surfactants	mg/l	0.5	S	ND	0.064	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Nitrate, Nitrite-N, Calc.	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			38	38	32	36	6.3	6.2	2.9	2.9	0.7	0.66	1.1	1.2
Carbon Dioxide	mg/l			9.5	9	9.7	10	3.8	3.8	3.5	3.4	7.1	7.2	3.6	3.6
General Physical Properties															
Apparent Color	ACU	15	S	**300**	**300**	**600**	**750**	**50**	**60**	**20**	**25**	ND	5	3	5
Lab pH	Units			8.2	8.2	8.3	8.3	8.3	8.3	8.2	8.2	7.7	7.7	8.1	8.1
Odor	TON	3	S	**40**	2	**8**	2	2	1	2	1	2	1	1	1
pH of CaCO3 saturation(25C)	Units			7.4	7.4	7.5	7.5	7.7	7.6	7.5	7.5	6.4	6.5	7	7
pH of CaCO3 saturation(60C)	Units			6.9	6.9	7.1	7	7.2	7.2	7.1	7.1	6	6	6.6	6.5
Specific Conductance	umho/cm	1600	S	**1600**	**1600**	**1700**	**1700**	860	860	650	640	**5400**	**5400**	1300	1300
Metals															
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	ND	ND	ND	ND	ND	47	ND	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	ND	1.7	3	5.1	ND	ND	1.5	1.4	5.3	7.8	3.4	2.1
Barium, Total, ICAP/MS	ug/l	1000	P	55	84	16	25	22	23	15	14	200	190	170	160
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	ND	1.1	2.5	3.1	ND	ND	ND	ND	8.6	4.8	2.1	1.3
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1300	P	ND	ND	ND	2.3	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	5.2	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	6.1	ND	ND	ND	ND	ND	ND	ND	11	8.5	ND	ND
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds															
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l	1000	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	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 (ND): Not Detected

TABLE 3.2
WEST COAST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2009/2010

Constituents	Units	MCL	MCL Type	PM-6 Madrona Marsh											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				5/6/2010	9/1/2010	5/6/2010	9/1/2010	5/6/2010	9/1/2010	5/6/2010	9/1/2010	5/6/2010	9/1/2010	5/6/2010	9/1/2010
General Mineral Characteristics															
Total Dissolved Solid (TDS)	mg/l	1000	S	**1300**	**1600**	**4500**	**4600**	**14000**	**13000**	390	390	**4000**	**4100**	960	950
Cation Sum	meq/l			21	28	68	72	160	180	6.5	6.4	57	57	15	15
Anion Sum	meq/l			22	28	71	72	190	190	6.4	6.4	59	60	15	16
Iron	mg/l	0.3	S	0.057	0.06	0.09	0.1	0.1	0.16	0.051	0.05	**1.2**	**1.3**	0.21	0.25
Manganese	ug/l	50	S	**70**	**71**	**160**	**190**	**380**	**350**	41	**62**	**990**	**1200**	**220**	**230**
Turbidity	NTU	5	S	**6.3**	**20**	0.26	1	**23**	**20**	0.2	0.5	**12**	**12**	0.91	1.4
Alkalinity	mg/l			500	490	140	140	120	170	250	240	210	200	190	190
Boron	mg/l	1	N	0.8	0.8	0.56	0.55	0.29	0.29	0.27	0.27	0.23	0.22	0.19	0.18
Bicarbonate as HCO3	mg/l			610	590	170	170	140	200	300	300	250	250	230	240
Calcium	mg/l			62	97	170	170	1100	1100	17	17	530	510	120	120
Carbonate as CO3	mg/l			5.5	5.1	ND	ND	ND	ND	3.2	3.6	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			350	550	790	770	4900	5800	85	85	1900	1900	450	440
Chloride	mg/l	500	S	440	**650**	**2400**		**6500**	**6700**	52	52	**1800**	**1900**	310	320
Fluoride	mg/l	2	P	0.49	0.47	0.085	0.081	0.097	0.096	0.55	0.55	0.14	0.13	0.22	0.22
Hydroxide as OH	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			1.3	1.4	0.95	0.91	1.7	2	0.49	0.53	1.2	1.3	0.91	0.95
Magnesium, Total, ICAP	None			49	75	87	85	780	770	10	10	150	150	35	35
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			12	15	43	44	95	98	6	5.7	22	21	7.4	7.3
Sodium, Total, ICAP	mg/l			310	380	1300	1300	1400	1500	110	100	420	430	140	140
Sulfate	mg/l	500	S	2.8	7.2	ND		45	6.6	0.5	ND	130	150	130	140
Surfactants	mg/l	0.5	S	0.052	ND	ND	ND	ND	ND	ND	ND	0.054	ND	ND	ND
Total Nitrate, Nitrite-N, Calc.	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			7	7.2	1	1.1	1.6	1.6	2.4	2.3	1	0.99	1.4	1.3
Carbon Dioxide	mg/l			7.3	7.3	3.2	3.4	2.9	2.3	2.9	2.6	13	9.6	4.8	4.4
General Physical Properties															
Apparent Color	ACU	15	S	**150**	**200**	10	10	**30**	**100**	**20**	**25**	**25**	**20**	5	10
Lab pH	Units			8.1	8.1	7.9	7.9	7.9	8.2	8.2	8.3	7.5	7.6	7.9	7.9
Odor	TON	3	S	**3**	**3**	**3**	1	**200**	**4**	2	1	1	1	1	1
pH of CaCO3 saturation(25C)	Units			6.9	6.7	7	7	6.3	6.1	7.7	7.7	6.3	6.3	7	7
pH of CaCO3 saturation(60C)	Units			6.4	6.2	6.5	6.6	5.8	5.7	7.3	7.3	5.9	5.9	6.5	6.5
Specific Conductance	umho/cm	1600	S	**2300**	**2800**	**7700**	**7600**	**18000**	**17000**	630	640	**5800**	**5800**	**1600**	**1600**
Metals															
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	1.5	ND	**12**	6.5	**26**	**17**	1.5	ND	**13**	7.4	4.4	3.2
Barium, Total, ICAP/MS	ug/l	1000	P	170	270	440	490	**2200**	**2500**	15	18	190	210	33	35
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	2.5	1.1	27	4.1	35	11	3.1	ND	13	3	4.4	1.2
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1300	P	4.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	5.6	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	6.2	ND	18	14	**120**	**64**	ND	ND	13	9.8	ND	ND
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds															
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l	1000	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	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 (ND): Not Detected

TABLE 3.2
WEST COAST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2009/2010

Constituents	Units	MCL	MCL Type	Westchester #1									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				3/25/2010	9/13/2010	3/25/2010	9/13/2010	3/25/2010	9/13/2010	3/25/2010	9/13/2010	3/25/2010	9/13/2010
General Mineral Characteristics													
Total Dissolved Solid (TDS)	mg/l	1000	S	900	990	740	730	600	600	550	590	560	560
Cation Sum	meq/l			16	18	13	13	11	11	10	11	9.6	9.7
Anion Sum	meq/l			16	17	13	13	11	11	10	8.4	9.7	9.8
Iron	mg/l	0.3	S	0.19	0.22	0.12	0.13	0.19	0.2	0.12	0.13	0.28	0.28
Manganese	ug/l	50	S	**110**	**95**	**54**	48	**130**	**130**	**120**	**110**	**160**	**160**
Turbidity	NTU	5	S	0.44	0.44	0.66	0.7	0.31	0.33	0.35	0.45	1	0.76
Alkalinity	mg/l			630	690	550	540	460	460	350	360	300	310
Boron	mg/l	1	N	**1.1**	**1.3**	0.84	0.85	0.47	0.49	0.25	0.25	0.23	0.23
Bicarbonate as HCO3	mg/l			760	830	670	650	560	560	430	430	370	370
Calcium	mg/l			60	56	31	31	45	46	71	71	66	67
Carbonate as CO3	mg/l			6.4	6.4	6.5	5.9	4.4	3.9	3.5	3.2	2.5	2.4
Hardness (Total, as CaCO3)	mg/l			260	240	150	150	200	200	300	300	270	280
Chloride	mg/l	500	S	95	100	67	68	61	61	64	25	67	67
Fluoride	mg/l	2	P	0.27	0.25	0.27	0.25	0.26	0.24	0.26	0.25	0.32	0.31
Hydroxide as OH	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			1.3	1.3	1	1	1	0.99	1.1	1.1	0.95	0.95
Magnesium, Total, ICAP	None			25	25	17	18	21	21	29	29	26	27
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			12	13	15	15	12	12	9	9.3	7.1	7.2
Sodium, Total, ICAP	mg/l			240	290	220	220	150	150	97	99	91	91
Sulfate	mg/l	500	S	38	31	ND	ND	ND	0.85	73	29	81	82
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Nitrate, Nitrite-N, Calc.	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			18	23	8.1	8.6	3.7	3.8	1.6	1.7	1.3	1.4
Carbon Dioxide	mg/l			9.7	12	7.4	7.8	7.6	8.5	5.8	6.3	5.9	6.1
General Physical Properties													
Apparent Color	ACU	15	S	**300**	**400**	**100**	**80**	**25**	**35**	10	10	**15**	**15**
Lab pH	Units			8.1	8.1	8.2	8.1	8.1	8	8.1	8.1	8	8
Odor	TON	3	S	**4**	**3**	**3**	2	**4**	**3**	2	2	2	**3**
pH of CaCO3 saturation(25C)	Units			6.8	6.8	7.1	7.1	7	7	7	7	7.1	7
pH of CaCO3 saturation(60C)	Units			6.3	6.3	6.7	6.7	6.6	6.6	6.5	6.5	6.6	6.6
Specific Conductance	umho/cm	1600	S	1500	**1600**	1200	1200	1100	1000	1000	980	940	920
Metals													
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	1.1	ND	ND	ND	1.1	ND	ND	ND	1.3	1.2
Barium, Total, ICAP/MS	ug/l	1000	P	93	97	130	140	71	68	74	72	61	60
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	1.3	1.5	ND	ND	1.7	ND	1.1	ND	1.1	ND
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1300	P	2.4	ND	2.1	ND	ND	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds													
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l	1000	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	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 (ND): Not Detected

TABLE 3.2
WEST COAST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2009/2010

Constituents	Units	MCL	MCL Type	Wilmington #1									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				2/22/2010	8/18/2010	2/22/2010	8/18/2010	2/22/2010	8/18/2010	2/22/2010	8/18/2010	2/22/2010	8/18/2010
General Mineral Characteristics													
Total Dissolved Solid (TDS)	mg/l	1000	S	650	620	**1900**	**2100**	**1800**	**2100**	**1200**	**1100**	**1900**	**1000**
Cation Sum	meq/l			11	10	31	29	29	31	20	18	31	18
Anion Sum	meq/l			11	11	30	30	29	33	19	18	30	17
Iron	mg/l	0.3	S	ND	ND	0.051	0.052	ND	ND	ND	ND	0.051	0.25
Manganese	ug/l	50	S	24	25	30	30	ND	10	16	16	29	**81**
Turbidity	NTU	5	S	0.36	0.13	0.46	0.32	0.52	0.21	0.2	0.12	0.24	**6.6**
Alkalinity	mg/l			150	140	140	150	140	130	150	150	150	180
Boron	mg/l	1	N	0.21	0.21	0.2	0.21	0.25	0.24	0.24	0.24	0.2	0.2
Bicarbonate as HCO3	mg/l			190	170	170	180	170	160	190	190	180	220
Calcium	mg/l			62	61	250	230	170	190	95	91	250	140
Carbonate as CO3	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			240	240	870	810	620	680	380	370	890	540
Chloride	mg/l	500	S	270	270	**860**	**870**	**840**	**990**	400	370	**870**	350
Fluoride	mg/l	2	P	0.12	0.14	0.055	0.057	0.071	0.072	0.1	0.11	0.056	0.12
Hydroxide as OH	mg/l			ND		ND		ND		ND		ND	
Langelier Index - 25 degree	None			0.8	0.57	1.2	0.89	0.98	0.75	0.92	0.7	1.2	0.84
Magnesium, Total, ICAP	None			20	20	60	56	46	50	34	33	61	47
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			7.9	7.8	9.7	9.3	9.2	9.4	7.3	6.9	9.9	7.6
Sodium, Total, ICAP	mg/l			130	130	280	290	370	380	270	250	280	150
Sulfate	mg/l	500	S	ND	ND	110	110	110	110	220	220	120	180
Surfactants	mg/l	0.5	S	0.39	0.46	**0.55**	0.34	0.46	0.42	0.22	0.16	**0.56**	0.49
Total Nitrate, Nitrite-N, Calc.	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			3.2	3.2	3.2	1.8	2	1.8	2.2	2.2	1.9	5.2
Carbon Dioxide	mg/l			2		2.9		3.5		2.4		3.2	
General Physical Properties													
Apparent Color	ACU	15	S	3	5	3	5	5	10	5	5	3	5
Lab pH	Units			8.2	8	8	7.7	8	7.7	8.1	7.9	8	7.8
Odor	TON	3	S	**8**	**100**	**8**	**4**	**8**	**100**	**17**	**67**	**17**	**100**
pH of CaCO3 saturation(25C)	Units			7.4	7.4	6.8	6.8	7	7	7.2	7.2	6.8	7
pH of CaCO3 saturation(60C)	Units			6.9	7	6.4	6.4	6.5	6.5	6.7	6.8	6.3	6.5
Specific Conductance	umho/cm	1600	S	1100	1100	**3100**	**3100**	**3000**	**3300**	**2000**	**1900**	**3100**	**1800**
Metals													
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	ND	ND	ND	2.7	ND	ND	ND	ND	ND	ND
Barium, Total, ICAP/MS	ug/l	1000	P	12	12	18	18	26	29	40	40	18	110
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	ND	2.5	4.4	4.7	ND	6.7	2.6	3.1	4.2	ND
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	10	ND
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds													
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l	1000	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	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 (ND): Not Detected

TABLE 3.2
WEST COAST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2009/2010

Constituents	Units	MCL	MCL Type	Wilmington #2									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				2/23/2010	8/17/2010	2/23/2010	8/17/2010	2/23/2010	8/17/2010	2/23/2010	8/17/2010	2/23/2010	8/17/2010
General Mineral Characteristics													
Total Dissolved Solid (TDS)	mg/l	1000	S	510	490	**1500**	**1500**	380	400	880	870	**5700**	**5500**
Cation Sum	meq/l			8.5	8.6	25	26	7.1	7	24	14	91	88
Anion Sum	meq/l			8.7	8.8	26	26	6.6	6.9	13	15	93	89
Iron	mg/l	0.3	S	0.069	0.087	0.068	0.072	ND	ND	0.068	ND	ND	ND
Manganese	ug/l	50	S	4.2	ND	12	11	9.1	8.7	13	ND	**83**	**70**
Turbidity	NTU	5	S	0.45	0.31	0.46	0.28	0.12	0.24	**14**	3.2	0.7	0.096
Alkalinity	mg/l			370	370	490	500	160	160	270	280	170	180
Boron	mg/l	1	N	0.64	0.65	**1.8**	**1.8**	0.19	0.16	**1.8**	0.58	0.6	0.54
Bicarbonate as HCO3	mg/l			450	450	600	600	190	190	330	340	210	220
Calcium	mg/l			3.1	3.2	31	32	28	28	31	35	320	300
Carbonate as CO3	mg/l			10	11	5.1	5	ND	ND	2.3	2.2	ND	ND
Hardness (Total, as CaCO3)	mg/l			17	18	170	170	110	110	170	150	1400	1300
Chloride	mg/l	500	S	43	45	**570**	**550**	120	130	270	310	**2900**	**2700**
Fluoride	mg/l	2	P	0.97	0.93	0.34	0.33	0.25	0.23	0.69	0.69	0.18	0.18
Hydroxide as OH	mg/l			ND		ND		ND		ND		ND	
Langelier Index - 25 degree	None			0.25	0.31	0.94	0.94	0.43	0.41	0.58	0.64	1	1.1
Magnesium, Total, ICAP	None			2.2	2.4	22	23	10	11	22	16	140	140
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, Nitrogen by IC	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			4.6	4.9	12	12	5.2	5.1	11	6.5	24	21
Sodium, Total, ICAP	mg/l			190	190	490	510	110	110	470	250	1400	1400
Sulfate	mg/l	500	S	ND	ND	ND	ND	ND	ND	1.3	4.8	420	390
Surfactants	mg/l	0.5	S	ND	ND	0.061	ND	ND	ND	ND	ND	0.12	ND
Total Nitrate, Nitrite-N, Calc.	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			17	11	18	18	2	2	9.4	2	1.3	1.2
Carbon Dioxide	mg/l			2.1		7.4		2.2		5.2		7.3	
General Physical Properties													
Apparent Color	ACU	15	S	**300**	**300**	**150**	**150**	**20**	**15**	**80**	**50**	**15**	**20**
Lab pH	Units			8.6	8.6	8.1	8.1	8.2	8.1	8	8	7.7	7.7
Odor	TON	3	S	2	**3**	2	**3**	**4**	**3**	**17**	**8**	**8**	**4**
pH of CaCO3 saturation(25C)	Units			8.3	8.3	7.2	7.2	7.7	7.7	7.4	7.4	6.6	6.6
pH of CaCO3 saturation(60C)	Units			7.9	7.8	6.7	6.7	7.3	7.3	7	6.9	6.2	6.2
Specific Conductance	umho/cm	1600	S	820	830	**2600**	**2600**	730	750	**1600**	**1600**	**9100**	**8800**
Metals													
Aluminum, Total, ICAP/MS	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	10	P	ND	ND	3.8	ND	ND	ND	4.2	ND	5.4	6.9
Barium, Total, ICAP/MS	ug/l	1000	P	4.9	ND	48	46	11	11	51	27	71	69
Beryllium, Total, ICAP/MS	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	P	2.1	ND	ND	5.9	ND	1.3	ND	ND	14	7.2
Cadmium, Total, ICAP/MS	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1300	P	ND	ND	4.5	ND	ND	ND	4.6	ND	ND	ND
Lead, Total, ICAP/MS	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	11	ND
Selenium, Total, ICAP/MS	ug/l	50	P	ND	ND	14	ND	ND	ND	15	ND	27	14
Silver, Total, ICAP/MS	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds													
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	770	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ug/l	260	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l	1000	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	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 (ND): Not Detected

TABLE 3.3
QUALITY OF REPLENISHMENT WATER

Constituent	Units	Regulatory Limit	IMPORTED WATER			RECYCLED WATER							LOCAL WATER
			Treated Colorado River & State Project Water [A]	Untreated Colorado River Water [B]	Untreated State Project Water [C]	West Basin MWD WRP [D]	Terminal Island Treatment Plant [E]	WRD Vander Lans WRP [F]	LACSD Pomona WRP [G]	LACSD San Jose Creek East WRP [G]	LACSD San Jose Creek West WRP [G]	LACSD Whittier Narrows WRP [G]	Stormwater [H]
			2009	2009	2009	2009	2009	2009	2009-2010	2009-2010	2009-2010	2009-2010	2009-2010
Arsenic	µg/L	MCL = 10	2.2 / 3.1	2.6	3.9	ND	0.23	ND	0.295	ND	0.993	1.26	2.20
Chloride	mg/L	SMCL = 500	90 [I] / 77 [I]	90 [I]	75 [I]	70 [J]	84 [K]	62.5 [L]	126	150	108	116	42.7
Iron	µg/L	SMCL = 300	ND / ND	ND	ND	ND	7.7	ND	26	74	38	25	3,923
Manganese	µg/L	SMCL = 50	ND / ND	ND	ND	ND	3.0	ND	5.47	27.3	12.4	4.65	NA
Nitrate (as N)	mg/L	MCL = 10	0.4 / 0.8	0.3	0.8	0.5 [J]	0.95	0.75 [L]	6.69	3.54	7.77	6.76	2.2
Perchlorate	µg/L	MCL = 6	ND / ND	1.4	ND	ND	ND	ND	NA	NA	NA	NA	NA
Tetrachloroethylene (PCE)	µg/L	MCL = 5	ND / ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	NA
Trichloroethylene (TCE)	µg/L	MCL = 5	ND / ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	NA
Total Dissolved Solids (TDS)	mg/L	SMCL = 1,000	559 [I] / 316 [I]	623 [I]	303 [I]	444 [J]	314 [K]	389 [L]	536	618	527	579	271
Total Organic Carbon (TOC)	mg/L	None	2.3 / 1.7	2.67 [I]	1.88 [I]	0.20	0.49	0.48	6.38	6.16	4.90	5.46	10.8
Alkalinity	mg/L	None	112 [I] / 87 [I]	128 [I]	84 [I]	47.8	NA	NA	169	168	158	166	72
Boron	µg/L	NL = 1,000	130 / 200	130	210	210 [J]	462 [K]	210 [L]	270	330	400	260	NA
Chromium, Total	µg/L	MCL = 50	ND / ND	ND	ND	0.5	0.58	ND	0.98	0.56	1.0	1.7	5.82
Chromium VI	µg/L	None	0.13 / 0.50	ND	0.49	NA	NA	NA	ND	ND	ND	ND	ND
Copper, Total	µg/L	SMCL = 1,000	ND / ND	ND	ND	2.9	2.8	ND	5.13	2.80	5.00	4.75	19.9
1,4-Dioxane	ug/L	NL = 1	NA	NA	NA	ND	ND	ND	NA	NA	NA	NA	NA
Hardness	mg/L	None	253 [I] / 119 [I]	310 [I]	119 [I]	31	45.2	4	203	232	197	204	103
Lead, Total	µg/L	AL = 15	ND / ND	ND	ND	ND	1.02	ND	0.43	0.045	ND	0.32	9.2
Methyl tertiary butyl ether (MTBE)	µg/L	MCL = 5	ND / ND	ND	NA	ND	ND	ND	NA	NA	NA	NA	ND
Nitrite (as N)	mg/L	MCL = 1	ND / ND	ND	ND	0.13 [J]	ND	0.022 [L]	0.088	0.013	0.00083	0.056	0.02
n-Nitrosodimethylamne (NDMA)	ng/L	NL = 10	ND / 3	NA	NA	4.3	11.2	7	129	156	101	322	ND
pH	pH Units	None	7.9 / 8.2	8.2	7.9	7.6	7.4	7.98	7.4	7	7.1	7.4	7.32
Selenium	µg/L	MCL = 50	ND / ND	ND	ND	ND	0.8	ND	ND	ND	ND	ND	1.88
Specific Conductance	µS/cm	SMCL = 1,600	923 [I] / 564 [I]	1,010 [I]	542 [I]	59.1	337	104	NA	NA	NA	NA	406
Sulfate	mg/L	SMCL = 500	209 [I] / 61 [I]	244 [I]	56 [I]	146 [J]	83 [K]	134 [L]	63.5	112	83.2	99.2	55.4
Turbidity	NTU	SMCL = 5	0.05 [I] / 0.04 [I]	1.27 [I]	1.08 [I]	0.07	0.05	0.10	0.8	0.7	0.6	0.84	58

See footnotes on following page.

TABLE 3.3
QUALITY OF REPLENISHMENT WATER

Notes:

A = Used at the seawater intrusion barriers: generally, Weymouth Plant effluent (to the Dominguez Gap and Alamitos Barriers) / Jensen Plant effluent (to the West Coast Barrier)
B = Used at the Montebello Forebay spreading grounds (Lake Mathews)
C = Used at the Montebello Forebay spreading grounds (Castaic Lake)
D = Effluent of treatment plant before blending with treated Colorado River/State Project water; used at the West Coast Basin Barrier
E = Effluent of treatment plant before blending with treated Colorado River/State Project water; used at the Dominguez Gap Barrier
F = Effluent of treatment plant before blending with treated Colorado River/State Project water; used at the Alamitos Barrier
G = Effluent of treatment plant; used at the Montebello Forebay spreading grounds
H = Average of water samples collected from LACDPW San Gabriel River Monitoring Station S14 from October 2009 through January 2010 (4 storm events total)
I = Average concentration for Water Year October 2009 through September 2010
J = Average concentration in blended water (treatment plant effluent and treated Colorado River/State Project water), which is delivered to the West Coast Basin Barrier
K = Average concentration in blended water (treatment plant effluent and treated Colorado River/State Project water), which is delivered to the Dominguez Gap Barrier
L = Average concentration in blended water (treatment plant effluent and treated Colorado River/State Project water); directly used at the Alamitos Barrier

NA = Not Available/Analyzed
ND = Not Detected
mg/L = milligrams per liter
µg/L = micrograms per liter
NTU = Nephelometric Turbidity Units
µS/cm = microSiemen per centimeter or micromho per centimeter (µmho/cm)

MCL = Maximum Contaminant Level
SMCL = Secondary Maximum Contaminant Level
AL = Action Level
NL = Notification Level

WRP = Water Reclamation Plant

Sources of Data:

2009 Water Quality Report to MWD Member Agencies (Metropolitan Water District of Southern California, March 2010)
October 2009 - September 2010 Annual Monitoring Report, Montebello Forebay Groundwater Recharge (County Sanitation Districts of Los Angeles County [LACSD], December 2010)
2009 Annual Report, West Coast Basin Barrier Project, Edward C. Little Water Recycling Facility (West Basin Municipal Water District [West Basin MWD], March 2010)
2009-2010 Stormwater Monitoring Report, Los Angeles County (Los Angeles County Department of Public Works [LACDPW], August 2010)
2009 Annual Summary Report, Harbor Water Recycling/Dominguez Gap Barrier Project (Los Angeles Department of Water and Power [LADWP], March 2010)
2009 Annual Monitoring Report, Alamitos Barrier Recycled Water Project, Leo J. Vander Lans Water Treatment Facility (Water Replenishment District of Southern California [WRD], April 2010)

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	1, 2, 3, 4, 5, 6			
Cerritos #2	1, 2, 3, 4, 5, 6			
Commerce #1	2, 3, 4, 5, 6			
Compton #1	2, 3, 4, 5	1		
Compton #2	3, 4, 5	1		
Downey #1	2, 3, 4, 5, 6	1		
Huntington Park #1	1, 2, 3, 4			
Inglewood #2		1, 3	2	
Lakewood #1	6	1, 2, 3, 4, 5		
La Mirada #1		1, 2, 3, 4		5
Long Beach #1	5, 6	1, 2, 3, 4		
Long Beach #2	4, 5, 6	1, 2, 3		
Long Beach #6		1, 2, 3, 4, 5, 6		
Los Angeles #1	1, 2, 3, 4, 5			
Los Angeles #2				
Montebello #1	3, 4, 5	1, 2		
Norwalk #1	4, 5	1, 2, 3		
Norwalk #2	3, 4, 5, 6	1, 2		
Rio Hondo #1	1, 2, 3, 4, 5, 6,			
Pico #1	2, 3, 4			1
Pico #2	1, 2, 3, 4, 5, 6			
South Gate #1	1, 2, 3, 4, 5			
Willowbrook #1	2, 3, 4	1		
Whittier #1	1, 2, 3, 4, 5			
Whittier #2	1, 3, 4, 5, 6	2		
WEST COAST BASIN				
Carson #1	3, 4	1, 2		
Carson #2	1, 2, 3, 4, 5			
Gardena #1	2, 3, 4			1
Gardena #2	2, 3, 4, 5	1		
Hawthorne #1	5, 6	1, 2, 3, 4		
Inglewood #1	3, 4, 5			1
Lomita #1				1, 2, 3, 4, 5, 6
Long Beach #3		1, 2, 3	4, 5	
PM-3 Madrid	3, 4	2		1
PM-4 Mariner			2, 3, 4	1
Westchester #1		1, 2, 3, 4, 5		
Wilmington #1			1, 2, 3, 4, 5	
Wilmington #2		3	4, 5	

FIGURES

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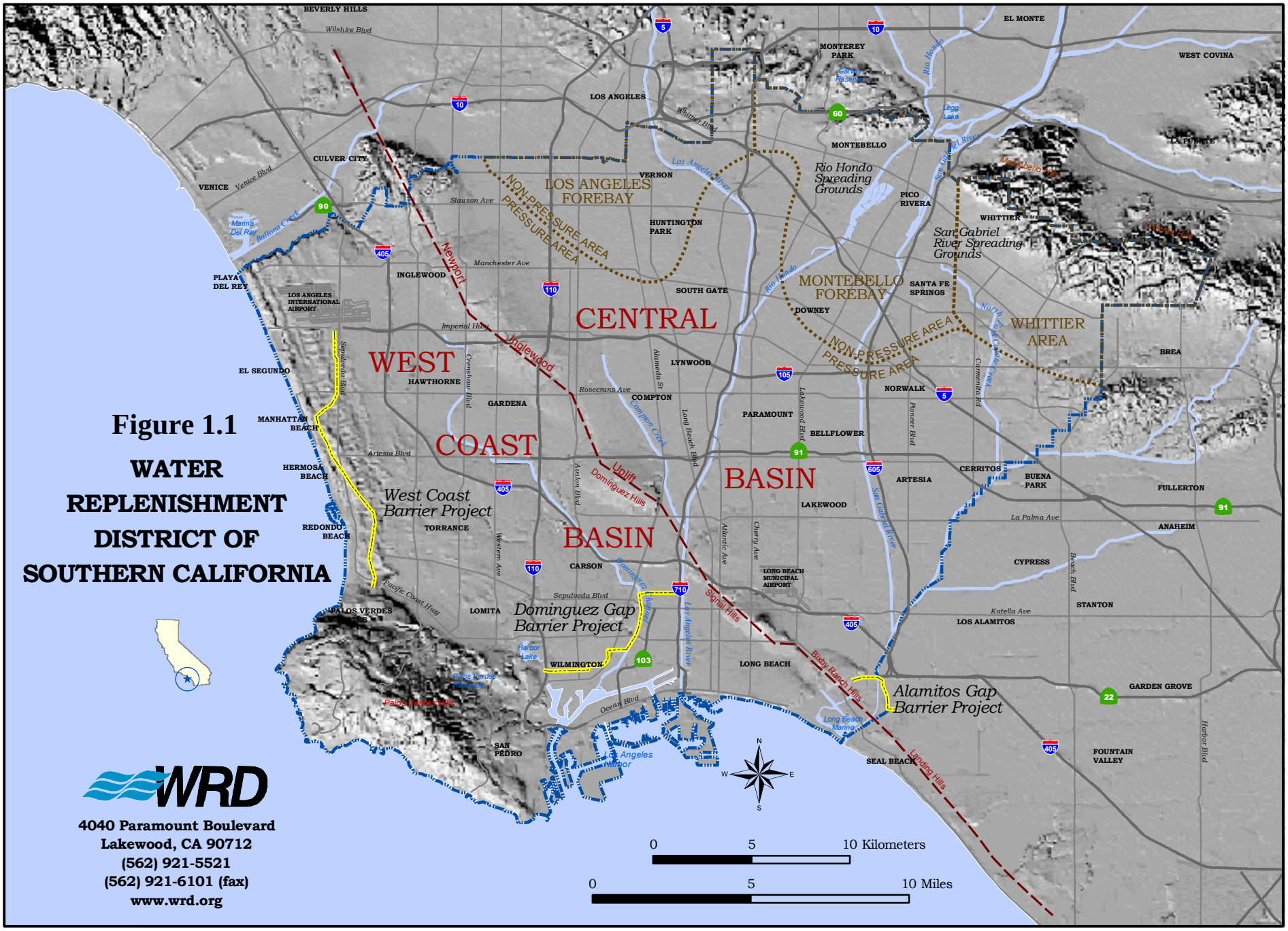


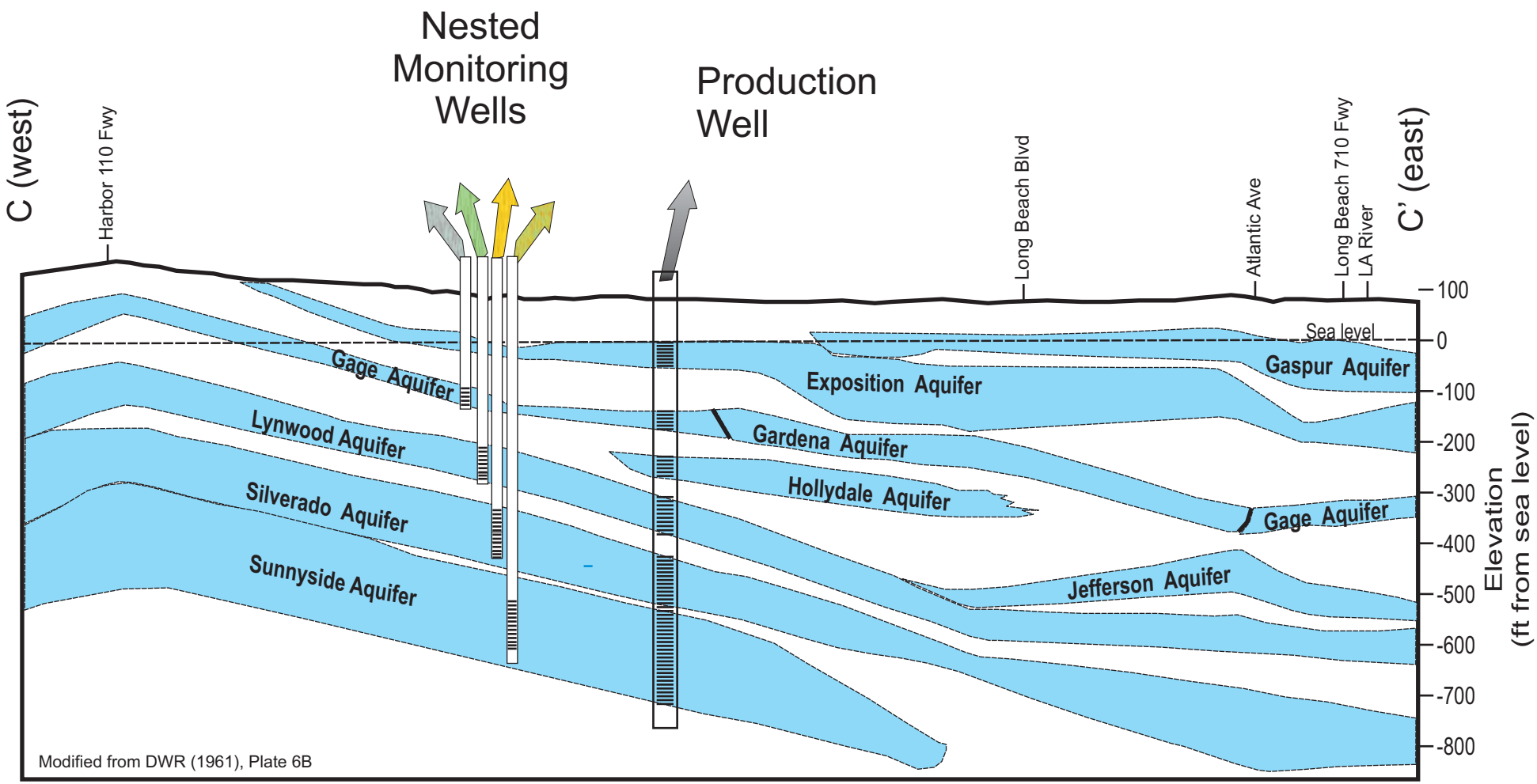
Figure 1.1

WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA

WRD

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



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

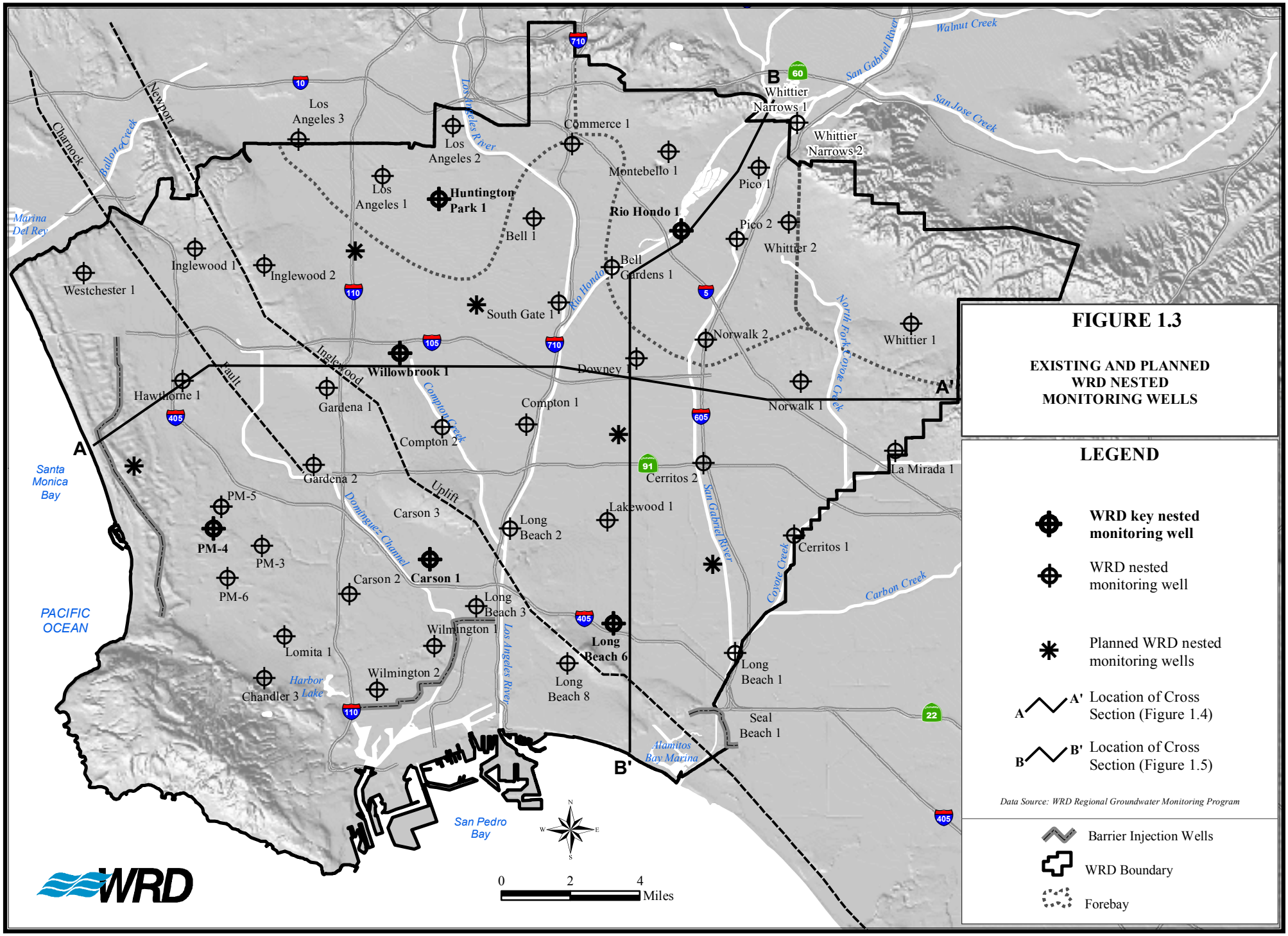
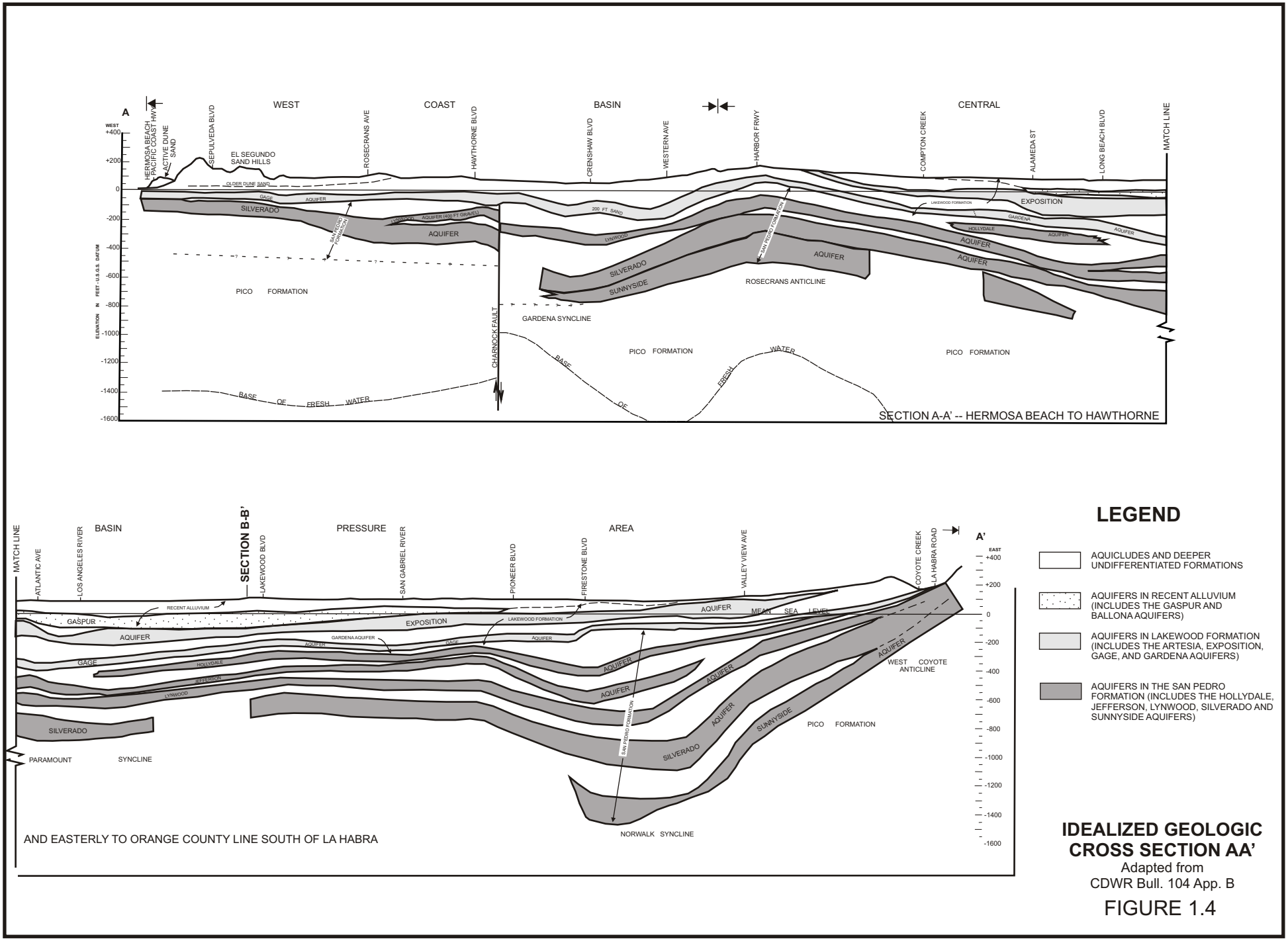


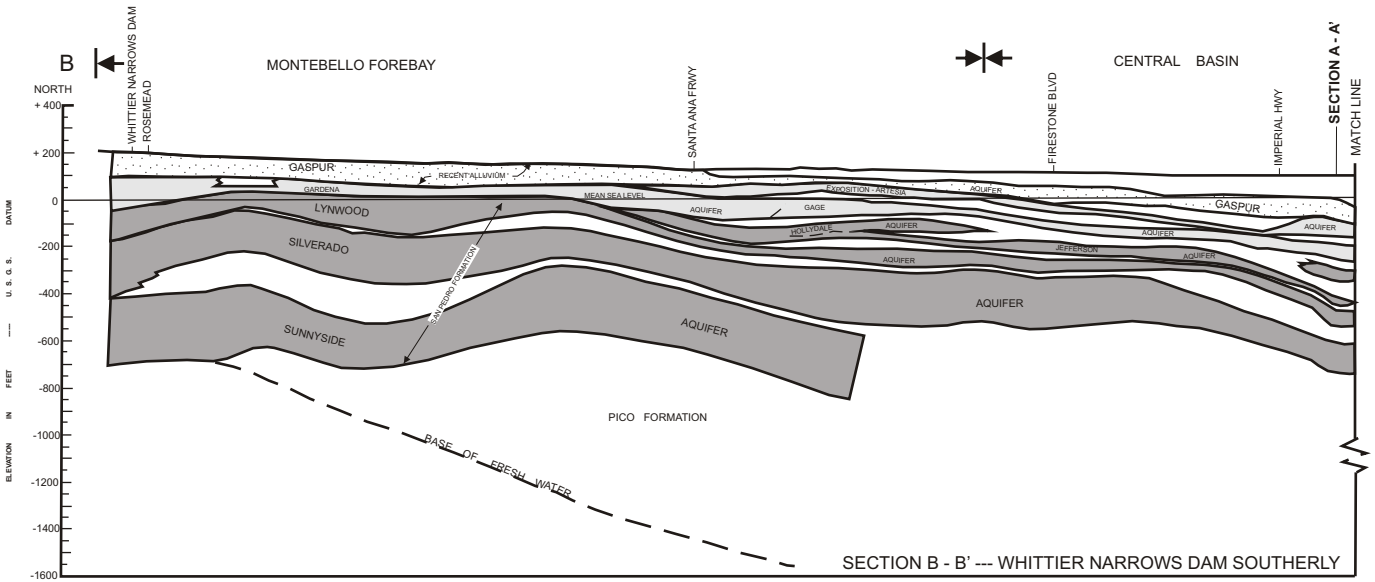
FIGURE 1.3
EXISTING AND PLANNED WRD NESTED MONITORING WELLS
LEGEND
WRD key nested monitoring well
WRD nested monitoring well
Planned WRD nested monitoring wells
A A' Location of Cross Section (Figure 1.4)
B B' Location of Cross Section (Figure 1.5)
Data Source: WRD Regional Groundwater Monitoring Program
Barrier Injection Wells
WRD Boundary
Forebay
Los Angeles 3
Los Angeles 2
Los Angeles 1
Huntington Park 1
Commerce 1
Montebello 1
Rio Hondo 1
Bell 1
Bell Gardens 1
Whittier Narrows 1
Whittier Narrows 2
Pico 1
Pico 2
Whittier 2
Whittier 1
Westchester 1
Inglewood 1
Inglewood 2
South Gate 1
Norwalk 2
Norwalk 1
Downey 1
Willowbrook 1
Hawthorne 1
Gardena 1
Compton 1
Compton 2
Gardena 2
Cerritos 2
La Mirada 1
Cerritos 1
PM-5
PM-4
PM-3
PM-6
Carson 3
Carson 1
Carson 2
Long Beach 2
Lakewood 1
Long Beach 3
Long Beach 6
Long Beach 8
Long Beach 1
Wilmington 1
Wilmington 2
Lomita 1
Chandler 3
Seal Beach 1
Harbor Lake
Alamitos Bay Marina
Santa Monica Bay
PACIFIC OCEAN
San Pedro Bay
Marina Del Rey
Ballona Creek
Charnock
Newport
Los Angeles River
Rio Hondo
Compton Creek
Dominguez Channel
San Gabriel River
Walnut Creek
San Jose Creek
North Fork Coyote Creek
Coyote Creek
Carbon Creek
Inglewood Fault
Uplift
A
A'
B
B'
0 2 4 Miles
WRD



IDEALIZED GEOLOGIC CROSS SECTION AA'

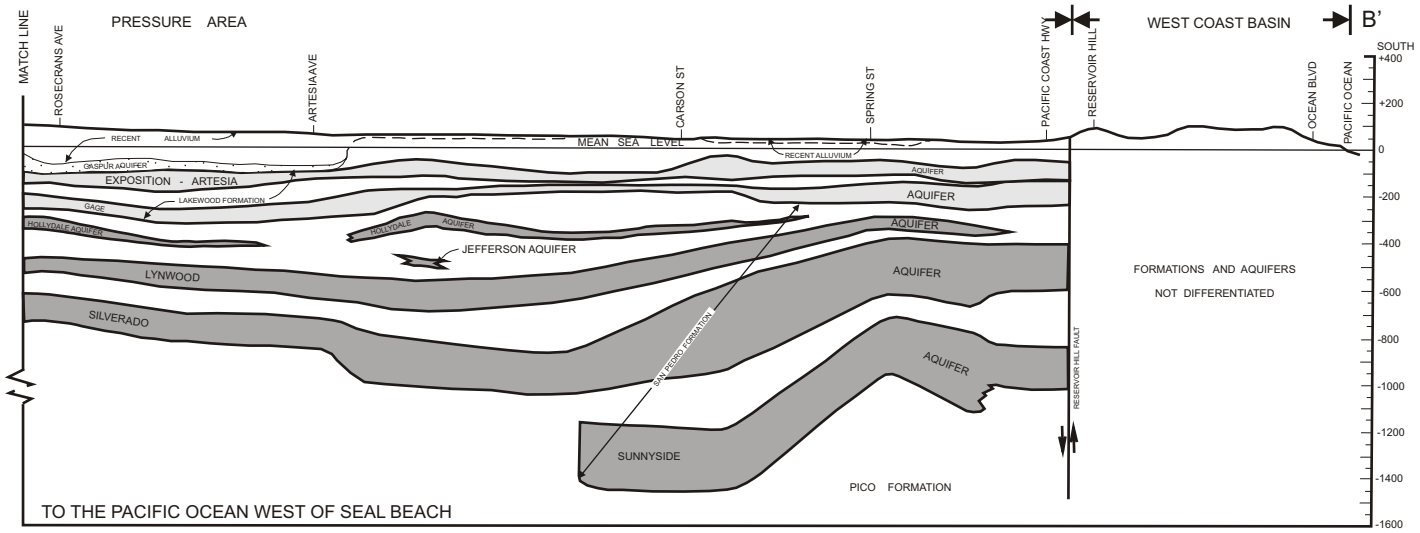
Adapted from CDWR Bull. 104 App. B

FIGURE 1.4



LEGEND

- AQUICLUDES 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 FORMATIO (INCLUDES THE HOLLYDALE, JEFFERSON, LYNWOOD, SILVERADO AND SUNNYSIDE AQUIFERS)



IDEALIZED GEOLOGIC CROSS SECTION BB'

Adapted from
CDWR Bull. 104 App. B

FIGURE 1.5

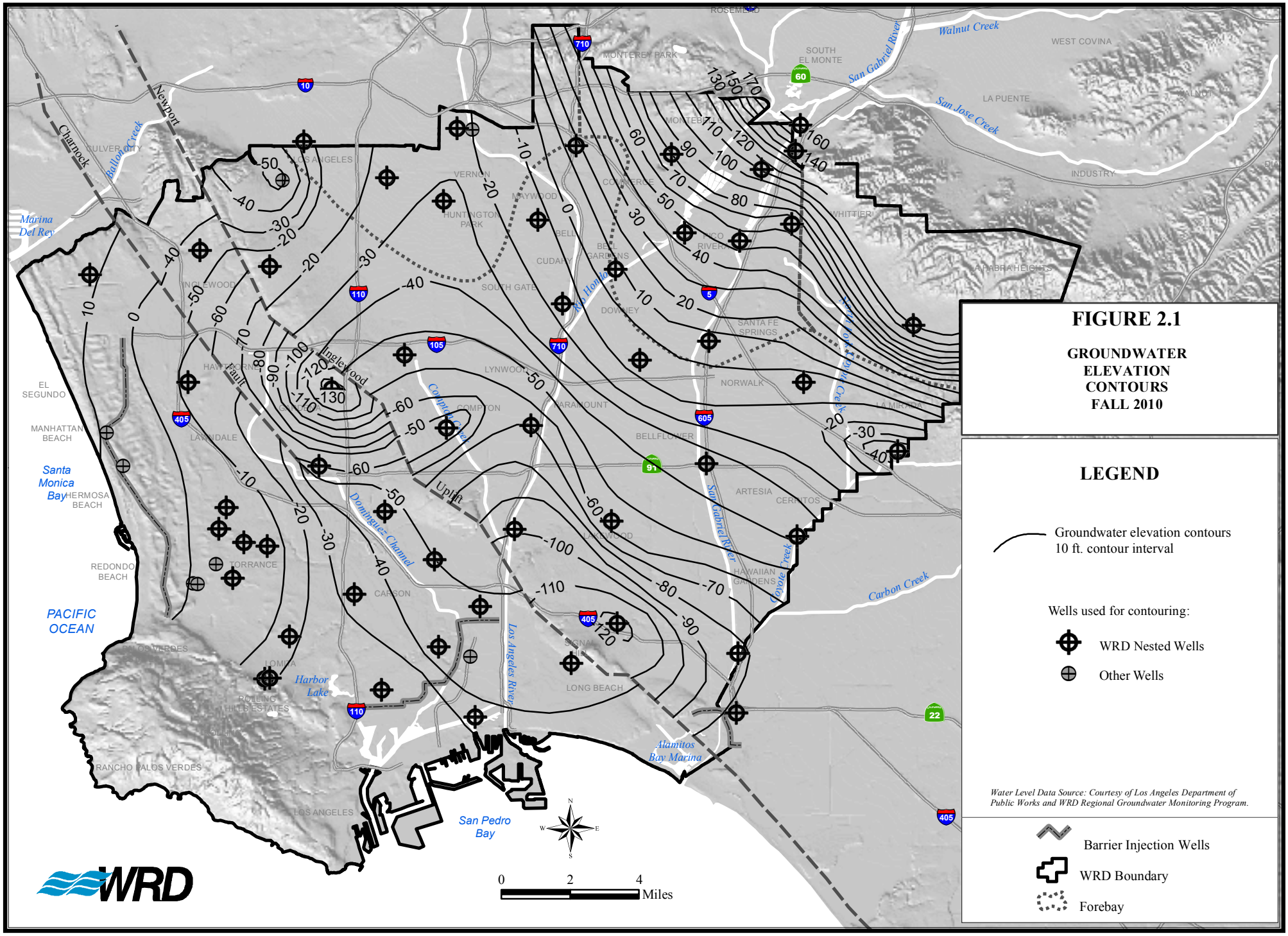


FIGURE 2.1
GROUNDWATER ELEVATION CONTOURS FALL 2010
LEGEND
Groundwater elevation contours 10 ft. contour interval
Wells used for contouring:
WRD Nested Wells
Other Wells
Water Level Data Source: Courtesy of Los Angeles Department of Public Works and WRD Regional Groundwater Monitoring Program.
Barrier Injection Wells
WRD Boundary
Forebay
0 2 4 Miles
PACIFIC OCEAN
Santa Monica Bay
San Pedro Bay
Harbor Lake
Alamitos Bay Marina
Marina Del Rey
Ballona Creek
Walnut Creek
San Gabriel River
San Jose Creek
Carbon Creek
Coyote Creek
Los Angeles River
Dominguez Channel
Rio Hondo
Compton Creek
Charnock
Newport
Inglewood
Uplift
Fault
EL SEGUNDO
MANHATTAN BEACH
HERMOSA BEACH
REDONDO BEACH
RANCHO PALOS VERDES
LOS ANGELES
INGLEWOOD
HAWTHORNE
LAWNDALE
TORRANCE
CARSON
LOMITA
ROLLING HILLS ESTATES
LONG BEACH
SIGNAL HILL
COMPTON
LYNWOOD
PARAMOUNT
BELLFLOWER
NORWALK
SANTA FE SPRINGS
DOWNEY
SOUTH GATE
CUDAHY
BELL GARDENS
COMMERCE
MONTEBELLO
MONTEREY PARK
ROSEMEAD
SOUTH EL MONTE
WEST COVINA
LA PUENTE
INDUSTRY
WHITTIER
LA MIRADA
ARTESIA
CERRITOS
HAWAIIAN GARDENS
VERNON
HUNTINGTON PARK
MAYWOOD
CULVER CITY
10
110
105
710
405
605
91
60
5
22

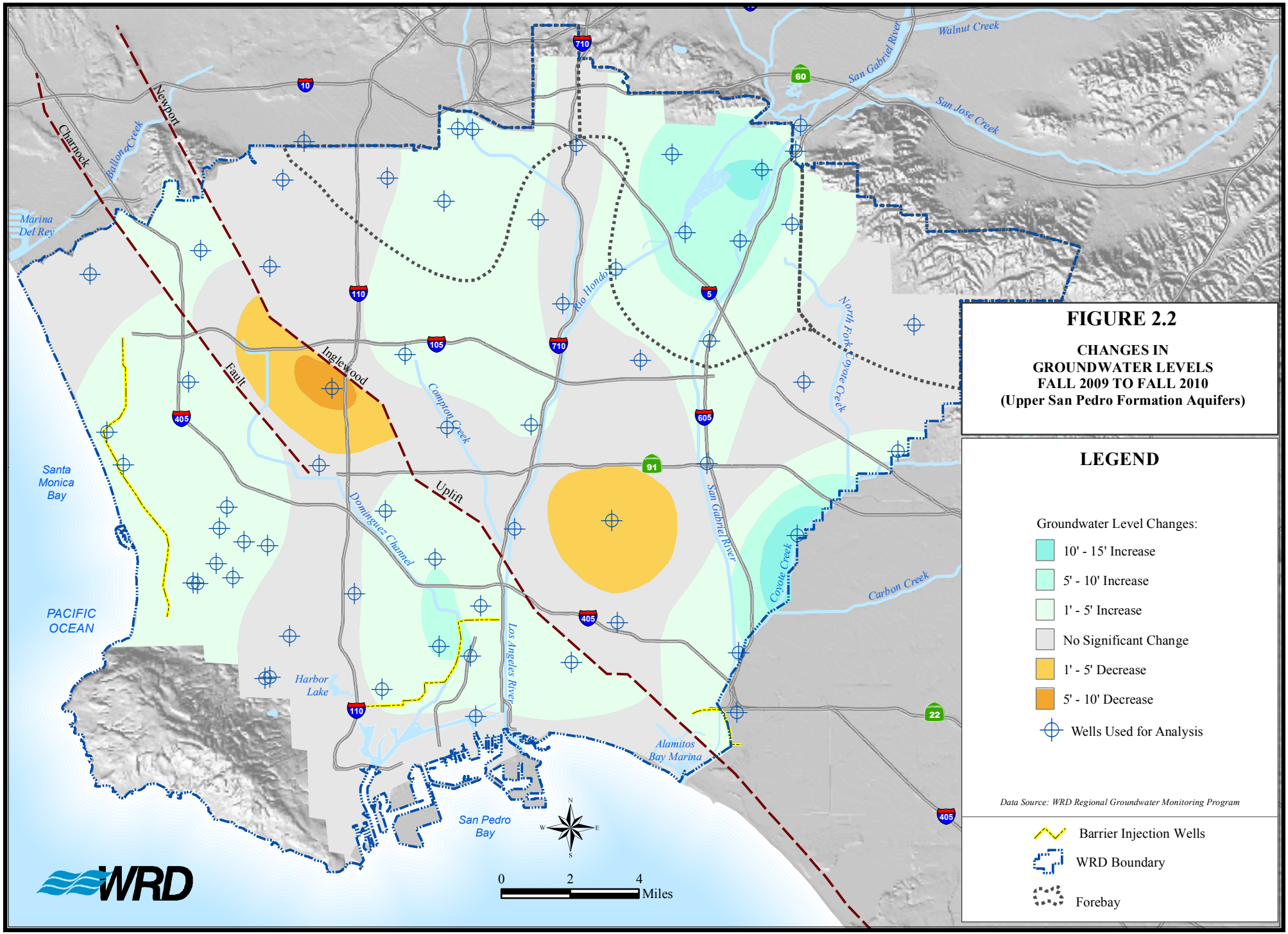


FIGURE 2.2
CHANGES IN
GROUNDWATER LEVELS
FALL 2009 TO FALL 2010
(Upper San Pedro Formation Aquifers)
LEGEND
Groundwater Level Changes:
10' - 15' Increase
5' - 10' Increase
1' - 5' Increase
No Significant Change
1' - 5' Decrease
5' - 10' Decrease
Wells Used for Analysis
Data Source: WRD Regional Groundwater Monitoring Program
Barrier Injection Wells
WRD Boundary
Forebay
Newport
Charnock
Fault
Inglewood
Uplift
Ballona Creek
Marina Del Rey
Santa Monica Bay
PACIFIC OCEAN
Harbor Lake
San Pedro Bay
Alamitos Bay Marina
Los Angeles River
Dominguez Channel
Compton Creek
Rio Hondo
San Gabriel River
Coyote Creek
North Fork Coyote Creek
Carbon Creek
San Jose Creek
Walnut Creek
710
10
60
110
105
5
405
605
91
22
0
2
4
Miles
N
S
E
W
WRD

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

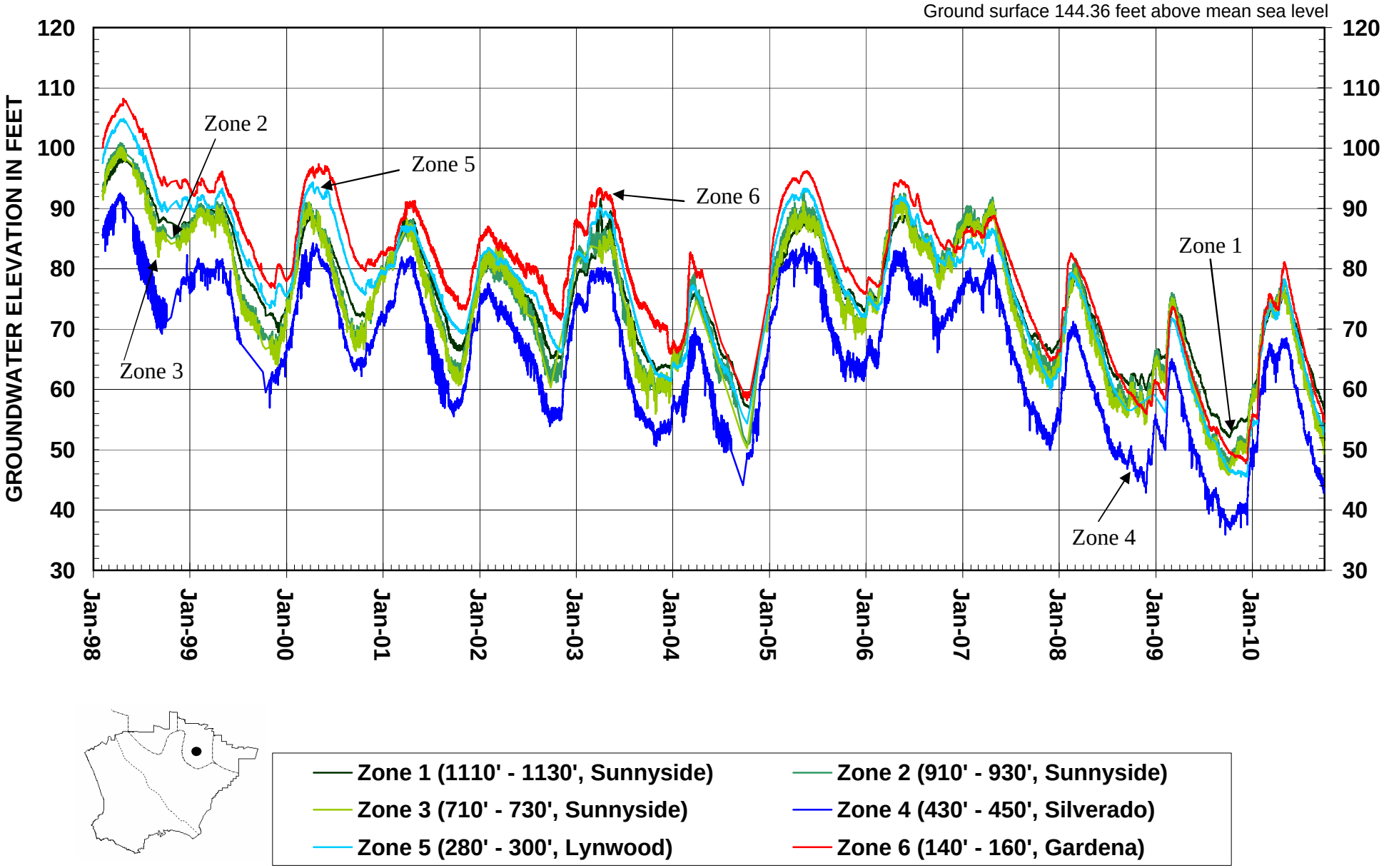
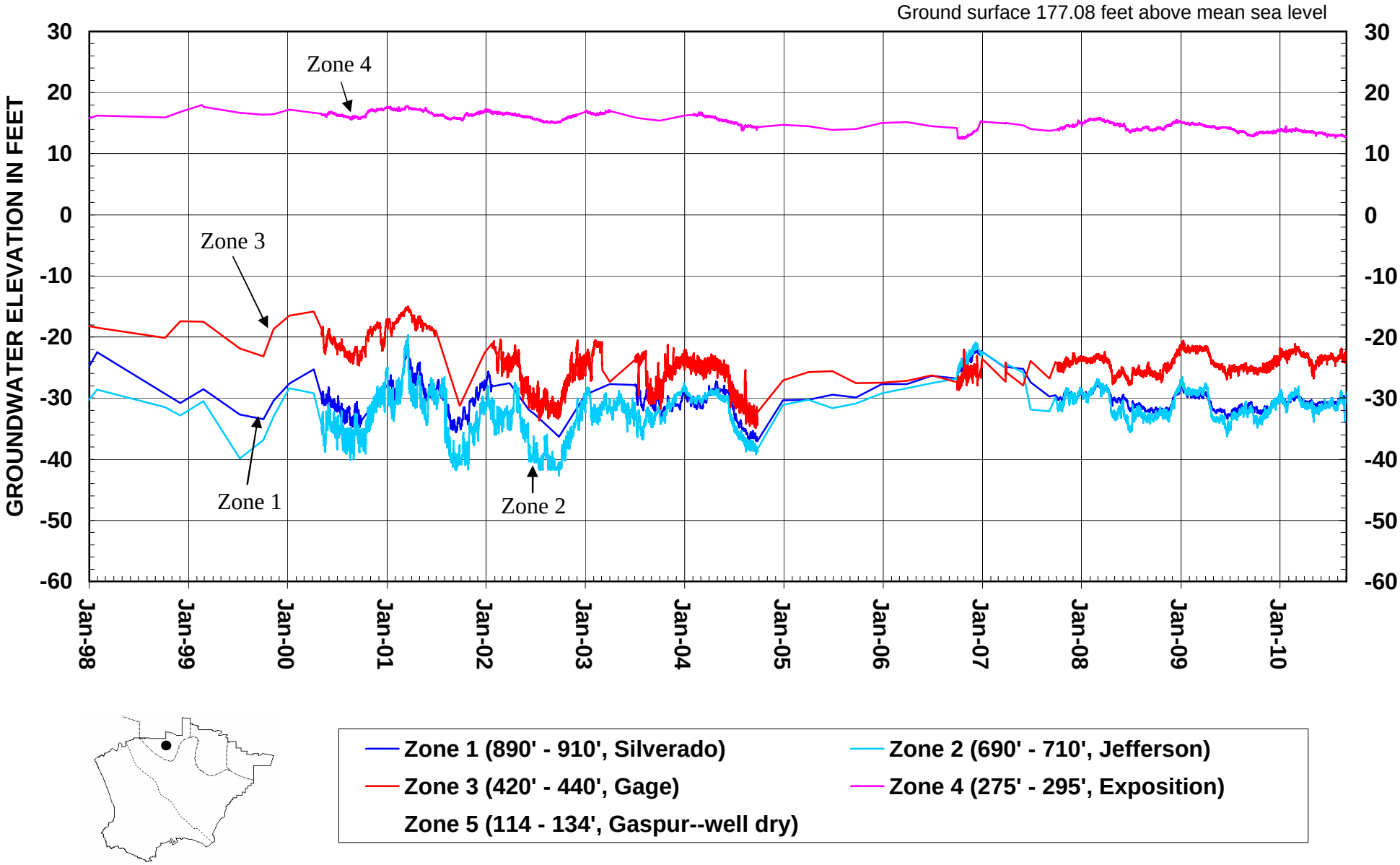


FIGURE 2.4
WATER LEVELS IN WRD KEY NESTED MONITORING WELL HUNTINGTON PARK #1



1/24/2011

FIGURE 2.5
WATER LEVELS IN WRD KEY NESTED MONITORING WELL WILLOWBROOK #1

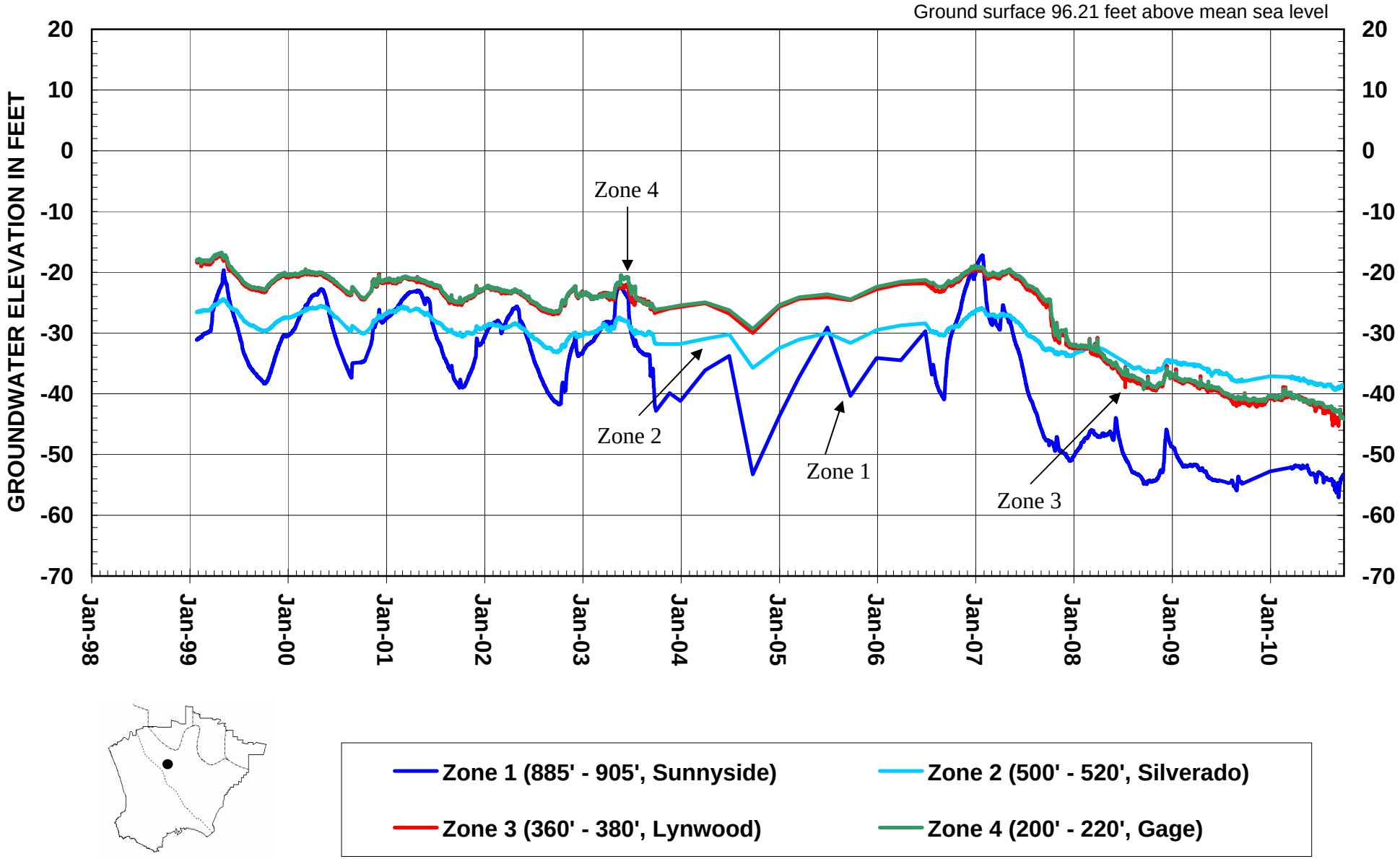


FIGURE 2.6

FLUCTUATION OF WATER LEVELS IN WRD KEY NESTED MONITORING WELL LONG BEACH #6

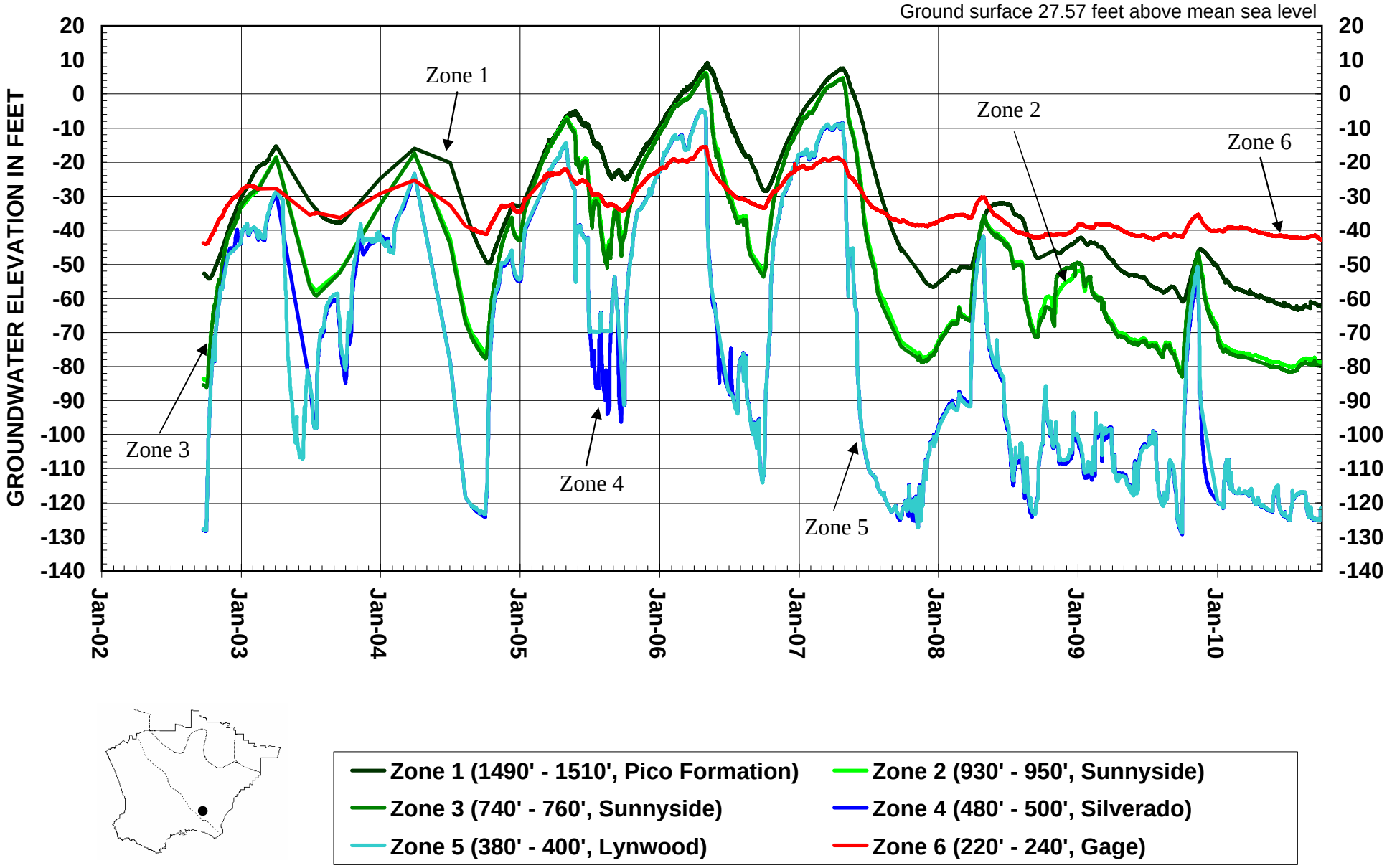


FIGURE 2.7
WATER LEVELS IN WRD KEY NESTED MONITORING WELL PM-4 MARINER

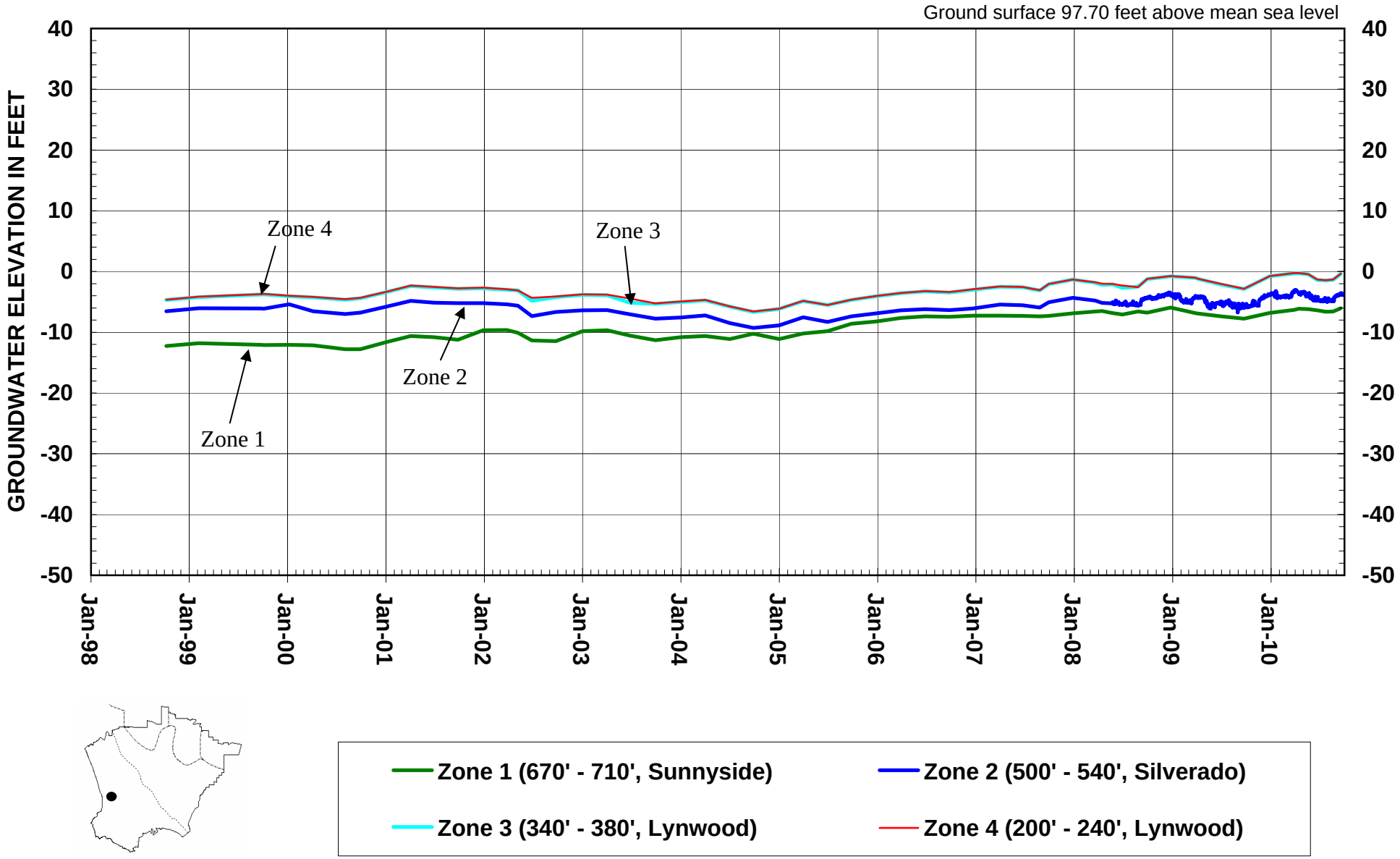
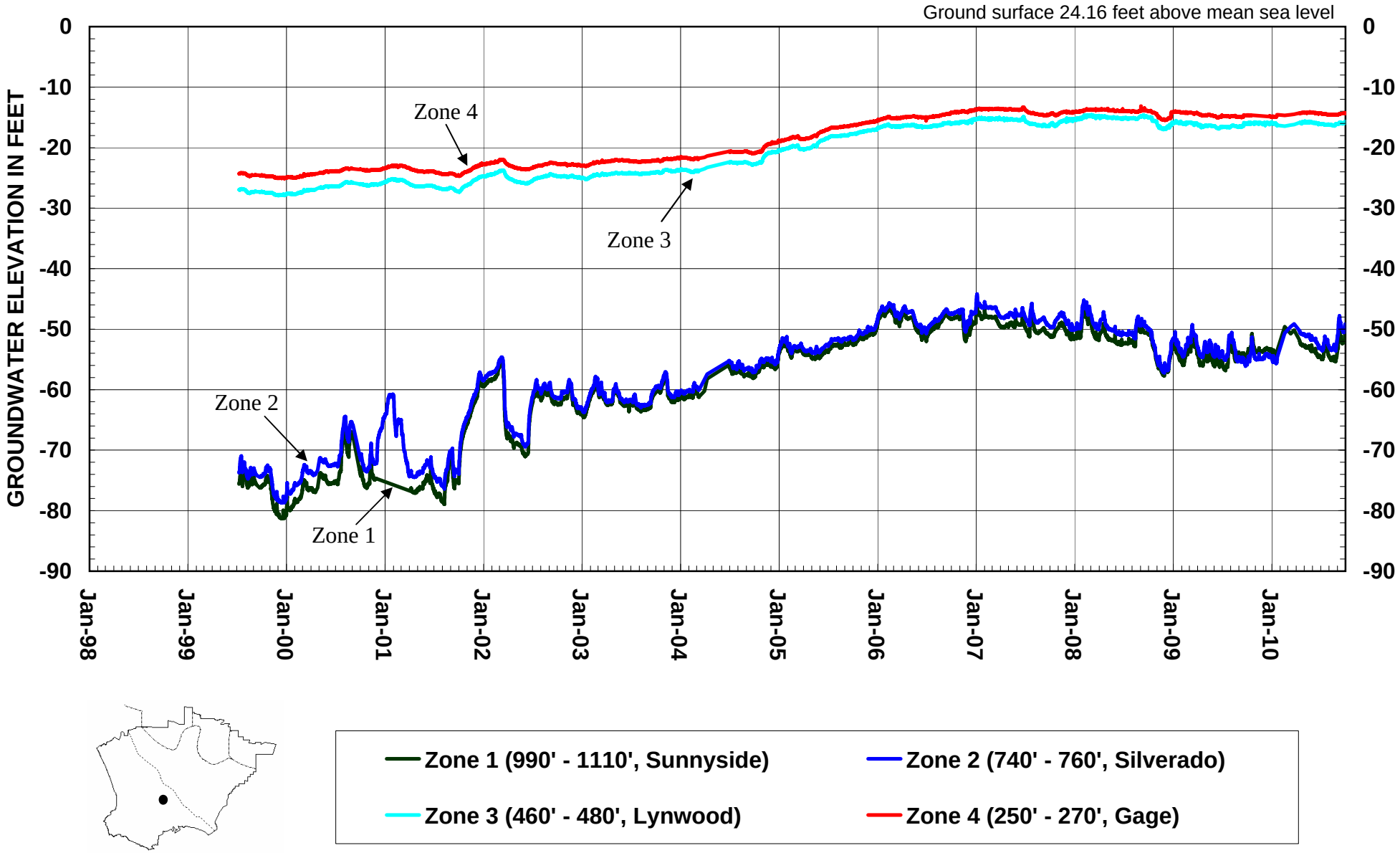


FIGURE 2.8
WATER LEVELS IN WRD KEY NESTED MONITORING WELL CARSON #1



1/24/2011

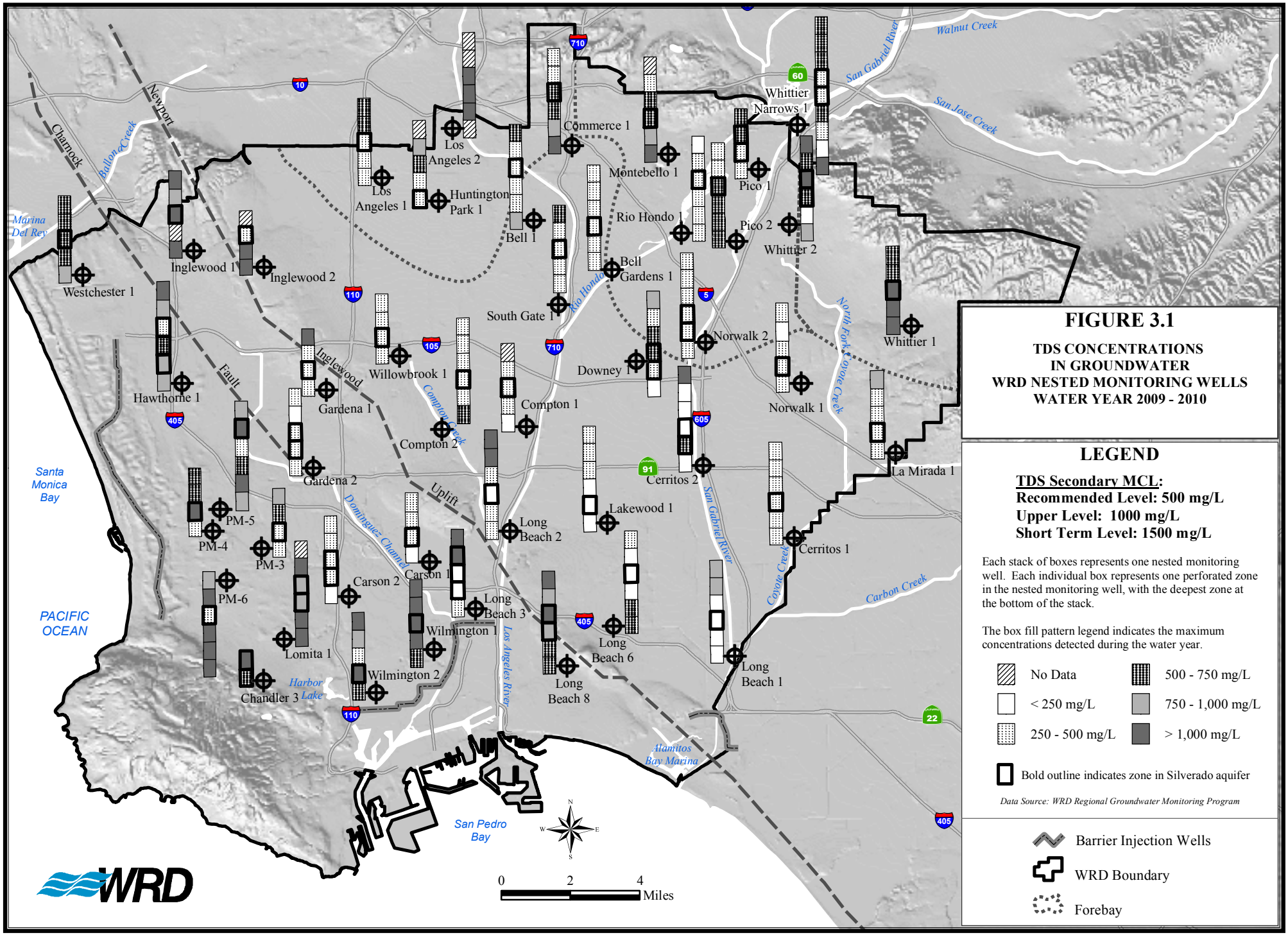


FIGURE 3.1
TDS CONCENTRATIONS
IN GROUNDWATER
WRD NESTED MONITORING WELLS
WATER YEAR 2009 - 2010
LEGEND
TDS Secondary MCL:
Recommended Level: 500 mg/L
Upper Level: 1000 mg/L
Short Term Level: 1500 mg/L
Each stack of boxes represents one nested monitoring well. Each individual box represents one perforated zone in the nested monitoring well, with the deepest zone at the bottom of the stack.
The box fill pattern legend indicates the maximum concentrations detected during the water year.
No Data
< 250 mg/L
250 - 500 mg/L
500 - 750 mg/L
750 - 1,000 mg/L
> 1,000 mg/L
Bold outline indicates zone in Silverado aquifer
Data Source: WRD Regional Groundwater Monitoring Program
Barrier Injection Wells
WRD Boundary
Forebay
Westchester 1
Inglewood 1
Inglewood 2
Los Angeles 1
Los Angeles 2
Huntington Park 1
Commerce 1
Montebello 1
Whittier Narrows 1
Pico 1
Pico 2
Whittier 2
Whittier 1
Bell 1
Rio Hondo 1
Bell Gardens 1
South Gate 1
Norwalk 2
Downey 1
Norwalk 1
Hawthorne 1
Willowbrook 1
Gardena 1
Compton 1
Compton 2
Gardena 2
Cerritos 2
La Mirada 1
Lakewood 1
Cerritos 1
PM-5
PM-4
PM-3
PM-6
Long Beach 2
Carson 2
Carson 1
Long Beach 3
Wilmington 1
Long Beach 6
Long Beach 1
Lomita 1
Wilmington 2
Long Beach 8
Chandler 3
Santa Monica Bay
PACIFIC OCEAN
San Pedro Bay
Marina Del Rey
Harbor Lake
Alamitos Bay Marina
Walnut Creek
San Jose Creek
Carbon Creek
Charnock
Ballona Creek
Newport
Inglewood
Fault
Uplift
Dominguez Channel
Compton Creek
Rio Hondo
San Gabriel River
North Fork Coyote Creek
Coyote Creek
Los Angeles River
0 2 4 Miles
WRD

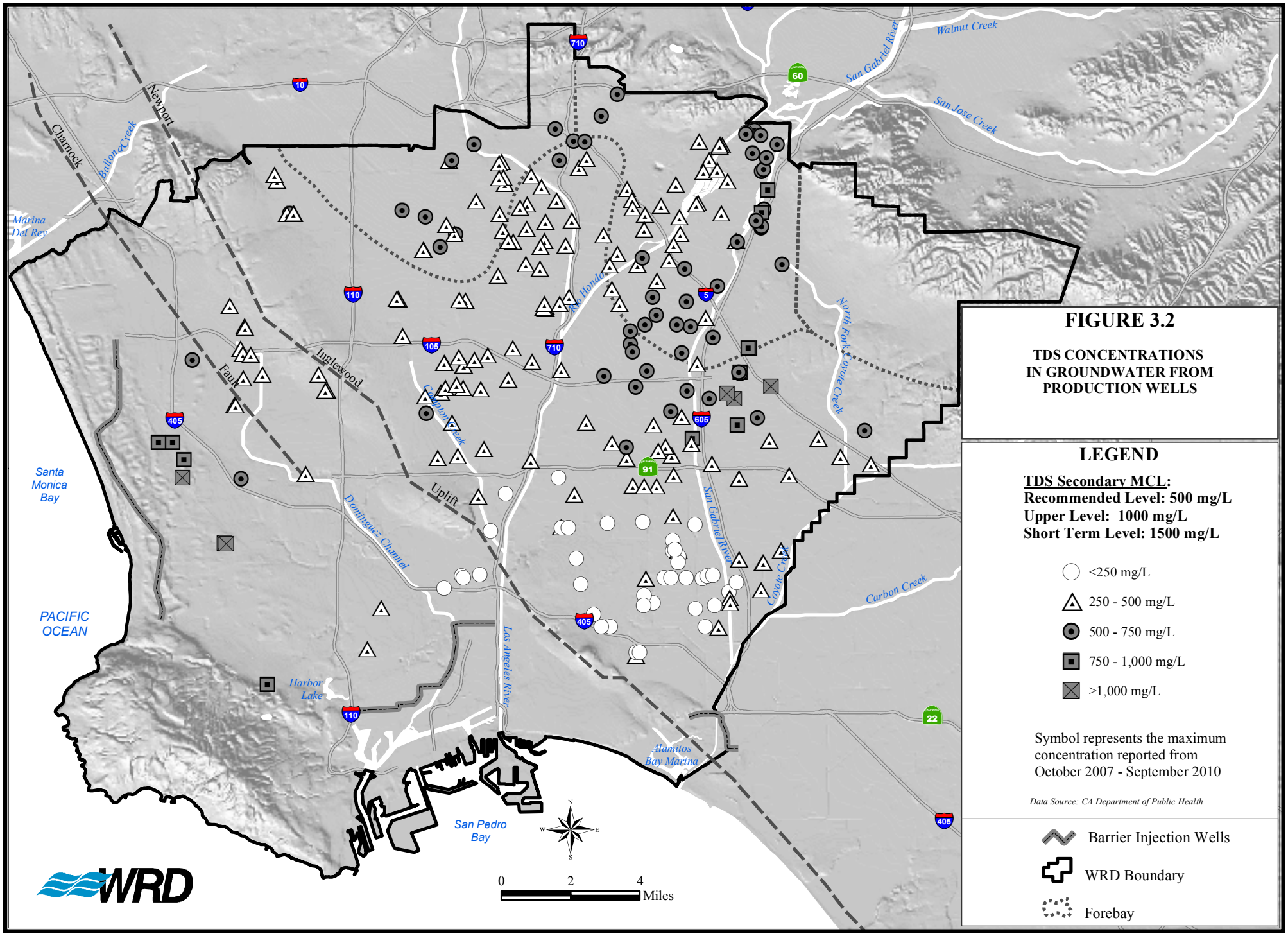


FIGURE 3.2
TDS CONCENTRATIONS IN GROUNDWATER FROM PRODUCTION WELLS
LEGEND
TDS Secondary MCL:
Recommended Level: 500 mg/L
Upper Level: 1000 mg/L
Short Term Level: 1500 mg/L
<250 mg/L
250 - 500 mg/L
500 - 750 mg/L
750 - 1,000 mg/L
>1,000 mg/L
Symbol represents the maximum concentration reported from October 2007 - September 2010
Data Source: CA Department of Public Health
Barrier Injection Wells
WRD Boundary
Forebay
Walnut Creek
San Gabriel River
San Jose Creek
Newport
Charnock
Ballona Creek
Marina Del Rey
Inglewood
Fault
Rio Hondo
Cabinon Creek
North Fork Coyote Creek
Uplift
Dominguez Channel
San Gabriel River
Coyote Creek
Carbon Creek
Los Angeles River
Santa Monica Bay
PACIFIC OCEAN
Harbor Lake
Alamitos Bay Marina
San Pedro Bay
0 2 4 Miles
WRD

FIGURE 3.3
TDS CONCENTRATIONS IN WRD KEY NESTED MONITORING WELL RIO HONDO #1

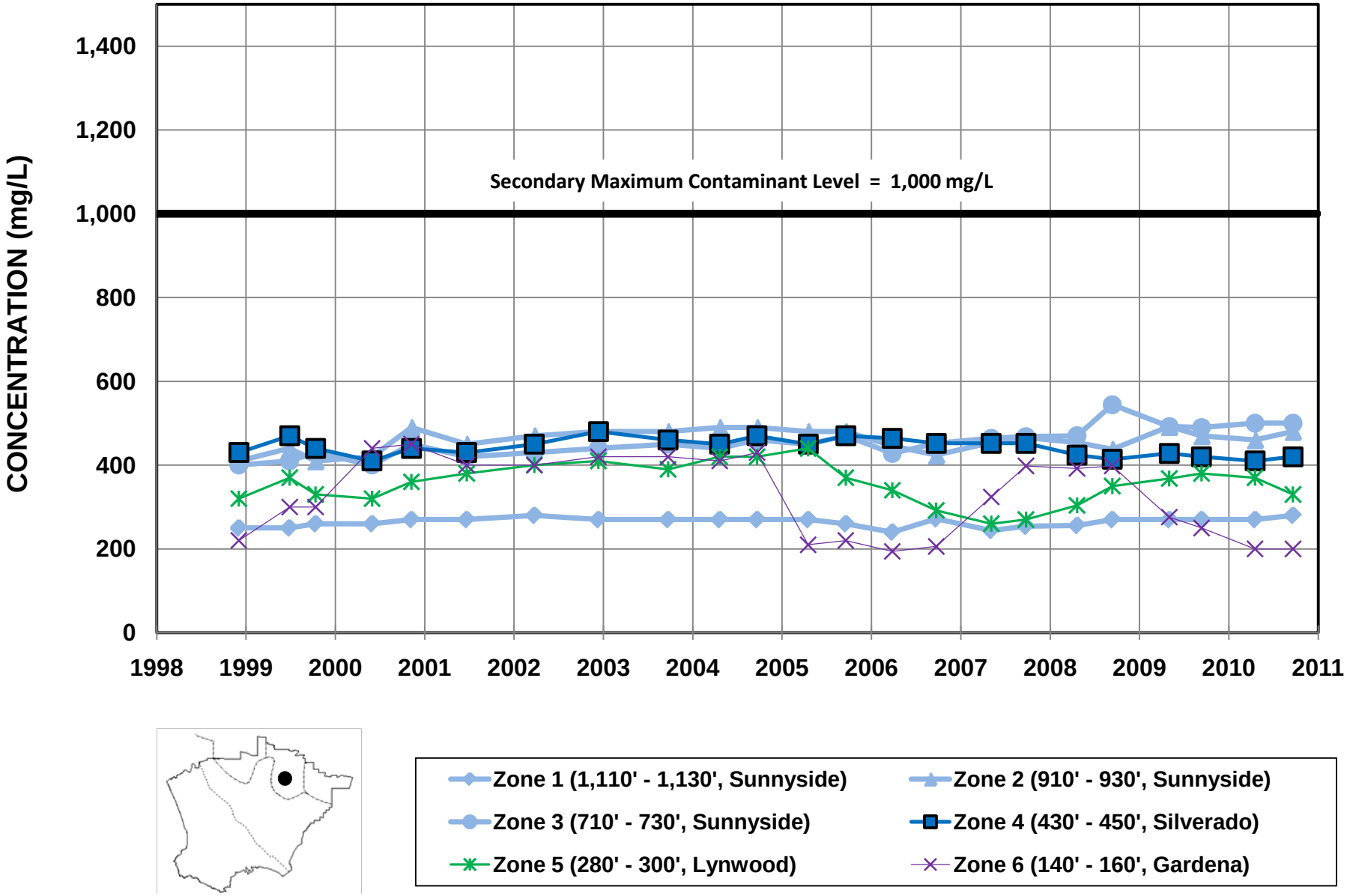


FIGURE 3.4
TDS CONCENTRATIONS IN WRD KEY NESTED MONITORING WELL HUNTINGTON PARK #1

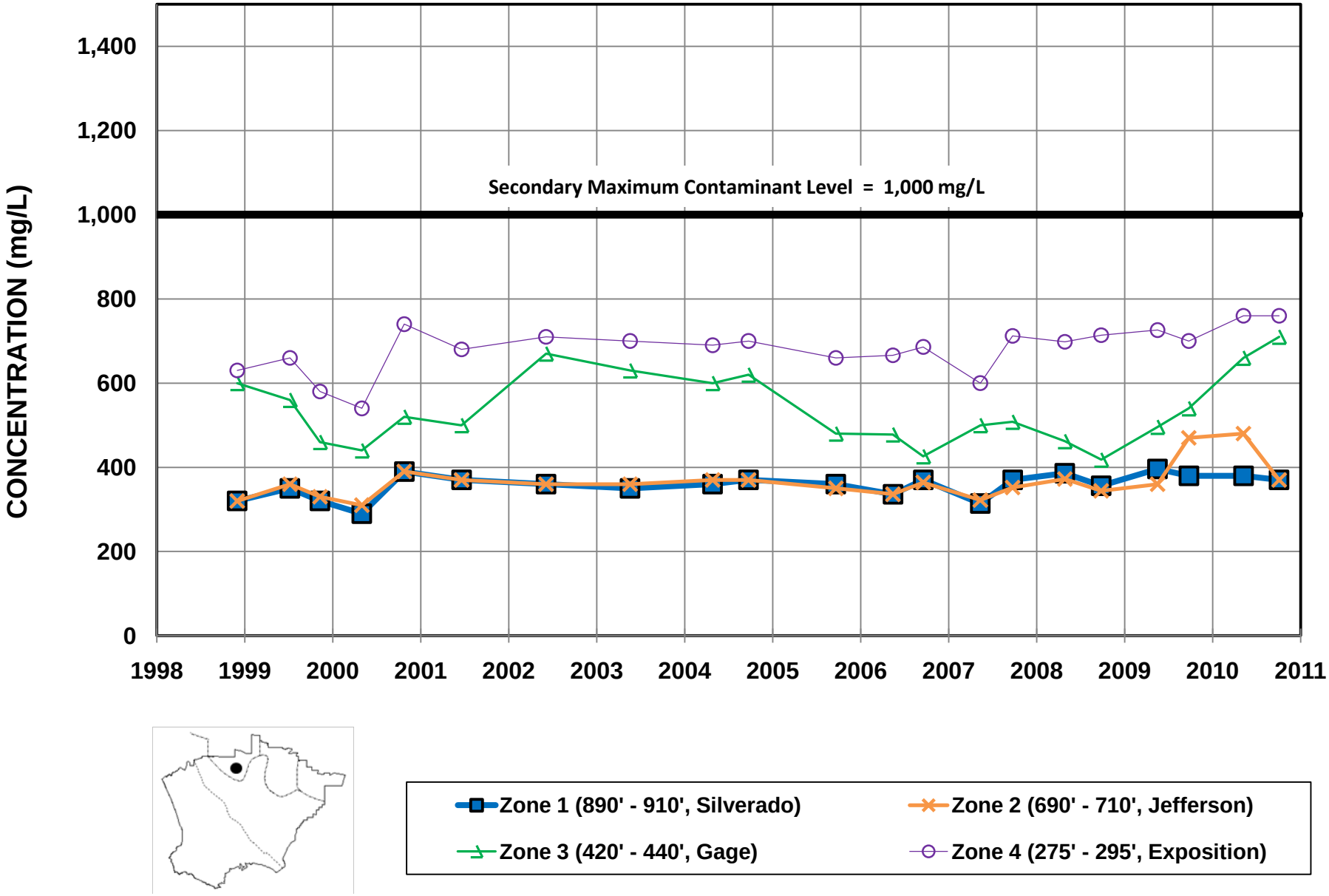


FIGURE 3.5
TDS CONCENTRATIONS IN WRD KEY NESTED MONITORING WELL WILLOWBROOK #1

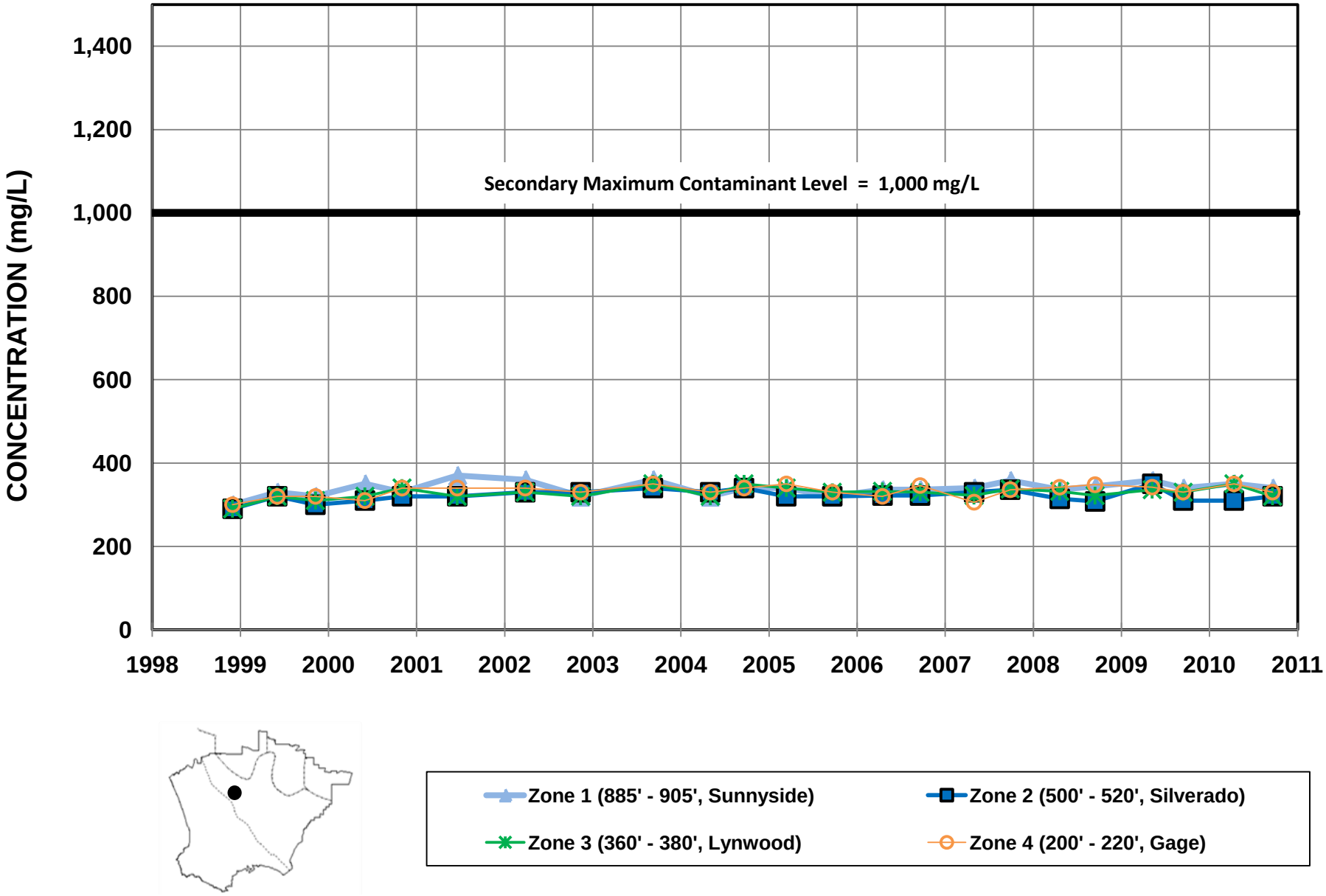


FIGURE 3.6
TDS CONCENTRATIONS IN WRD KEY NESTED MONITORING WELL LONG BEACH #6

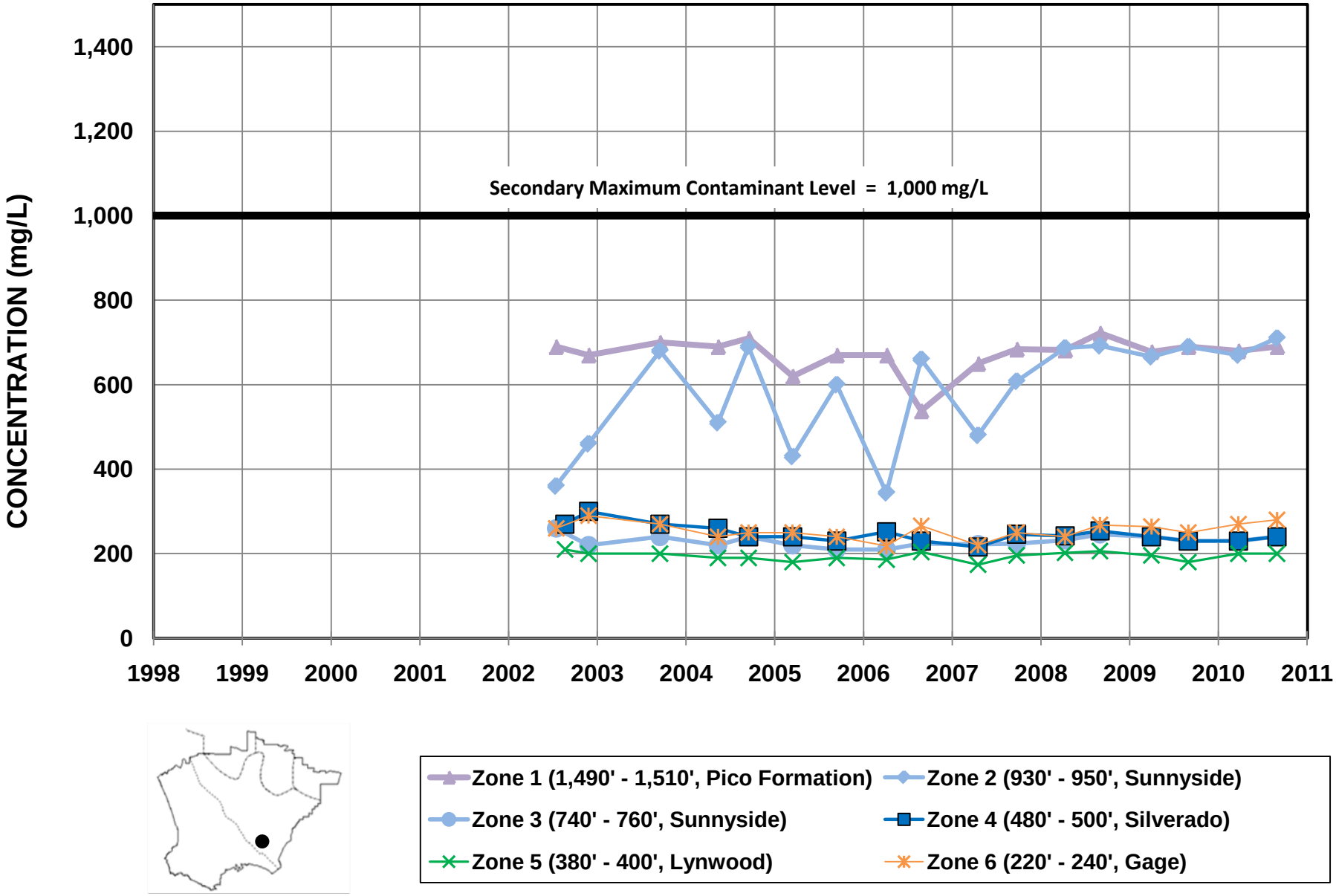


FIGURE 3.7
TDS CONCENTRATIONS IN WRD KEY NESTED MONITORING WELL PM-4 MARINER

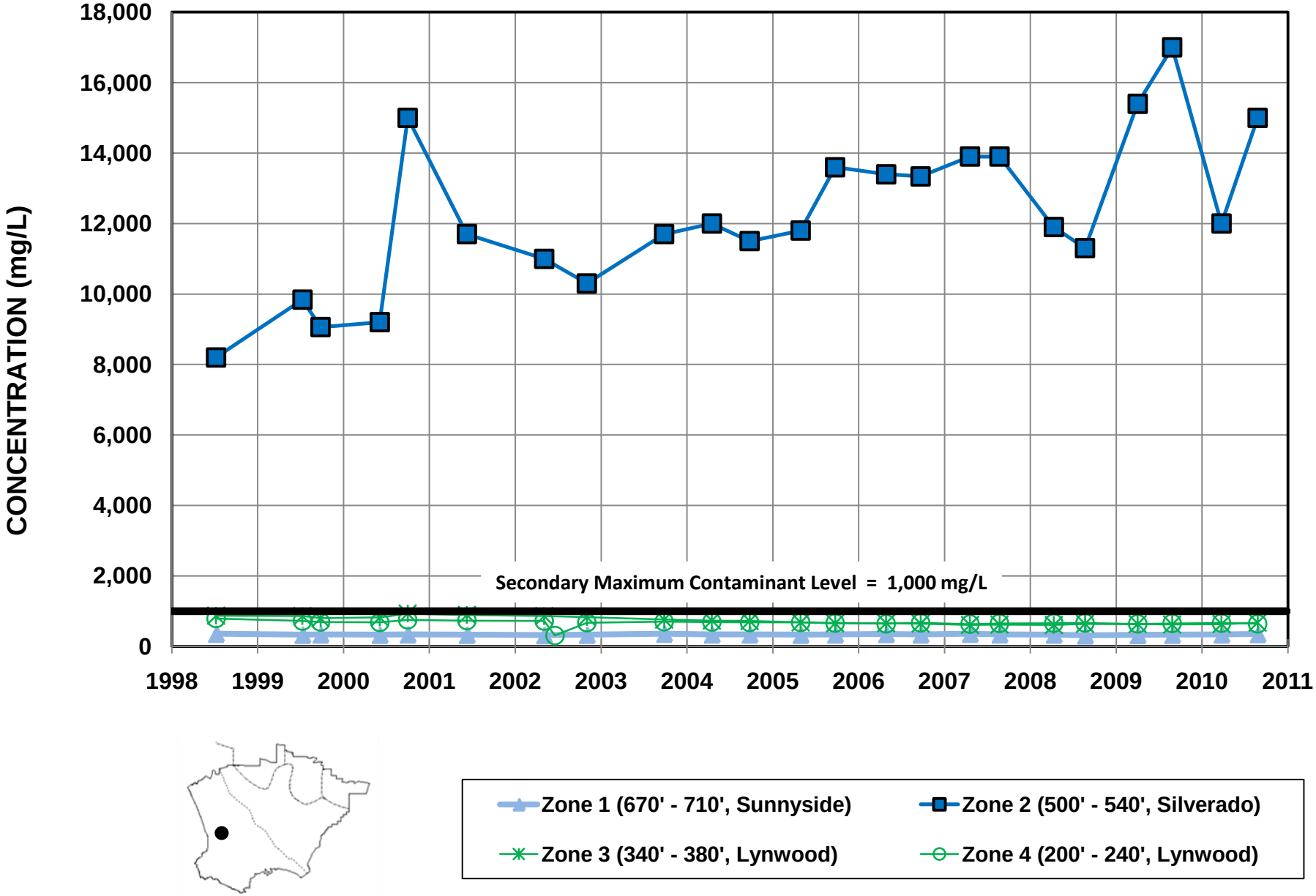
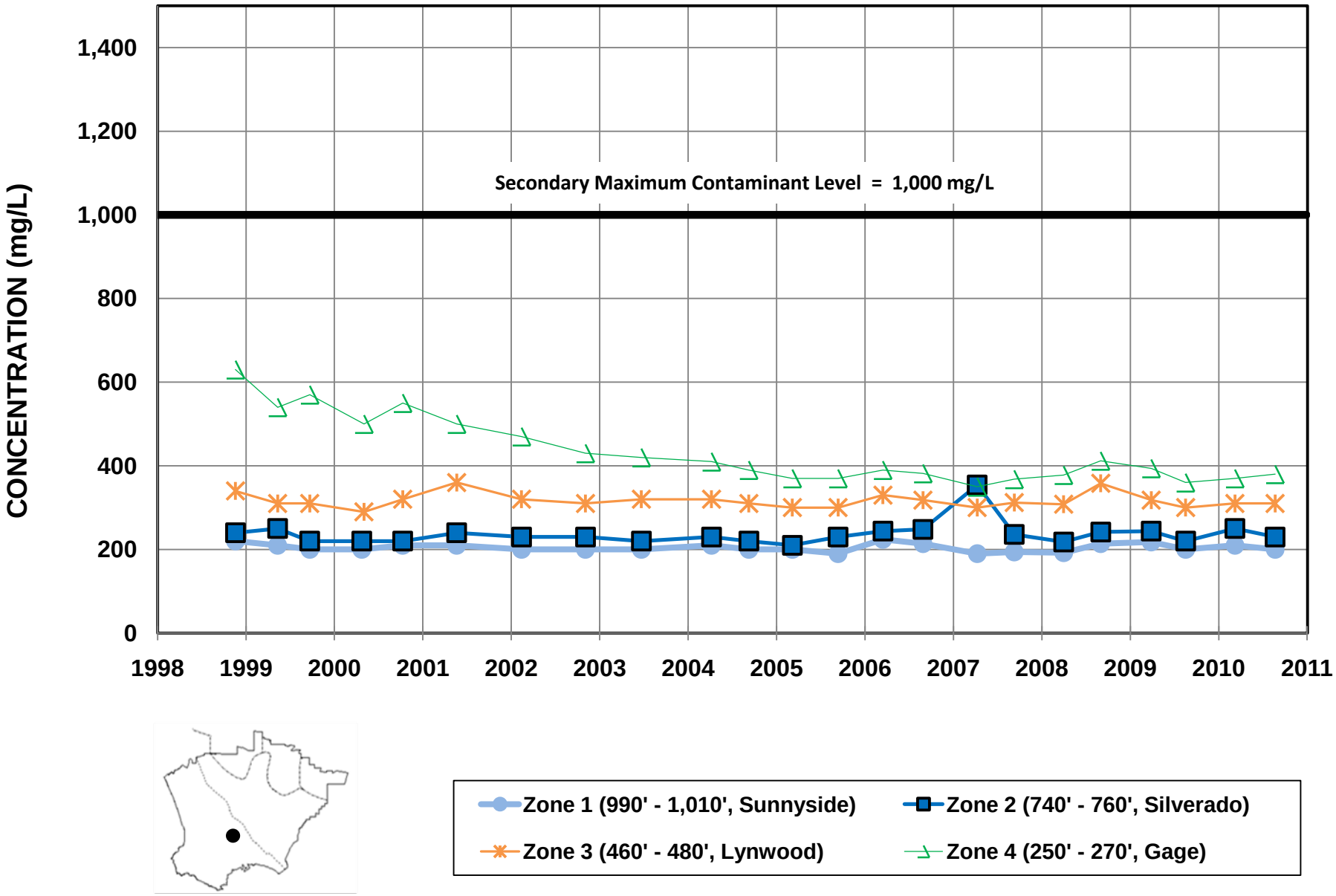


FIGURE 3.8
TDS CONCENTRATIONS IN WRD KEY NESTED MONITORING WELL CARSON #1



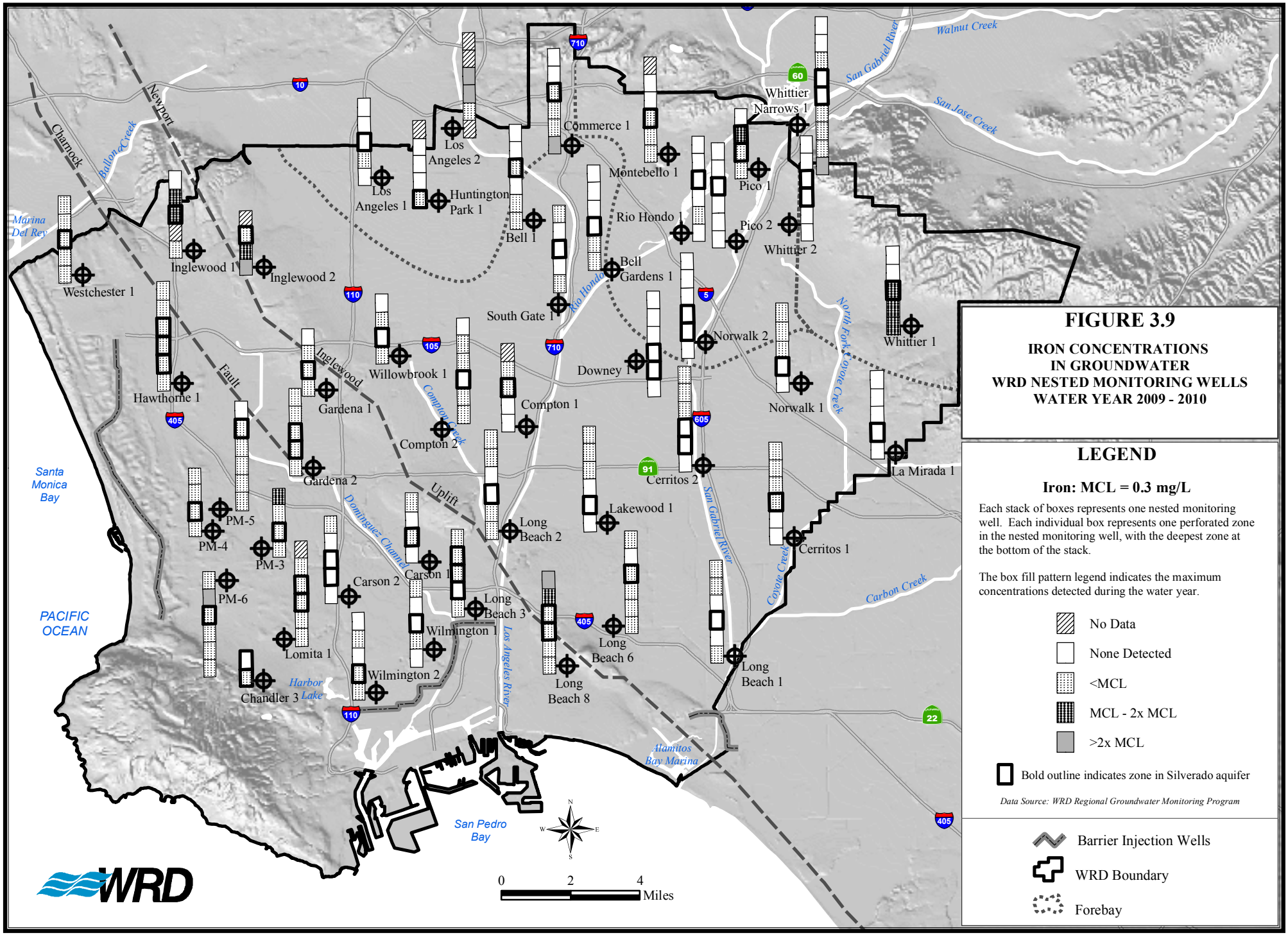


FIGURE 3.9
IRON CONCENTRATIONS
IN GROUNDWATER
WRD NESTED MONITORING WELLS
WATER YEAR 2009 - 2010
LEGEND
Iron: MCL = 0.3 mg/L
Each stack of boxes represents one nested monitoring well. Each individual box represents one perforated zone in the nested monitoring well, with the deepest zone at the bottom of the stack.
The box fill pattern legend indicates the maximum concentrations detected during the water year.
No Data
None Detected
<MCL
MCL - 2x MCL
>2x MCL
Bold outline indicates zone in Silverado aquifer
Data Source: WRD Regional Groundwater Monitoring Program
Barrier Injection Wells
WRD Boundary
Forebay
Westchester 1
Inglewood 1
Inglewood 2
Los Angeles 1
Los Angeles 2
Huntington Park 1
Commerce 1
Bell 1
Montebello 1
Rio Hondo 1
Bell Gardens 1
Pico 1
Pico 2
Whittier Narrows 1
Whittier 2
Whittier 1
South Gate 1
Norwalk 2
Norwalk 1
Downey 1
Hawthorne 1
Willowbrook 1
Gardena 1
Gardena 2
Compton 1
Compton 2
Cerritos 2
Cerritos 1
La Mirada 1
Lakewood 1
Long Beach 2
Long Beach 3
Long Beach 6
Long Beach 8
Long Beach 1
Carson 1
Carson 2
Wilmington 1
Wilmington 2
Lomita 1
Chandler 3
PM-3
PM-4
PM-5
PM-6
Santa Monica Bay
PACIFIC OCEAN
San Pedro Bay
Marina Del Rey
Harbor Lake
Alamitos Bay Marina
Charnock
Ballona Creek
Newport
Inglewood
Fault
Uplift
Dominguez Channel
Compton Creek
Los Angeles River
San Gabriel River
Rio Hondo
Coyote Creek
North Fork Coyote Creek
Carbon Creek
San Jose Creek
Walnut Creek
0 2 4 Miles
WRD

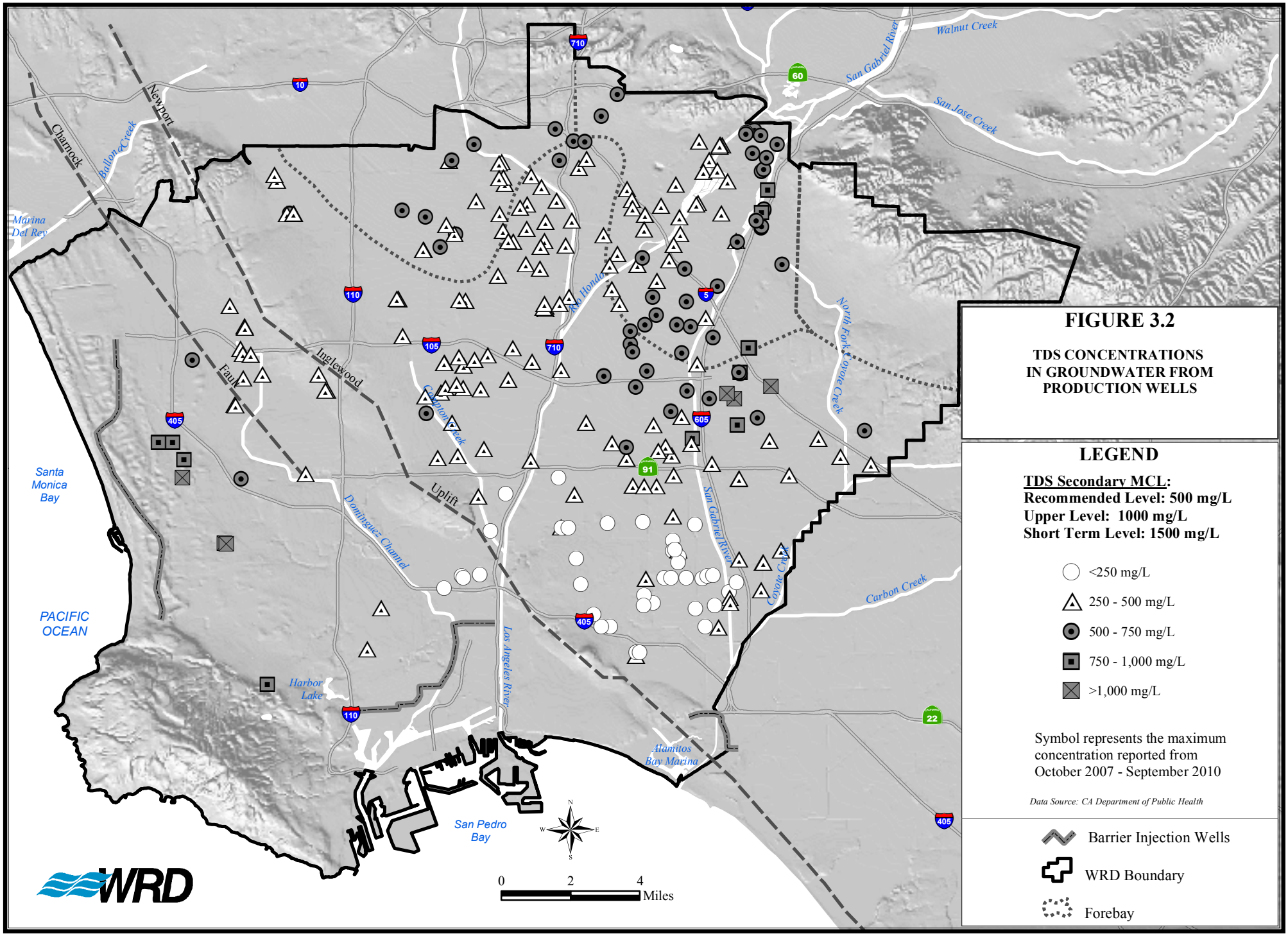


FIGURE 3.2
TDS CONCENTRATIONS IN GROUNDWATER FROM PRODUCTION WELLS
LEGEND
TDS Secondary MCL:
Recommended Level: 500 mg/L
Upper Level: 1000 mg/L
Short Term Level: 1500 mg/L
<250 mg/L
250 - 500 mg/L
500 - 750 mg/L
750 - 1,000 mg/L
>1,000 mg/L
Symbol represents the maximum concentration reported from October 2007 - September 2010
Data Source: CA Department of Public Health
Barrier Injection Wells
WRD Boundary
Forebay
Walnut Creek
San Gabriel River
San Jose Creek
Newport
Charnock
Ballona Creek
Marina Del Rey
Inglewood
Fault
Rio Hondo
Cabinon Creek
North Fork Coyote Creek
Uplift
Dominguez Channel
San Gabriel River
Coyote Creek
Carbon Creek
Los Angeles River
Santa Monica Bay
PACIFIC OCEAN
Harbor Lake
Alamitos Bay Marina
San Pedro Bay
0 2 4 Miles
WRD

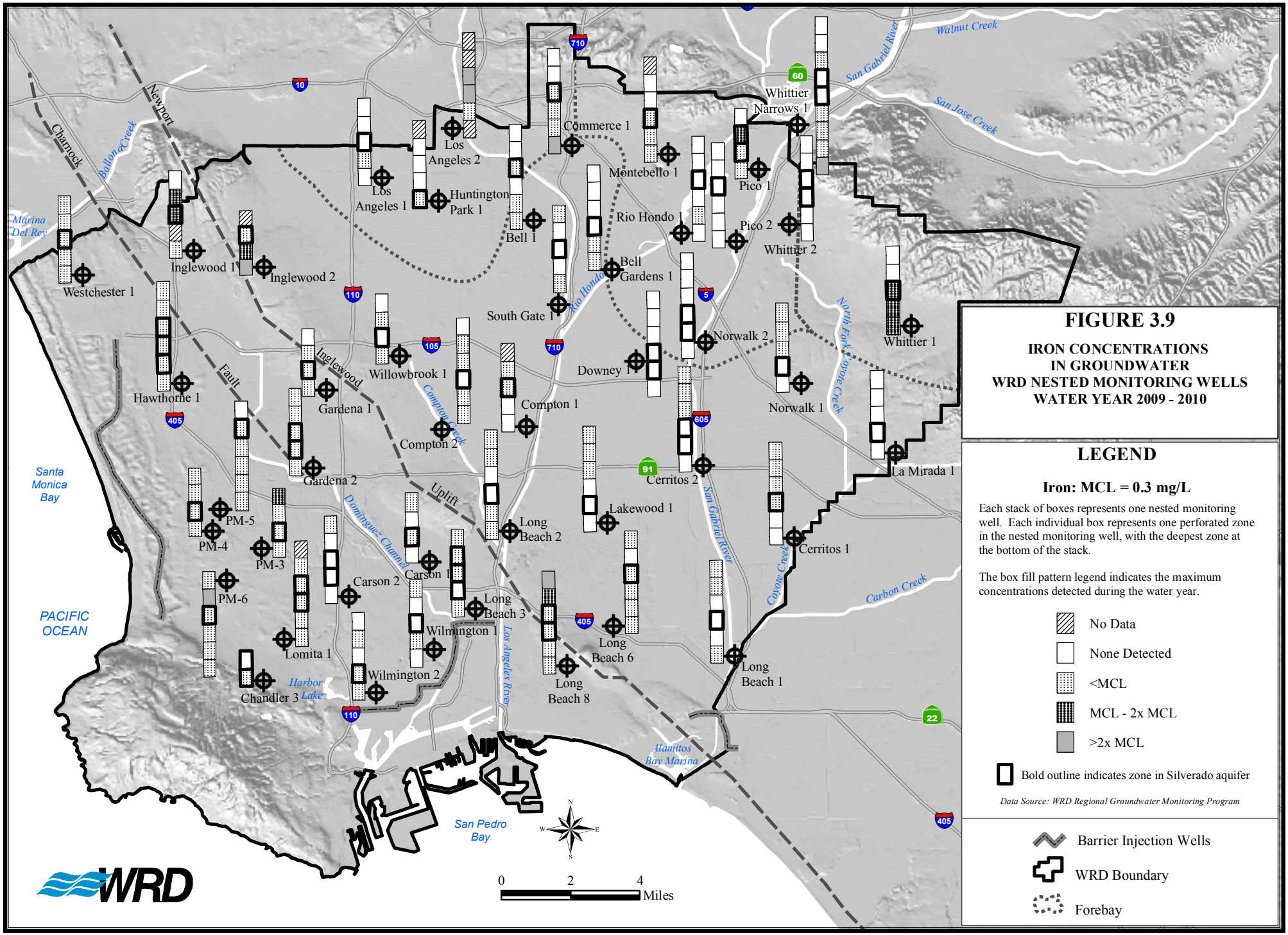


FIGURE 3.9
IRON CONCENTRATIONS
IN GROUNDWATER
WRD NESTED MONITORING WELLS
WATER YEAR 2009 - 2010
LEGEND
Iron: MCL = 0.3 mg/L
Each stack of boxes represents one nested monitoring well. Each individual box represents one perforated zone in the nested monitoring well, with the deepest zone at the bottom of the stack.
The box fill pattern legend indicates the maximum concentrations detected during the water year.
No Data
None Detected
<MCL
MCL - 2x MCL
>2x MCL
Bold outline indicates zone in Silverado aquifer
Data Source: WRD Regional Groundwater Monitoring Program
Barrier Injection Wells
WRD Boundary
Forebay
Westchester 1
Inglewood 1
Inglewood 2
Los Angeles 1
Los Angeles 2
Huntington Park 1
Commerce 1
Bell 1
Montebello 1
Rio Hondo 1
Bell Gardens 1
Pico 1
Pico 2
Whittier Narrows 1
Whittier 2
Whittier 1
South Gate 1
Norwalk 2
Norwalk 1
Downey 1
Hawthorne 1
Willowbrook 1
Gardena 1
Gardena 2
Compton 1
Compton 2
Cerritos 2
Cerritos 1
La Mirada 1
Lakewood 1
Long Beach 2
Long Beach 3
Long Beach 6
Long Beach 8
Long Beach 1
Carson 1
Carson 2
Wilmington 1
Wilmington 2
Lomita 1
Chandler 3
PM-3
PM-4
PM-5
PM-6
Santa Monica Bay
PACIFIC OCEAN
San Pedro Bay
Marina Del Rey
Harbor Lake
Alamitos Bay Marina
Charnock
Ballona Creek
Newport
Inglewood
Fault
Uplift
Dominguez Channel
Compton Creek
Los Angeles River
San Gabriel River
Rio Hondo
Coyote Creek
North Fork Coyote Creek
Carbon Creek
San Jose Creek
Walnut Creek
0 2 4 Miles
WRD

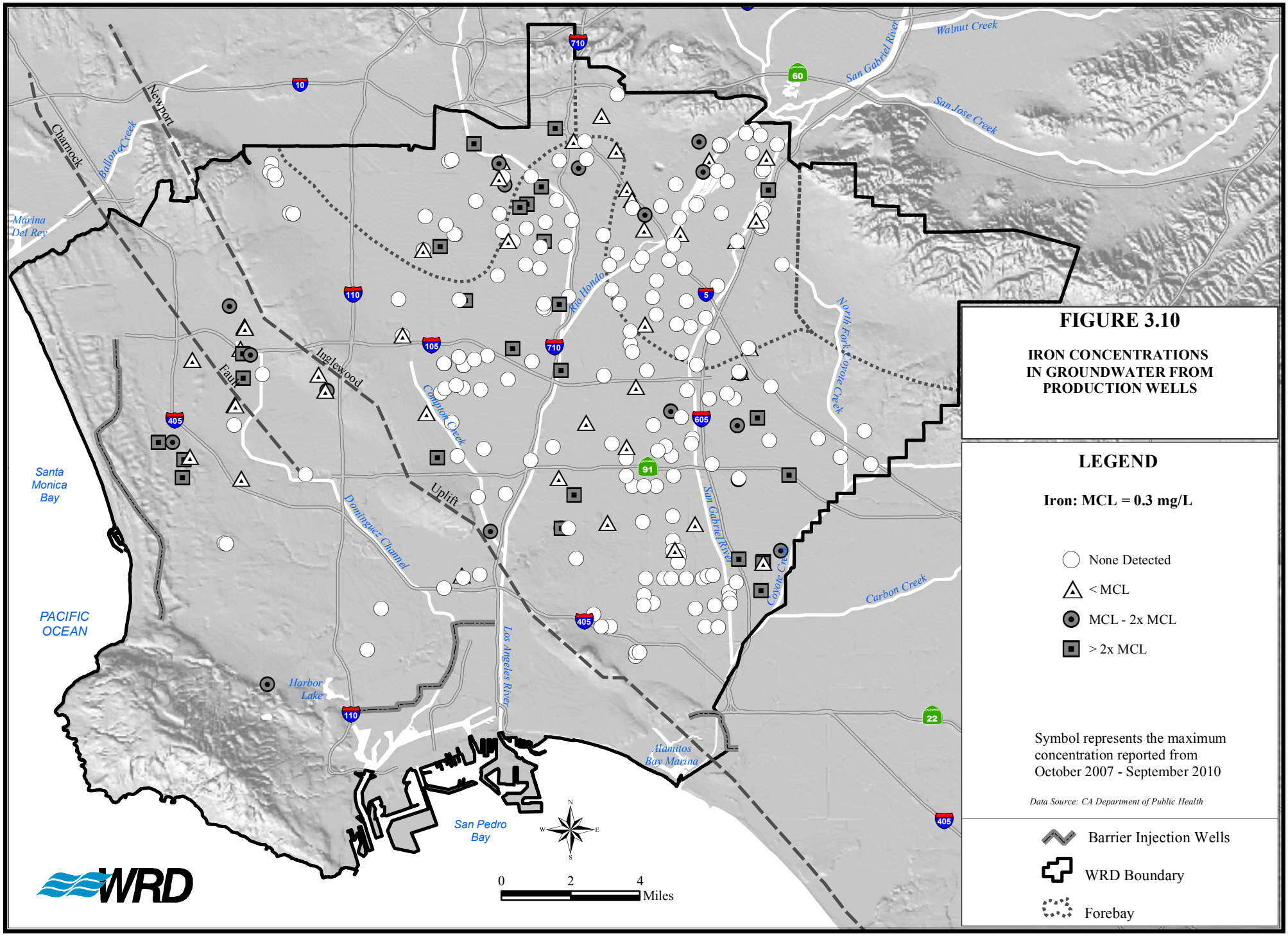


FIGURE 3.10
IRON CONCENTRATIONS IN GROUNDWATER FROM PRODUCTION WELLS
LEGEND
Iron: MCL = 0.3 mg/L
None Detected
< MCL
MCL - 2x MCL
> 2x MCL
Symbol represents the maximum concentration reported from October 2007 - September 2010
Data Source: CA Department of Public Health
Barrier Injection Wells
WRD Boundary
Forebay
Walnut Creek
San Gabriel River
San Jose Creek
Newport
Charnock
Ballona Creek
Marina Del Rey
Rio Hondo
North Fork Coyote Creek
Inglewood
Fault
Compton Creek
Uplift
Dominguez Channel
Santa Monica Bay
PACIFIC OCEAN
Los Angeles River
Coyote Creek
Carbon Creek
Harbor Lake
Alamitos Bay Marina
San Pedro Bay
0 2 4 Miles
WRD

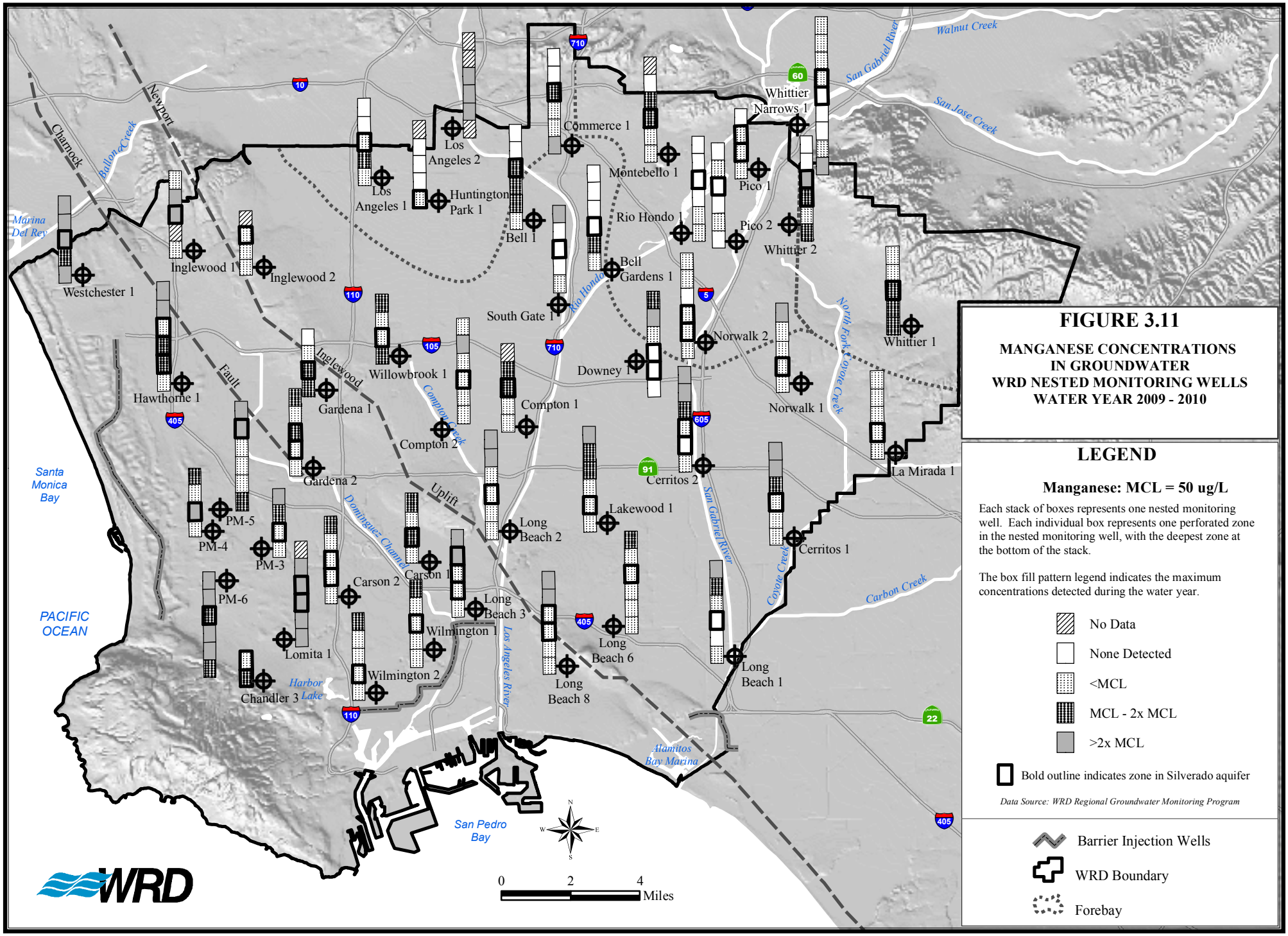


FIGURE 3.11
MANGANESE CONCENTRATIONS
IN GROUNDWATER
WRD NESTED MONITORING WELLS
WATER YEAR 2009 - 2010
LEGEND
Manganese: MCL = 50 ug/L
Each stack of boxes represents one nested monitoring well. Each individual box represents one perforated zone in the nested monitoring well, with the deepest zone at the bottom of the stack.
The box fill pattern legend indicates the maximum concentrations detected during the water year.
No Data
None Detected
<MCL
MCL - 2x MCL
>2x MCL
Bold outline indicates zone in Silverado aquifer
Data Source: WRD Regional Groundwater Monitoring Program
Barrier Injection Wells
WRD Boundary
Forebay
Westchester 1
Hawthorne 1
Inglewood 1
Inglewood 2
Los Angeles 1
Los Angeles 2
Huntington Park 1
Bell 1
Commerce 1
Montebello 1
Rio Hondo 1
Bell Gardens 1
Pico 1
Pico 2
Whittier Narrows 1
Whittier 2
Whittier 1
South Gate 1
Norwalk 2
Norwalk 1
Downey 1
Willowbrook 1
Gardena 1
Gardena 2
Compton 1
Compton 2
Cerritos 2
Cerritos 1
La Mirada 1
Lakewood 1
Long Beach 2
Long Beach 3
Long Beach 6
Long Beach 8
Long Beach 1
Carson 1
Carson 2
Wilmington 1
Wilmington 2
Lomita 1
Chandler 3
PM-3
PM-4
PM-5
PM-6
Santa Monica Bay
PACIFIC OCEAN
San Pedro Bay
Marina Del Rey
Harbor Lake
Alamitos Bay Marina
Walnut Creek
San Jose Creek
San Gabriel River
Carbon Creek
Coyote Creek
North Fork Coyote Creek
Los Angeles River
Rio Hondo
Compton Creek
Dominguez Channel
Charnock
Ballona Creek
Newport
Inglewood
Uplift
Fault
0 2 4 Miles

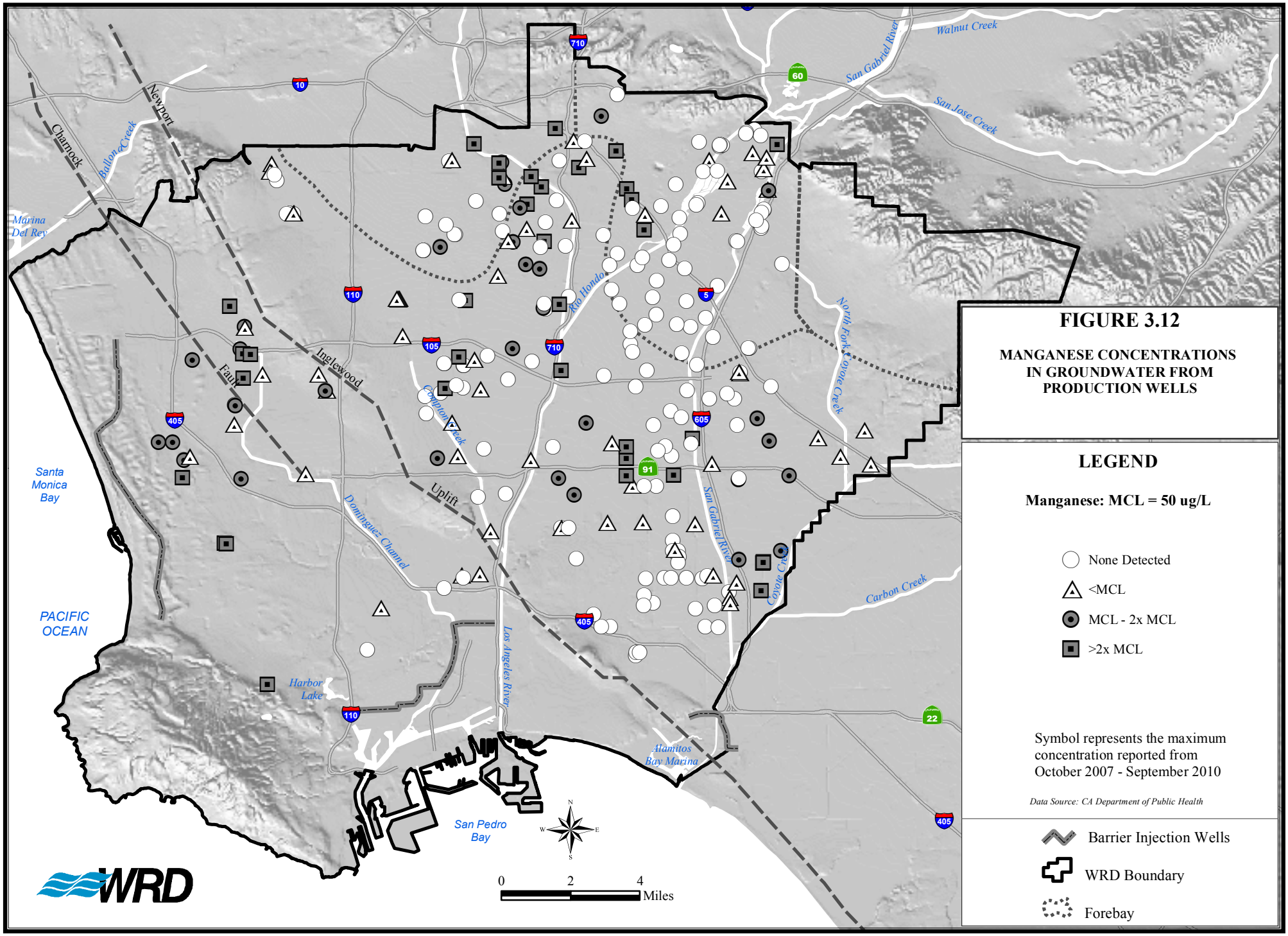


FIGURE 3.12
MANGANESE CONCENTRATIONS IN GROUNDWATER FROM PRODUCTION WELLS
LEGEND
Manganese: MCL = 50 ug/L
None Detected
<MCL
MCL - 2x MCL
>2x MCL
Symbol represents the maximum concentration reported from October 2007 - September 2010
Data Source: CA Department of Public Health
Barrier Injection Wells
WRD Boundary
Forebay
Walnut Creek
San Gabriel River
San Jose Creek
Newport
Charnock
Ballona Creek
Marina Del Rey
Rio Hondo
North Fork Coyote Creek
Inglewood
Fault
Compton Creek
Uplift
Dominguez Channel
Santa Monica Bay
PACIFIC OCEAN
Harbor Lake
Los Angeles River
San Gabriel River
Coyote Creek
Carbon Creek
Alamitos Bay Marina
San Pedro Bay
0 2 4 Miles
WRD

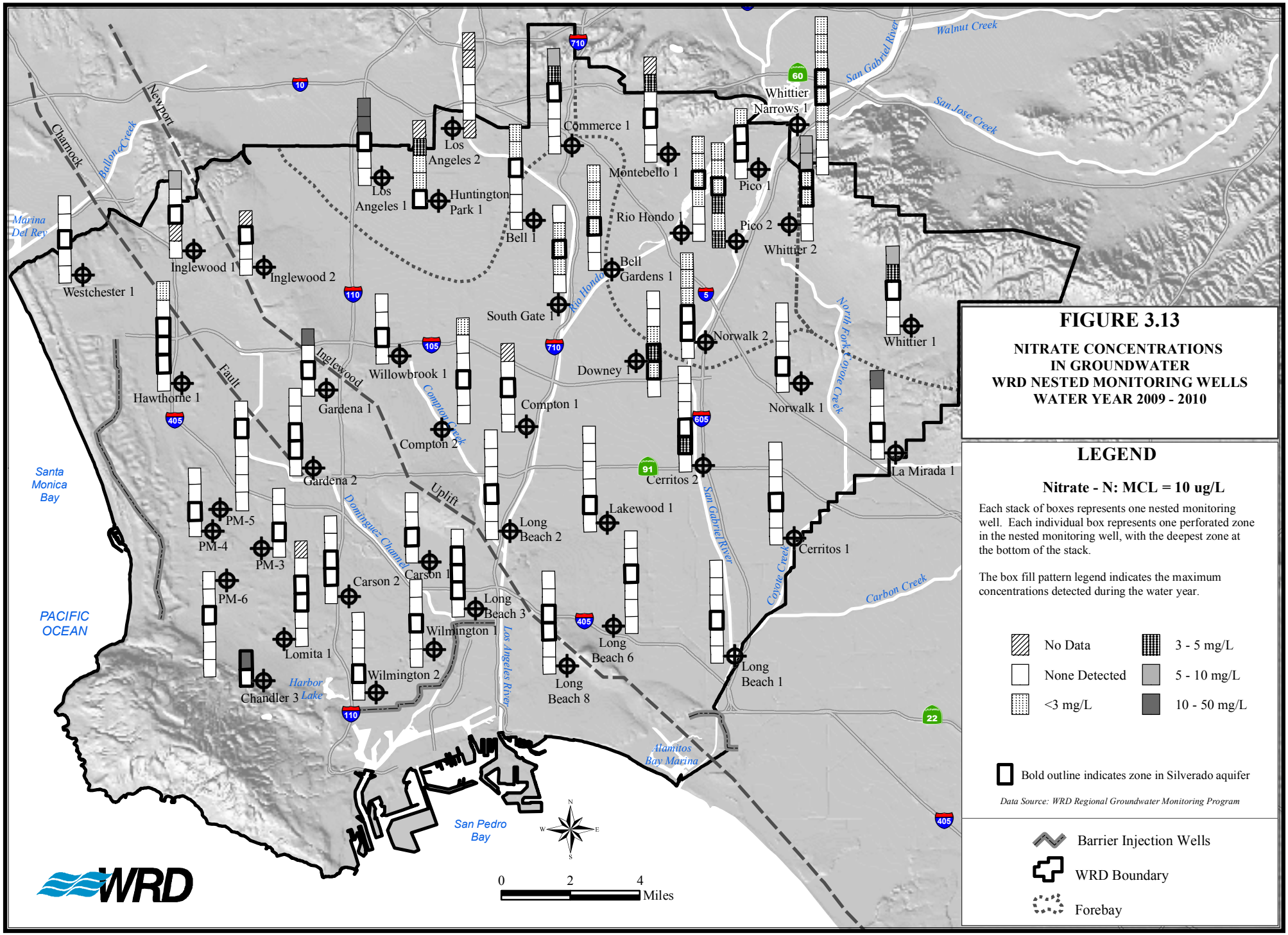


FIGURE 3.13
NITRATE CONCENTRATIONS
IN GROUNDWATER
WRD NESTED MONITORING WELLS
WATER YEAR 2009 - 2010
LEGEND
Nitrate - N: MCL = 10 ug/L
Each stack of boxes represents one nested monitoring well. Each individual box represents one perforated zone in the nested monitoring well, with the deepest zone at the bottom of the stack.
The box fill pattern legend indicates the maximum concentrations detected during the water year.
No Data
None Detected
<3 mg/L
3 - 5 mg/L
5 - 10 mg/L
10 - 50 mg/L
Bold outline indicates zone in Silverado aquifer
Data Source: WRD Regional Groundwater Monitoring Program
Barrier Injection Wells
WRD Boundary
Forebay
Westchester 1
Inglewood 1
Inglewood 2
Los Angeles 1
Los Angeles 2
Huntington Park 1
Commerce 1
Bell 1
Montebello 1
Rio Hondo 1
Bell Gardens 1
Pico 1
Pico 2
Whittier Narrows 1
Whittier 2
Whittier 1
South Gate 1
Norwalk 2
Norwalk 1
Downey 1
Hawthorne 1
Gardena 1
Gardena 2
Willowbrook 1
Compton 1
Compton 2
Cerritos 2
Cerritos 1
La Mirada 1
Lakewood 1
Long Beach 2
Long Beach 3
Long Beach 6
Long Beach 8
Long Beach 1
Carson 1
Carson 2
Wilmington 1
Wilmington 2
Lomita 1
Chandler 3
PM-3
PM-4
PM-5
PM-6
Santa Monica Bay
PACIFIC OCEAN
San Pedro Bay
Alamitos Bay Marina
Harbor Lake
Marina Del Rey
Ballona Creek
Charnock
Newport
Inglewood
Fault
Uplift
Dominguez Channel
Compton Creek
Rio Hondo
Los Angeles River
San Gabriel River
Walnut Creek
San Jose Creek
North Fork Coyote Creek
Coyote Creek
Carbon Creek
0 2 4 Miles
WRD

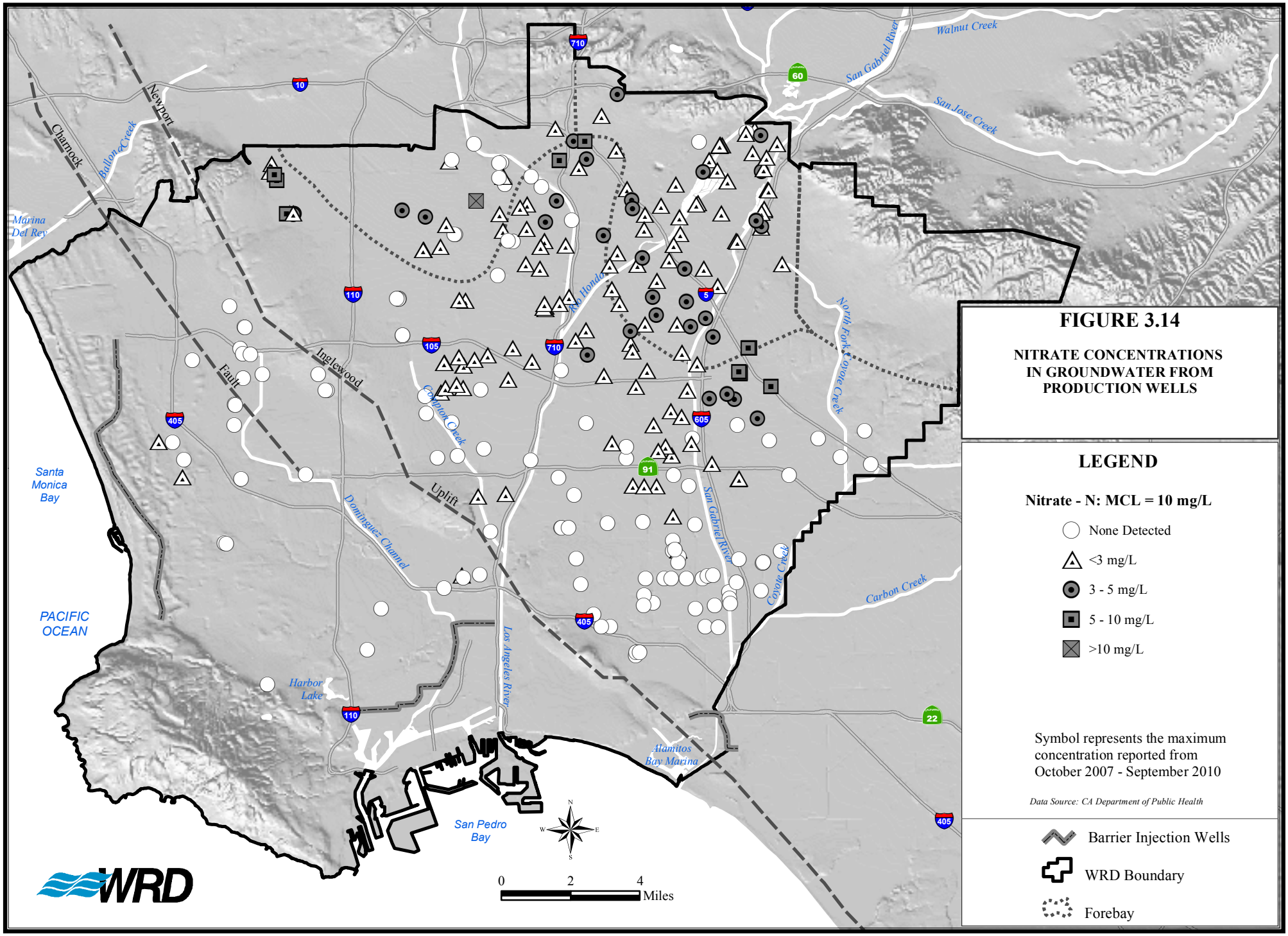


FIGURE 3.14
NITRATE CONCENTRATIONS IN GROUNDWATER FROM PRODUCTION WELLS
LEGEND
Nitrate - N: MCL = 10 mg/L
None Detected
<3 mg/L
3 - 5 mg/L
5 - 10 mg/L
>10 mg/L
Symbol represents the maximum concentration reported from October 2007 - September 2010
Data Source: CA Department of Public Health
Barrier Injection Wells
WRD Boundary
Forebay
Walnut Creek
San Gabriel River
San Jose Creek
Newport
Charnock
Ballona Creek
Marina Del Rey
Rio Hondo
North Fork Coyote Creek
Inglewood
Fault
Compton Creek
Santa Monica Bay
Uplift
Dominguez Channel
San Gabriel River
Coyote Creek
Carbon Creek
PACIFIC OCEAN
Los Angeles River
Harbor Lake
Alamitos Bay Marina
San Pedro Bay
0 2 4 Miles
WRD

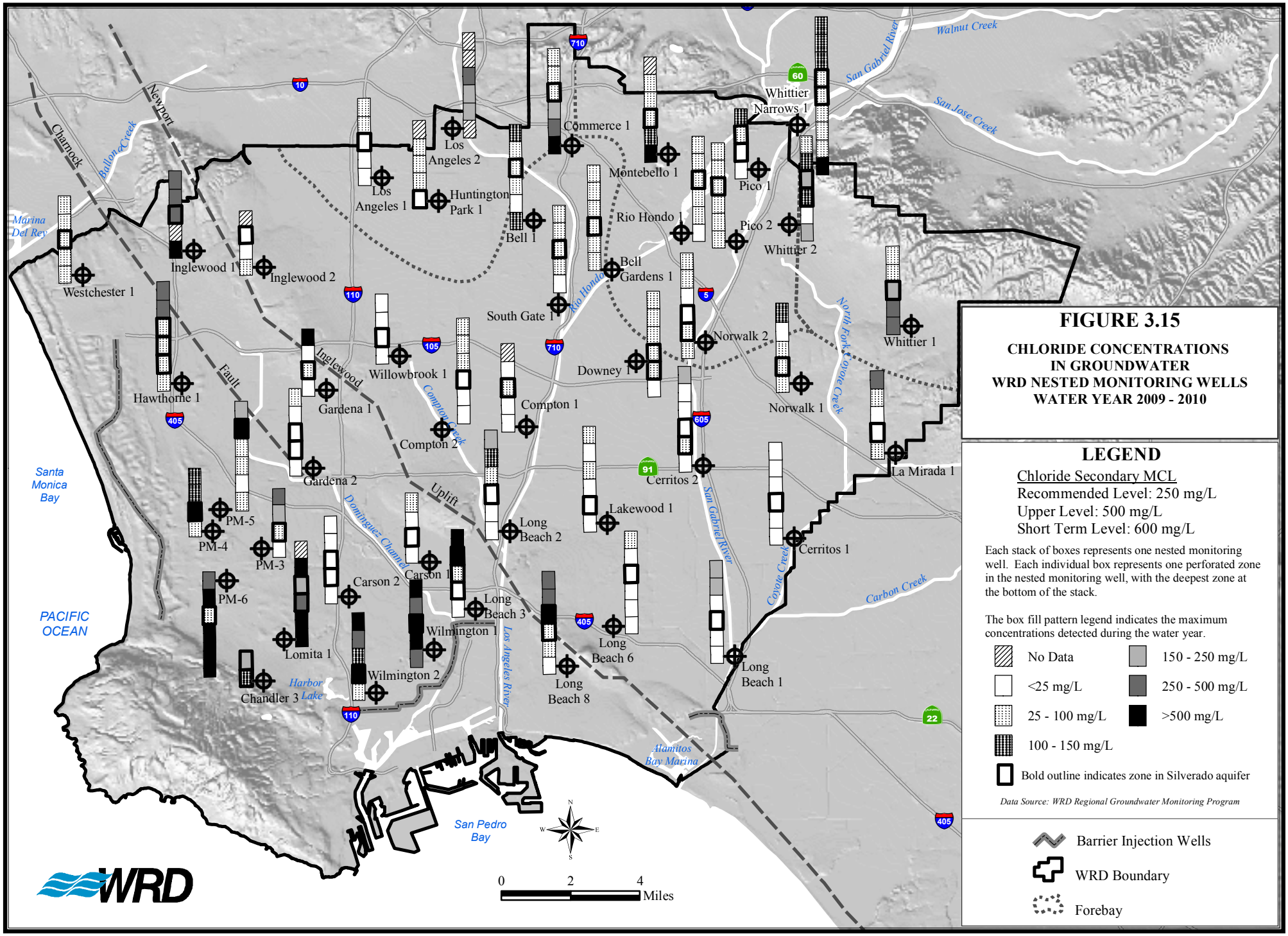


FIGURE 3.15
CHLORIDE CONCENTRATIONS
IN GROUNDWATER
WRD NESTED MONITORING WELLS
WATER YEAR 2009 - 2010
LEGEND
Chloride Secondary MCL
Recommended Level: 250 mg/L
Upper Level: 500 mg/L
Short Term Level: 600 mg/L
Each stack of boxes represents one nested monitoring well. Each individual box represents one perforated zone in the nested monitoring well, with the deepest zone at the bottom of the stack.
The box fill pattern legend indicates the maximum concentrations detected during the water year.
No Data
<25 mg/L
25 - 100 mg/L
100 - 150 mg/L
150 - 250 mg/L
250 - 500 mg/L
>500 mg/L
Bold outline indicates zone in Silverado aquifer
Data Source: WRD Regional Groundwater Monitoring Program
Barrier Injection Wells
WRD Boundary
Forebay
Westchester 1
Inglewood 1
Inglewood 2
Hawthorne 1
Gardena 1
Gardena 2
PM-5
PM-4
PM-3
PM-6
Lomita 1
Chandler 3
Los Angeles 1
Los Angeles 2
Huntington Park 1
Willowbrook 1
Carson 2
Carson 1
Wilmington 1
Wilmington 2
Bell 1
Commerce 1
South Gate 1
Compton 1
Compton 2
Long Beach 2
Long Beach 3
Long Beach 8
Montebello 1
Rio Hondo 1
Bell Gardens 1
Downey 1
Lakewood 1
Long Beach 6
Pico 1
Pico 2
Whittier 2
Whittier Narrows 1
Norwalk 2
Norwalk 1
Cerritos 2
Cerritos 1
Long Beach 1
Whittier 1
La Mirada 1
Marina Del Rey
Santa Monica Bay
PACIFIC OCEAN
San Pedro Bay
Harbor Lake
Alamitos Bay Marina
Charnock
Newport
Ballona Creek
Fault
Inglewood
Uplift
Dominguez Channel
Compton Creek
Rio Hondo
Los Angeles River
San Gabriel River
Walnut Creek
San Jose Creek
North Fork Coyote Creek
Coyote Creek
Carbon Creek
0 2 4 Miles
WRD

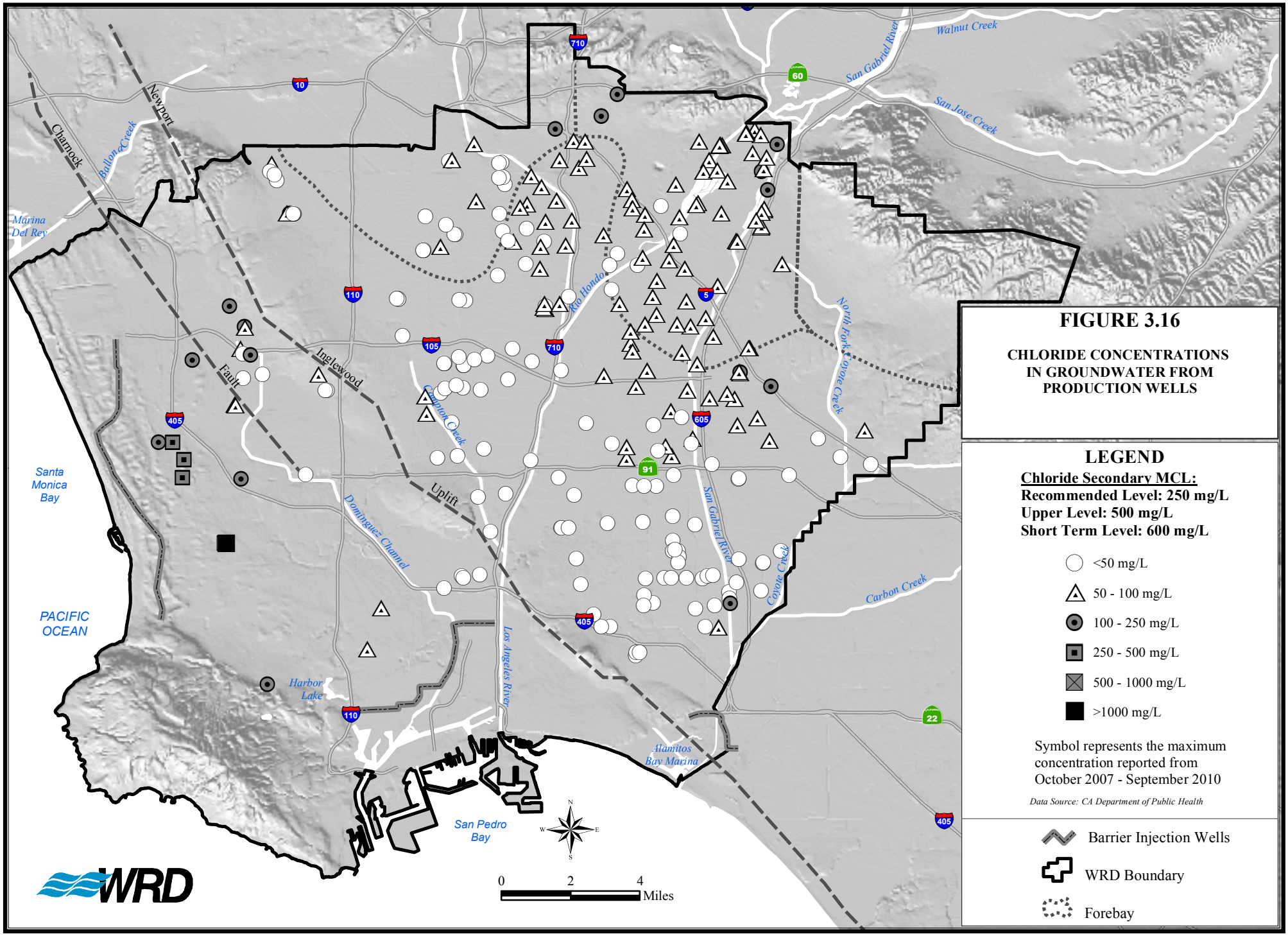


FIGURE 3.16
CHLORIDE CONCENTRATIONS IN GROUNDWATER FROM PRODUCTION WELLS
LEGEND
Chloride Secondary MCL:
Recommended Level: 250 mg/L
Upper Level: 500 mg/L
Short Term Level: 600 mg/L
<50 mg/L
50 - 100 mg/L
100 - 250 mg/L
250 - 500 mg/L
500 - 1000 mg/L
>1000 mg/L
Symbol represents the maximum concentration reported from October 2007 - September 2010
Data Source: CA Department of Public Health
Barrier Injection Wells
WRD Boundary
Forebay
Walnut Creek
San Gabriel River
San Jose Creek
Newport
Charnock
Ballona Creek
Marina Del Rey
Rio Hondo
North Fork Coyote Creek
Inglewood
Fault
Cloverlon Creek
Uplift
Dominguez Channel
San Gabriel River
Coyote Creek
Carbon Creek
Santa Monica Bay
PACIFIC OCEAN
Harbor Lake
Los Angeles River
Alamitos Bay Marina
San Pedro Bay
0 2 4 Miles
WRD

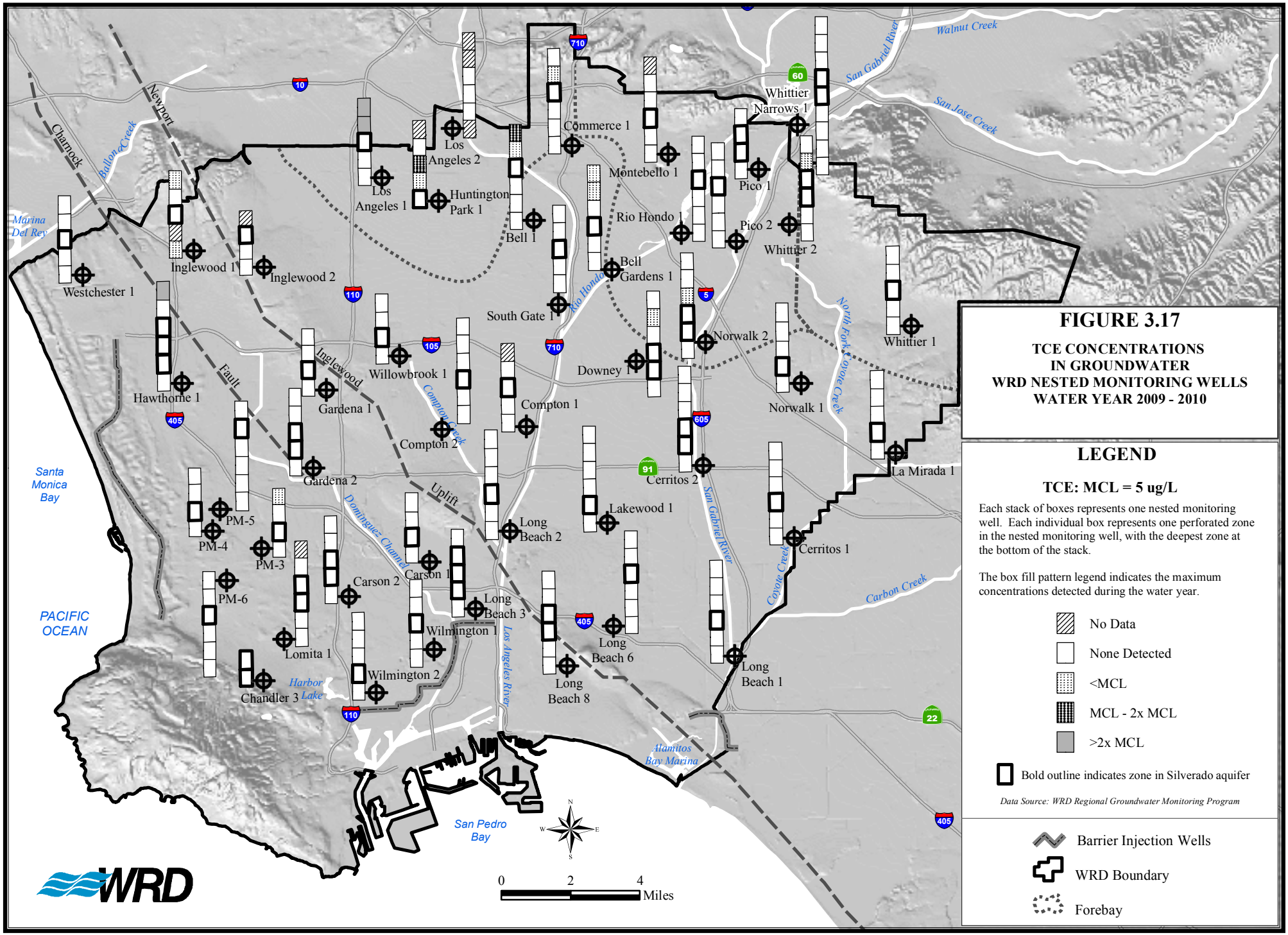


FIGURE 3.17
TCE CONCENTRATIONS
IN GROUNDWATER
WRD NESTED MONITORING WELLS
WATER YEAR 2009 - 2010
LEGEND
TCE: MCL = 5 ug/L
Each stack of boxes represents one nested monitoring well. Each individual box represents one perforated zone in the nested monitoring well, with the deepest zone at the bottom of the stack.
The box fill pattern legend indicates the maximum concentrations detected during the water year.
No Data
None Detected
<MCL
MCL - 2x MCL
>2x MCL
Bold outline indicates zone in Silverado aquifer
Data Source: WRD Regional Groundwater Monitoring Program
Barrier Injection Wells
WRD Boundary
Forebay
Westchester 1
Hawthorne 1
Inglewood 1
Inglewood 2
Los Angeles 1
Los Angeles 2
Huntington Park 1
Bell 1
Commerce 1
Montebello 1
Rio Hondo 1
Bell Gardens 1
Pico 1
Pico 2
Whittier Narrows 1
Whittier 2
Whittier 1
South Gate 1
Norwalk 2
Norwalk 1
Downey 1
Willowbrook 1
Gardena 1
Gardena 2
Compton 1
Compton 2
Cerritos 2
Cerritos 1
La Mirada 1
Lakewood 1
Long Beach 2
Long Beach 3
Long Beach 6
Long Beach 8
Long Beach 1
Carson 1
Carson 2
Wilmington 1
Wilmington 2
Lomita 1
Chandler 3
PM-3
PM-4
PM-5
PM-6
Santa Monica Bay
PACIFIC OCEAN
San Pedro Bay
Marina Del Rey
Harbor Lake
Alamitos Bay Marina
Charnock
Newport
Ballona Creek
Fault
Inglewood
Uplift
Dominguez Channel
Compton Creek
Rio Hondo
Los Angeles River
San Gabriel River
Coyote Creek
North Fork Coyote Creek
Carbon Creek
Walnut Creek
San Jose Creek
0 2 4 Miles
WRD

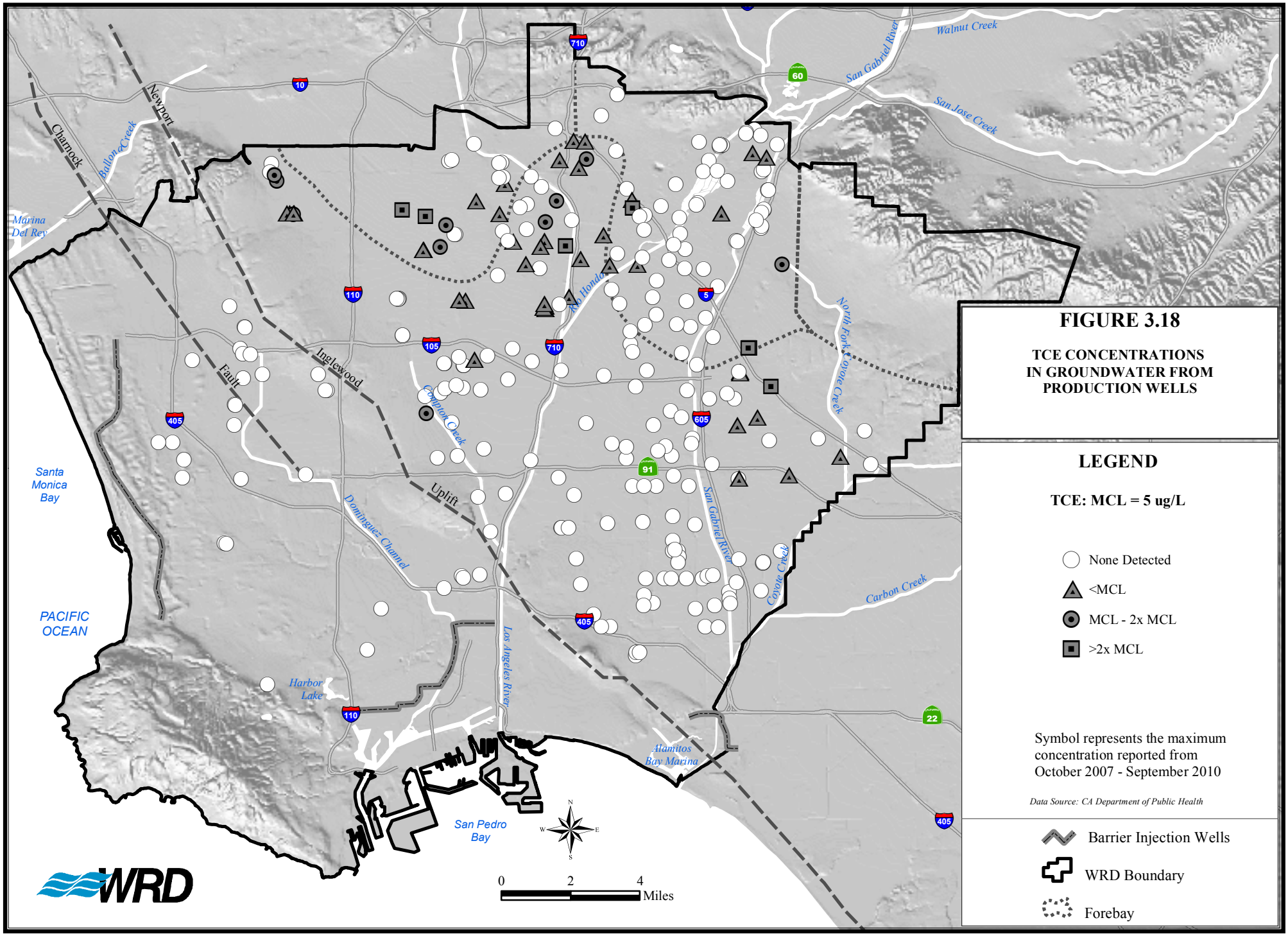


FIGURE 3.18
TCE CONCENTRATIONS IN GROUNDWATER FROM PRODUCTION WELLS
LEGEND
TCE: MCL = 5 ug/L
None Detected
<MCL
MCL - 2x MCL
>2x MCL
Symbol represents the maximum concentration reported from October 2007 - September 2010
Data Source: CA Department of Public Health
Barrier Injection Wells
WRD Boundary
Forebay
Walnut Creek
San Gabriel River
San Jose Creek
Newport
Charnock
Ballona Creek
Marina Del Rey
Rio Hondo
North Fork Coyote Creek
Inglewood
Fault
Compton Creek
Uplift
Dominguez Channel
San Gabriel River
Coyote Creek
Carbon Creek
Santa Monica Bay
PACIFIC OCEAN
Los Angeles River
Harbor Lake
Alamitos Bay Marina
San Pedro Bay
0 2 4 Miles
WRD

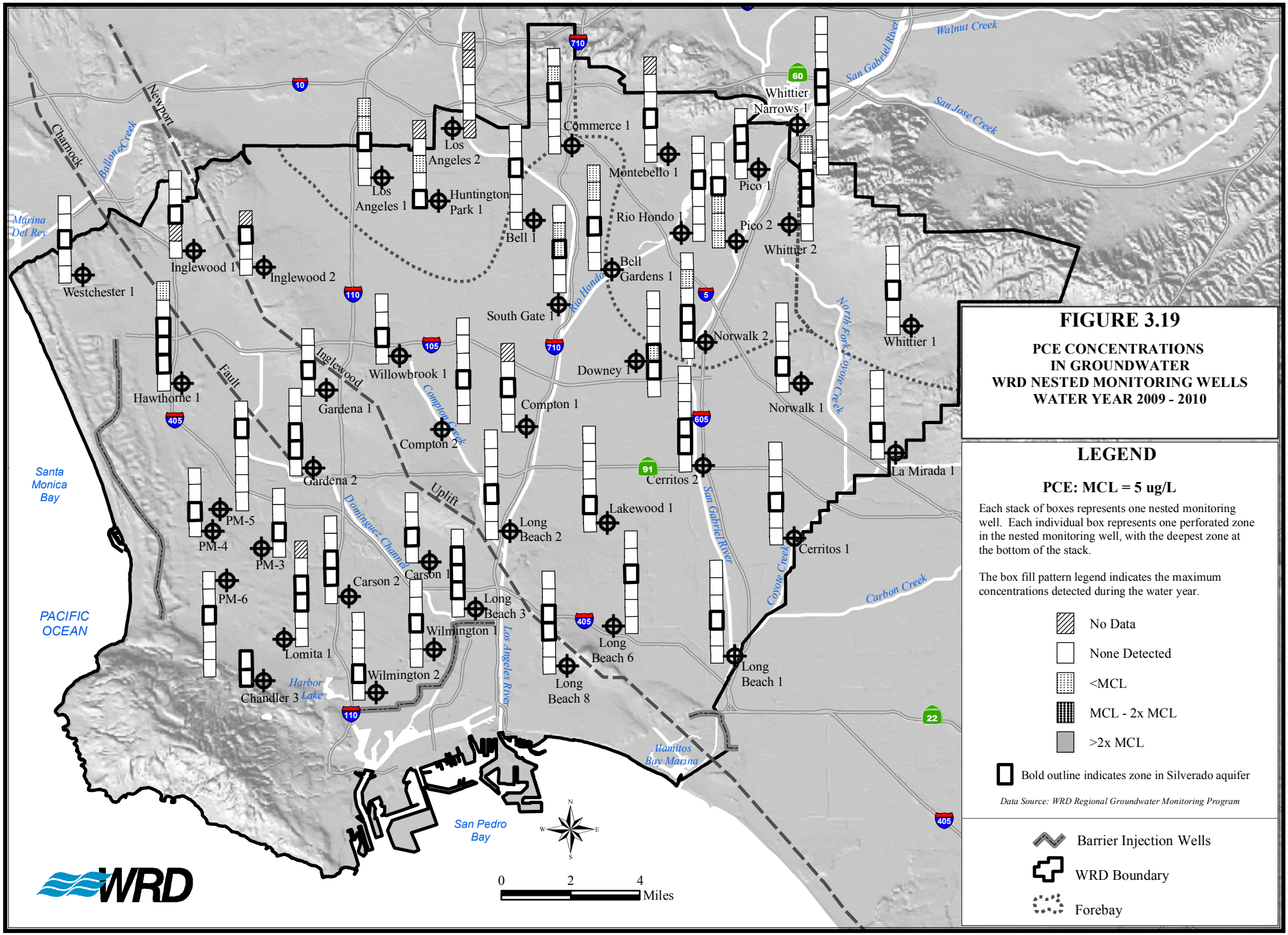


FIGURE 3.19
PCE CONCENTRATIONS
IN GROUNDWATER
WRD NESTED MONITORING WELLS
WATER YEAR 2009 - 2010
LEGEND
PCE: MCL = 5 ug/L
Each stack of boxes represents one nested monitoring well. Each individual box represents one perforated zone in the nested monitoring well, with the deepest zone at the bottom of the stack.
The box fill pattern legend indicates the maximum concentrations detected during the water year.
No Data
None Detected
<MCL
MCL - 2x MCL
>2x MCL
Bold outline indicates zone in Silverado aquifer
Data Source: WRD Regional Groundwater Monitoring Program
Barrier Injection Wells
WRD Boundary
Forebay
Westchester 1
Hawthorne 1
Inglewood 1
Inglewood 2
Los Angeles 1
Los Angeles 2
Huntington Park 1
Commerce 1
Bell 1
Montebello 1
Rio Hondo 1
Bell Gardens 1
Pico 1
Pico 2
Whittier Narrows 1
Whittier 2
Whittier 1
South Gate 1
Norwalk 2
Norwalk 1
Downey 1
Willowbrook 1
Gardena 1
Gardena 2
Compton 1
Compton 2
Cerritos 2
Cerritos 1
La Mirada 1
Lakewood 1
Long Beach 2
Long Beach 3
Long Beach 6
Long Beach 8
Long Beach 1
Carson 1
Carson 2
Wilmington 1
Wilmington 2
Lomita 1
Chandler 3
PM-3
PM-4
PM-5
PM-6
Santa Monica Bay
PACIFIC OCEAN
San Pedro Bay
Marina Del Rey
Harbor Lake
Alamitos Bay Marina
Charnock
Newport
Ballona Creek
Fault
Inglewood
Uplift
Dominguez Channel
Compton Creek
Rio Hondo
Los Angeles River
San Gabriel River
Coyote Creek
North Fork Coyote Creek
Carbon Creek
Walnut Creek
San Jose Creek
WRD
0 2 4 Miles

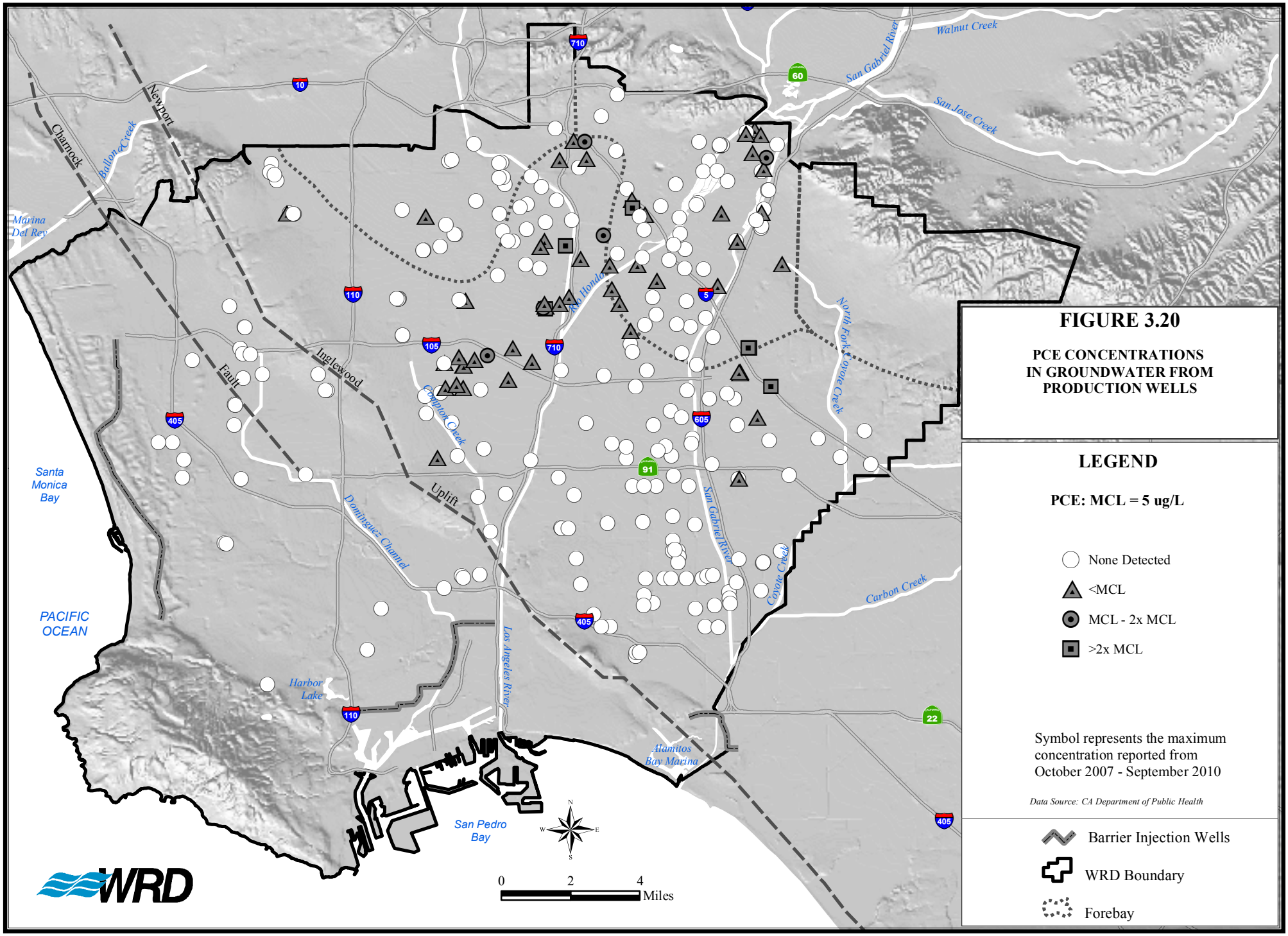


FIGURE 3.20
PCE CONCENTRATIONS IN GROUNDWATER FROM PRODUCTION WELLS
LEGEND
PCE: MCL = 5 ug/L
None Detected
<MCL
MCL - 2x MCL
>2x MCL
Symbol represents the maximum concentration reported from October 2007 - September 2010
Data Source: CA Department of Public Health
Barrier Injection Wells
WRD Boundary
Forebay
Walnut Creek
San Gabriel River
San Jose Creek
Newport
Charnock
Ballona Creek
Marina Del Rey
Rio Hondo
North Fork Coyote Creek
Inglewood
Fault
Compton Creek
Uplift
Dominguez Channel
San Gabriel River
Coyote Creek
Carbon Creek
Santa Monica Bay
PACIFIC OCEAN
Harbor Lake
Los Angeles River
Alamitos Bay Marina
San Pedro Bay
0 2 4 Miles
WRD

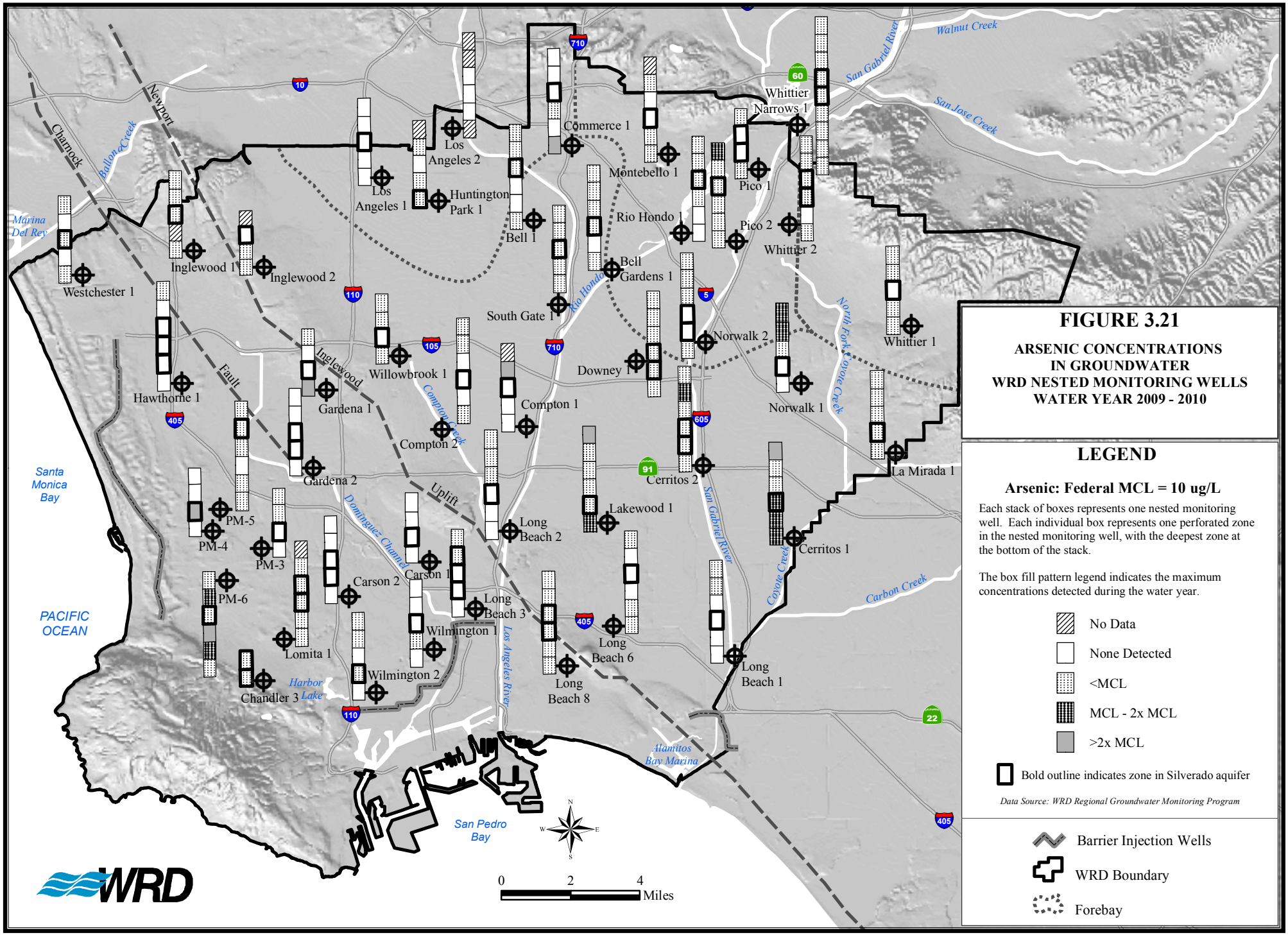


FIGURE 3.21
ARSENIC CONCENTRATIONS
IN GROUNDWATER
WRD NESTED MONITORING WELLS
WATER YEAR 2009 - 2010
LEGEND
Arsenic: Federal MCL = 10 ug/L
Each stack of boxes represents one nested monitoring well. Each individual box represents one perforated zone in the nested monitoring well, with the deepest zone at the bottom of the stack.
The box fill pattern legend indicates the maximum concentrations detected during the water year.
No Data
None Detected
<MCL
MCL - 2x MCL
>2x MCL
Bold outline indicates zone in Silverado aquifer
Data Source: WRD Regional Groundwater Monitoring Program
Barrier Injection Wells
WRD Boundary
Forebay
Westchester 1
Inglewood 1
Inglewood 2
Los Angeles 1
Los Angeles 2
Huntington Park 1
Commerce 1
Montebello 1
Whittier Narrows 1
Pico 1
Pico 2
Whittier 2
Whittier 1
Bell 1
Rio Hondo 1
Bell Gardens 1
South Gate 1
Norwalk 2
Norwalk 1
Downey 1
Hawthorne 1
Gardena 1
Gardena 2
Willowbrook 1
Compton 1
Compton 2
Cerritos 2
Cerritos 1
La Mirada 1
Lakewood 1
Long Beach 2
Long Beach 3
Long Beach 6
Long Beach 8
Long Beach 1
PM-5
PM-4
PM-3
PM-6
Carson 1
Carson 2
Wilmington 1
Wilmington 2
Lomita 1
Chandler 3
Harbor Lake
Marina Del Rey
Santa Monica Bay
PACIFIC OCEAN
San Pedro Bay
Alamitos Bay Marina
Charnock
Newport
Fault
Inglewood
Uplift
Dominguez Channel
Los Angeles River
San Gabriel River
Walnut Creek
San Jose Creek
Rio Hondo
Compton Creek
North Fork Coyote Creek
Coyote Creek
Carbon Creek
Ballona Creek
0 2 4 Miles
WRD

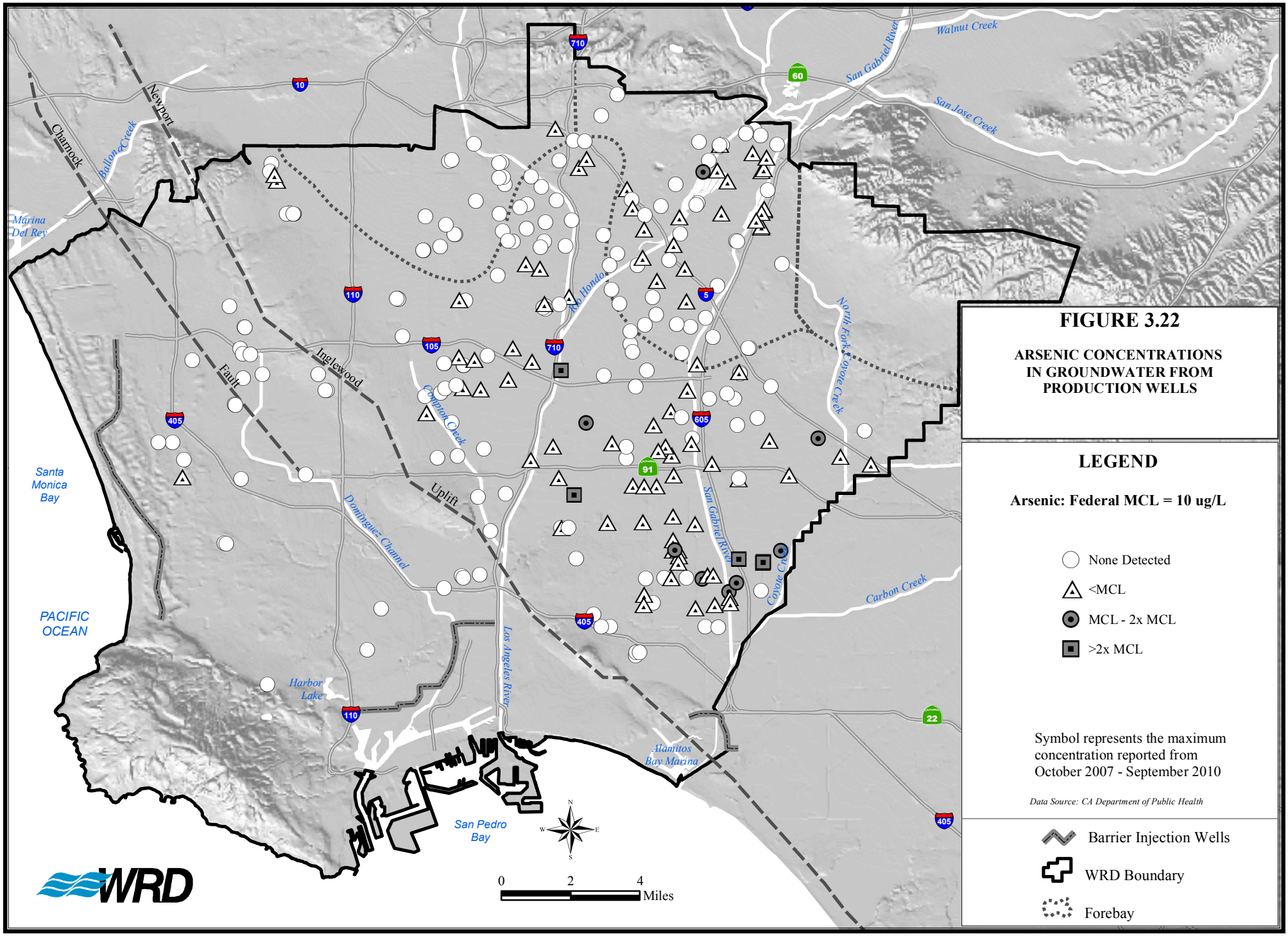


FIGURE 3.22
ARSENIC CONCENTRATIONS IN GROUNDWATER FROM PRODUCTION WELLS
LEGEND
Arsenic: Federal MCL = 10 ug/L
None Detected
<MCL
MCL - 2x MCL
>2x MCL
Symbol represents the maximum concentration reported from October 2007 - September 2010
Data Source: CA Department of Public Health
Barrier Injection Wells
WRD Boundary
Forebay
Walnut Creek
San Gabriel River
San Jose Creek
Newport
Charnock
Ballona Creek
Marina Del Rey
Rio Hondo
North Fork Coyote Creek
Inglewood
Fault
Compton Creek
Uplift
Dominguez Channel
Santa Monica Bay
PACIFIC OCEAN
Los Angeles River
Coyote Creek
Carbon Creek
Harbor Lake
Alamitos Bay Marina
San Pedro Bay
0 2 4 Miles
WRD

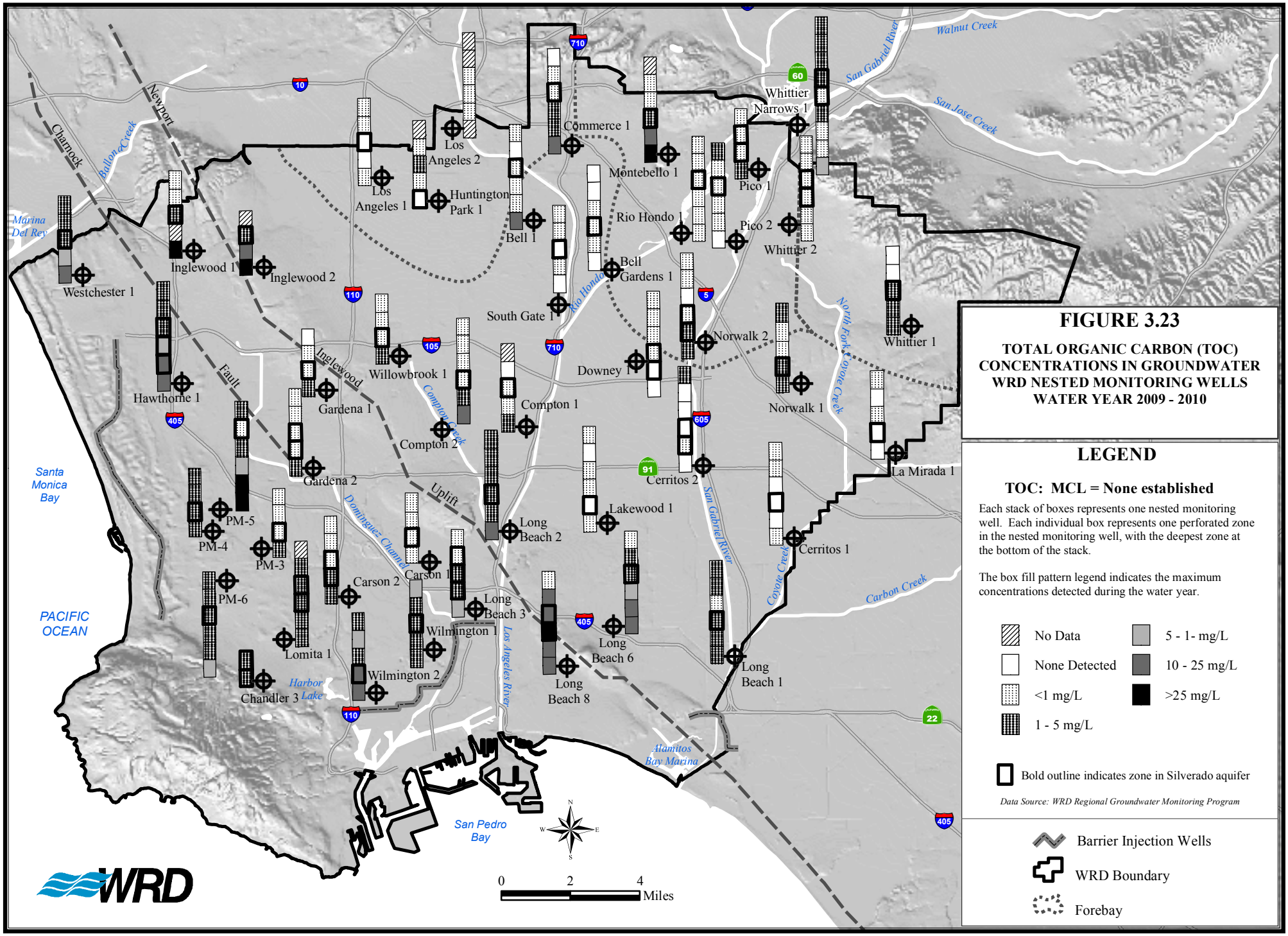


FIGURE 3.23
TOTAL ORGANIC CARBON (TOC) CONCENTRATIONS IN GROUNDWATER WRD NESTED MONITORING WELLS WATER YEAR 2009 - 2010
LEGEND
TOC: MCL = None established
Each stack of boxes represents one nested monitoring well. Each individual box represents one perforated zone in the nested monitoring well, with the deepest zone at the bottom of the stack.
The box fill pattern legend indicates the maximum concentrations detected during the water year.
No Data
None Detected
<1 mg/L
1 - 5 mg/L
5 - 1- mg/L
10 - 25 mg/L
>25 mg/L
Bold outline indicates zone in Silverado aquifer
Data Source: WRD Regional Groundwater Monitoring Program
Barrier Injection Wells
WRD Boundary
Forebay
Westchester 1
Hawthorne 1
Inglewood 1
Inglewood 2
Los Angeles 1
Los Angeles 2
Huntington Park 1
Bell 1
Commerce 1
Montebello 1
Rio Hondo 1
Bell Gardens 1
Pico 1
Pico 2
Whittier Narrows 1
Whittier 2
Whittier 1
South Gate 1
Norwalk 2
Norwalk 1
Downey 1
Willowbrook 1
Gardena 1
Gardena 2
Compton 1
Compton 2
Cerritos 2
Cerritos 1
La Mirada 1
Lakewood 1
Long Beach 2
Long Beach 3
Long Beach 6
Long Beach 8
Long Beach 1
Carson 1
Carson 2
Wilmington 1
Wilmington 2
Lomita 1
Chandler 3
PM-3
PM-4
PM-5
PM-6
Santa Monica Bay
PACIFIC OCEAN
San Pedro Bay
Alamitos Bay Marina
Harbor Lake
Marina Del Rey
Ballona Creek
Charnock
Newport
Inglewood
Fault
Uplift
Dominguez Channel
Compton Creek
Rio Hondo
Los Angeles River
San Gabriel River
Coyote Creek
North Fork Coyote Creek
Walnut Creek
San Jose Creek
Carbon Creek
0 2 4 Miles
WRD

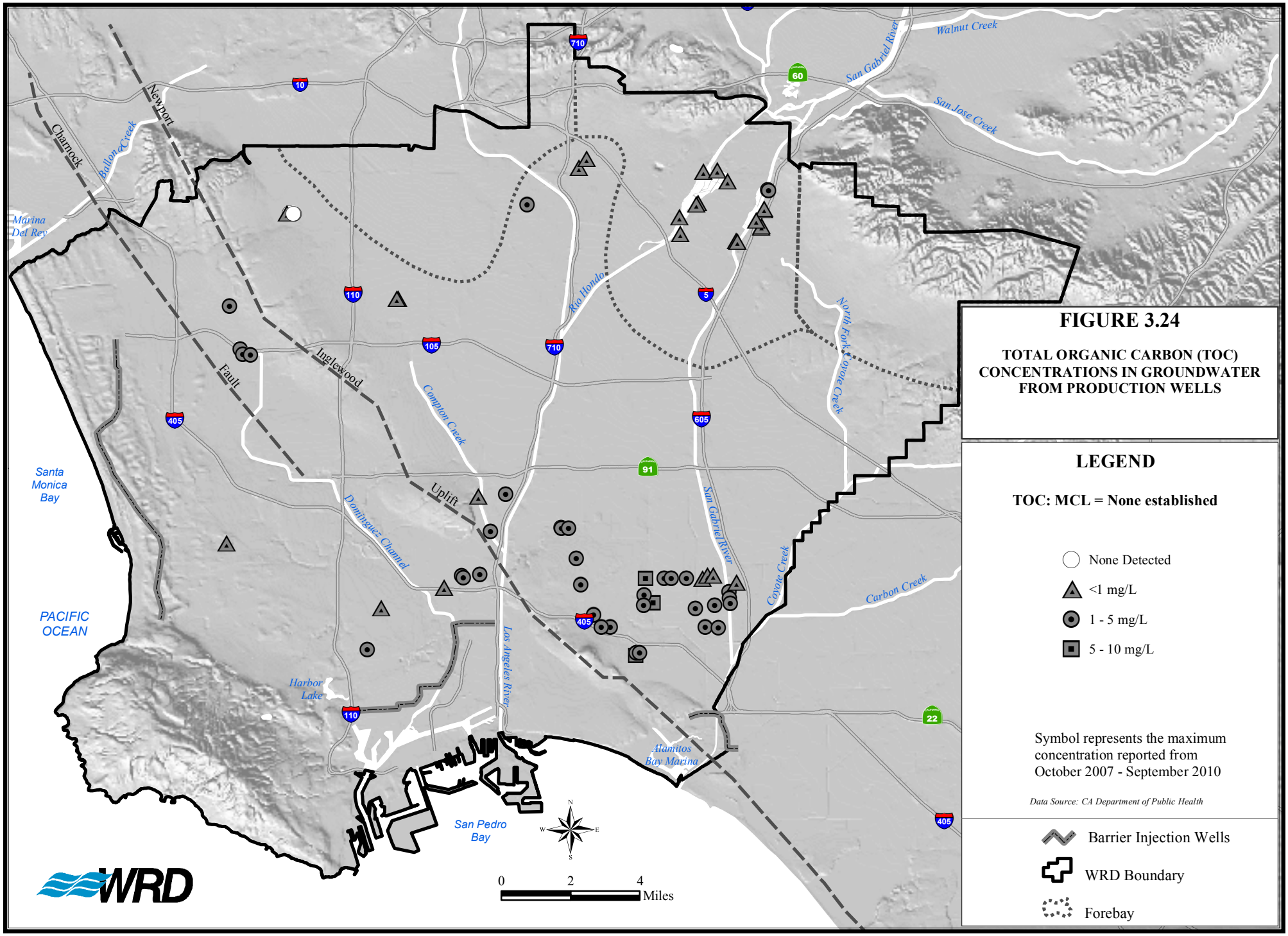
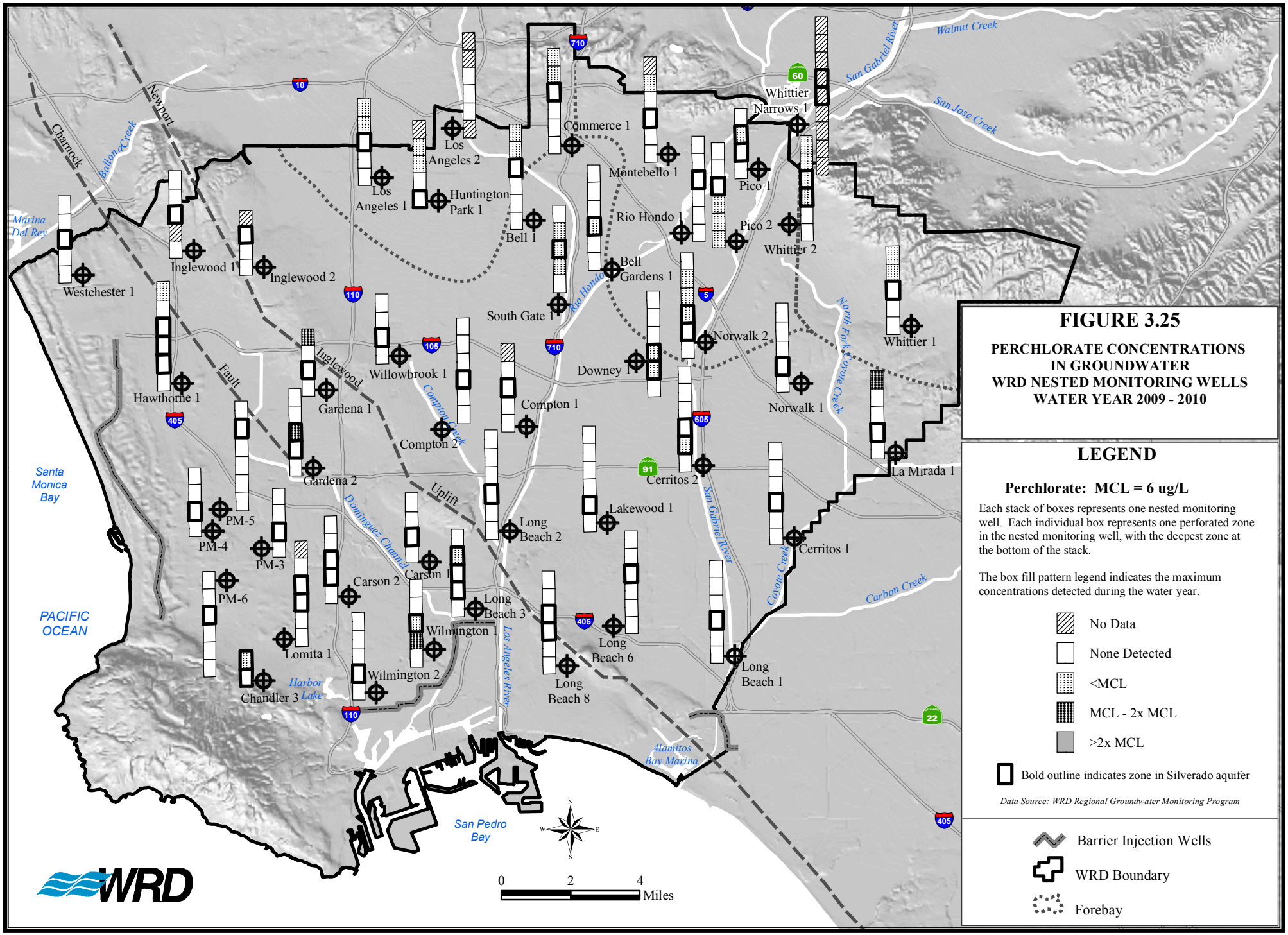


FIGURE 3.24
TOTAL ORGANIC CARBON (TOC) CONCENTRATIONS IN GROUNDWATER FROM PRODUCTION WELLS
LEGEND
TOC: MCL = None established
None Detected
<1 mg/L
1 - 5 mg/L
5 - 10 mg/L
Symbol represents the maximum concentration reported from October 2007 - September 2010
Data Source: CA Department of Public Health
Barrier Injection Wells
WRD Boundary
Forebay
Walnut Creek
San Gabriel River
San Jose Creek
Newport
Charnock
Ballon Creek
Marina Del Rey
Rio Hondo
North Fork Coyote Creek
Inglewood
Fault
Compton Creek
Uplift
Dominguez Channel
San Gabriel River
Coyote Creek
Carbon Creek
Santa Monica Bay
PACIFIC OCEAN
Harbor Lake
Los Angeles River
Alamitos Bay Marina
San Pedro Bay
710
10
60
110
105
5
405
605
91
22
0
2
4
Miles
WRD


Walnut Creek
San Gabriel River
San Jose Creek
Whittier Narrows 1
Commerce 1
Los Angeles 2
Los Angeles 1
Huntington Park 1
Montebello 1
Pico 1
Pico 2
Whittier 2
Rio Hondo 1
Bell 1
Bell Gardens 1
Rio Hondo
Marina Del Rey
Westchester 1
Inglewood 1
Inglewood 2
Charnock
Ballona Creek
Newport
Fault
Inglewood
South Gate 1
Norwalk 2
Whittier 1
North Fork Coyote Creek
Downey 1
Willowbrook 1
Hawthorne 1
Gardena 1
Compton Creek
Compton 1
Compton 2
Norwalk 1
Cerritos 2
La Mirada 1
Santa Monica Bay
Gardena 2
Uplift
Dominguez Channel
Lakewood 1
San Gabriel River
PM-5
PM-4
PM-3
Long Beach 2
Cerritos 1
Carson 2
Carson 1
PM-6
Long Beach 3
Coyote Creek
Carbon Creek
PACIFIC OCEAN
Wilmington 1
Long Beach 6
Lomita 1
Long Beach 1
Wilmington 2
Harbor Lake
Chandler 3
Long Beach 8
Los Angeles River
Alamitos Bay Marina
San Pedro Bay
N
W
E
S
0
2
4
Miles
WRD
FIGURE 3.25
PERCHLORATE CONCENTRATIONS IN GROUNDWATER WRD NESTED MONITORING WELLS WATER YEAR 2009 - 2010
LEGEND
Perchlorate: MCL = 6 ug/L
Each stack of boxes represents one nested monitoring well. Each individual box represents one perforated zone in the nested monitoring well, with the deepest zone at the bottom of the stack.
The box fill pattern legend indicates the maximum concentrations detected during the water year.
No Data
None Detected
<MCL
MCL - 2x MCL
>2x MCL
Bold outline indicates zone in Silverado aquifer
Data Source: WRD Regional Groundwater Monitoring Program
Barrier Injection Wells
WRD Boundary
Forebay

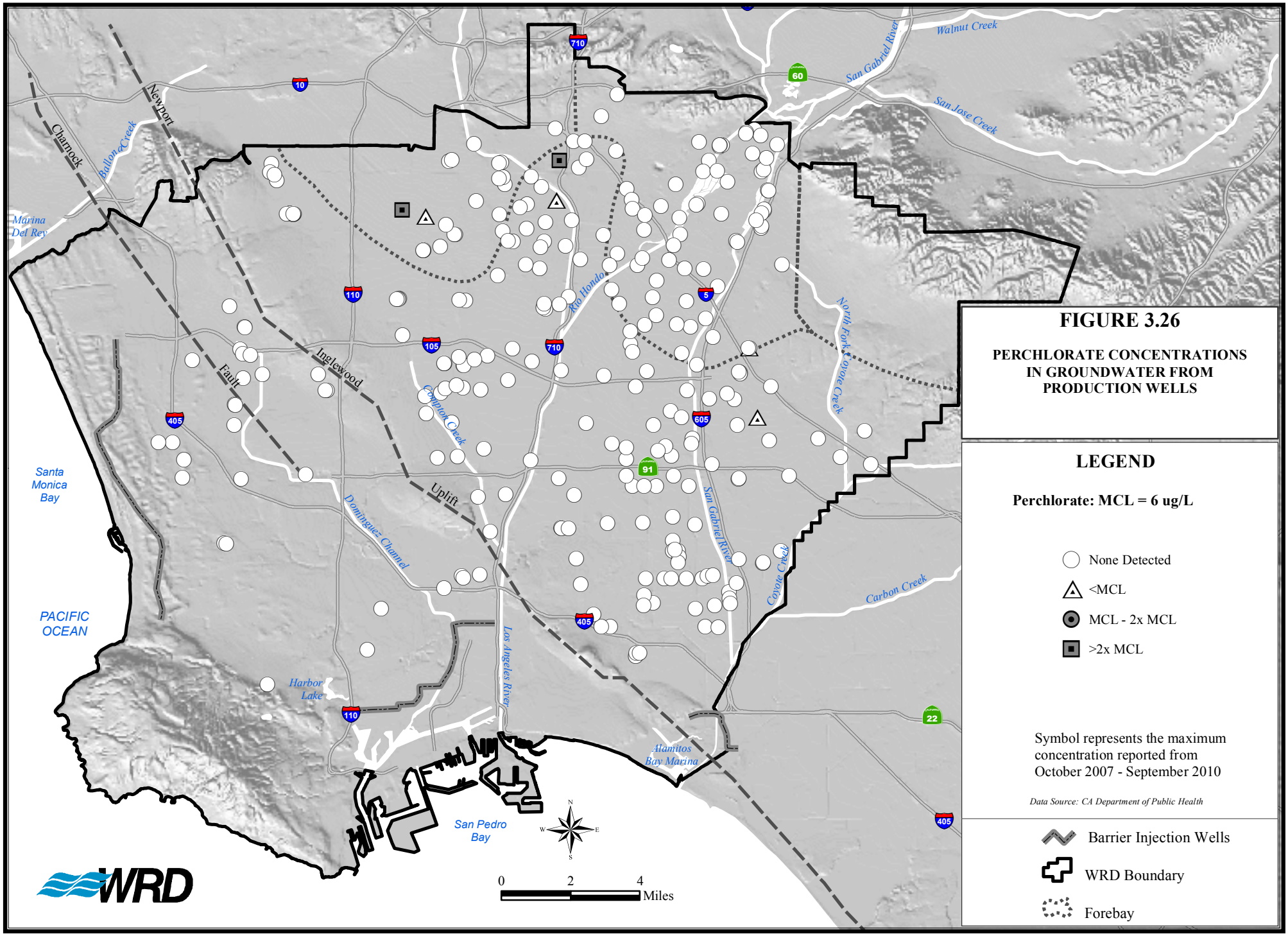


FIGURE 3.26
PERCHLORATE CONCENTRATIONS IN GROUNDWATER FROM PRODUCTION WELLS
LEGEND
Perchlorate: MCL = 6 ug/L
None Detected
<MCL
MCL - 2x MCL
>2x MCL
Symbol represents the maximum concentration reported from October 2007 - September 2010
Data Source: CA Department of Public Health
Barrier Injection Wells
WRD Boundary
Forebay
Walnut Creek
San Gabriel River
San Jose Creek
Newport
Charnock
Ballona Creek
Marina Del Rey
Rio Hondo
North Fork Coyote Creek
Inglewood
Fault
Compton Creek
Uplift
Dominguez Channel
San Gabriel River
Coyote Creek
Carbon Creek
Santa Monica Bay
PACIFIC OCEAN
Los Angeles River
Harbor Lake
Alamitos Bay Marina
San Pedro Bay
0 2 4 Miles
WRD

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."

Water Replenishment District
of Southern California
4040 Paramount Boulevard
Lakewood, CA 90712
Tel. (562) 921-5521
Fax (562) 921-6101
www.wrd.org

Appendix D

1965 Central Basin Judgement

LAGERLOF, SENECAL, DRESCHER & SWIFT
301 North Lake Avenue, 10th Floor
Pasadena, California 91101
(818) 793-9400 or (213) 385-4345

SUPERIOR COURT OF THE STATE OF CALIFORNIA

FOR THE COUNTY OF LOS ANGELES

CENTRAL AND WEST BASIN WATER REPLENISHMENT DISTRICT, etc., Plaintiff, v. CHARLES E. ADAMS, et al., Defendants.	No. 786,656 SECOND AMENDED JUDGMENT (Declaring and establishing water rights in Central Basin and enjoining extractions therefrom in excess of specified quantities.)
CITY OF LAKEWOOD, a municipal corporation, Cross-Complainant, v. CHARLES E. ADAMS, et al., Cross-Defendants.	

The above-entitled matter duly and regularly came on for trial in Department 73 of the above-entitled Court (having been transferred thereto from Department 75 by order of the presiding Judge), before the Honorable Edmund M. Moor, specially assigned Judge, on May 17, 1965, at 10:00 a.m. Plaintiff was represented by its attorneys BEWLEY, KNOOP, LASSLEBEN & WHELAN,

MARTIN E. WHELAN, JR., and EDWIN H. VAIL, JR., and cross-complainant was represented by its attorney JOHN S. TODD. Various defendants and cross-defendants were also represented at the trial. Evidence both oral and documentary was introduced. The trial continued from day to day on May 17, 18, 19, 20, 21 and 24, 1965, at which time it was continued by order of Court for further trial on August 25, 1965, at 10:00 a.m. in Department 73 of the above-entitled Court; whereupon, having then been transferred to Department 74, trial was resumed in Department 74 on August 25, 1965, and then continued to August 27, 1965 at 10:00 a.m. in the same Department. On the latter date, trial was concluded and the matter submitted. Findings of fact and conclusions of law have heretofore been signed and filed. Pursuant to the reserved and continuing jurisdiction of the court under the judgment herein, certain amendments to said judgment and temporary orders have heretofore been made and entered. Continuing jurisdiction of the court for this action is currently assigned to HON. FLORENCE T. PICKARD. Motion of Plaintiff herein for further amendments to the judgment, notice thereof and of the hearing thereon having been duly and regularly given to all parties, came on for hearing in Department 38 of the above-entitled court on MAY 6, 1991 at 8:45 a.m. before said HONORABLE PICKARD. Plaintiff was represented by its attorneys LAGERLOF, SENECAL, DRESCHER & SWIFT, by William F. Kruse. Various defendants were represented by counsel of record appearing on the Clerk's records. Hearing thereon was concluded on that date. The within "Second Amended Judgment" incorporates amendments and orders heretofore made to the extent presently operable and

amendments pursuant to said last mentioned motion. To the extent this Amended Judgment is a restatement of the judgment as heretofore amended, it is for convenience in incorporating all matters in one document, is not a readjudication of such matters and is not intended to reopen any such matters. As used hereinafter the word "judgment" shall include the original judgment as amended to date. In connection with the following judgment, the following terms, words, phrases and clauses are used by the Court with the following meanings:

"Administrative Year" means the water year until operation under the judgment is converted to a fiscal year pursuant to Paragraph 4, Part I, p. 53 hereof, whereupon it shall mean a fiscal year, including the initial 'short fiscal year' therein provided.

"Allowed Pumping Allocation" is that quantity in acre feet which the Court adjudges to be the maximum quantity which a party should be allowed to extract annually from Central Basin as set forth in Part I hereof, which constitutes 80% of such party's Total Water Right.

"Allowed Pumping Allocation for a particular Administrative year" and "Allowed Pumping Allocation in the following Administrative year" and similar clauses, mean the Allowed Pumping Allocation as increased in a particular Administrative year by any authorized carryovers pursuant to Part III, Subpart A of this judgment and as reduced by reason of any over-extractions in a previous Administrative year.

"Artificial Replenishment" is the replenishment of Central Basin achieved through the spreading of imported or reclaimed

water for percolation thereof into Central Basin by a governmental agency.

"Base Water Right" is the highest continuous extractions of water by a party from Central Basin for a beneficial use in any period of five consecutive years after the commencement of overdraft in Central Basin and prior to the commencement of this action, as to which there has been no cessation of use by that party during any subsequent period of five consecutive years. As employed in the above definition, the words "extractions of water by a party" and "cessation of use by that party" include such extractions and cessations by any predecessor or predecessors in interest.

"Calendar Year" is the twelve month period commencing January 1 of each year and ending December 31 of each year.

"Central Basin" is the underground water basin or reservoir underlying Central Basin Area, the exterior boundaries of which Central Basin are the same as the exterior boundaries of Central Basin Area.

"Central Basin Area" is the territory described in Appendix "1" to this judgment, and is a segment of the territory comprising Plaintiff District.

"Declared water emergency" shall mean a period commencing with the adoption of a resolution of the Board of Directors of the Central and West Basin Water Replenishment District declaring that conditions within the Central Basin relating to natural and imported supplies of water are such that, without implementation of the water emergency provisions of this Judgment, the water resources of the Central Basin risk degradation. In making such

declaration, the Board of Directors shall consider any information and requests provided by water producers, purveyors and other affected entities and may, for that purpose, hold a public hearing in advance of such declaration. A Declared Water Emergency shall extend for one (1) year following such resolution, unless sooner ended by similar resolution.

"Extraction", "extractions", "extracting", "extracted", and other variations of the same noun and verb, mean pumping, taking, diverting or withdrawing ground water by any manner or means whatsoever from Central Basin.

"Fiscal Year" is the twelve (12) month period July 1 through June 30 following.

"Imported Water" means water brought into Central Basin Area from a non-tributary source by a party and any predecessors in interest, either through purchase directly from The Metropolitan Water District of Southern California or by direct purchase from a member agency thereof, and additionally as to the Department of Water and Power of the City of Los Angeles, water brought into Central Basin Area by that party by means of the Owens River Aqueduct.

"Imported Water Use Credit" is the annual amount, computed on a calendar year basis, of imported water which any party and any predecessors in interest, who have timely made the required filings under Water Code Section 1005.1, have imported into Central Basin Area in any calendar year and subsequent to July 9, 1951, for beneficial use therein, but not exceeding the amount by which that party and any predecessors in interest reduces his or their extractions of ground water from Central Basin in that

calendar year from the level of his or their extractions in the preceding calendar year, or in any prior calendar year not earlier than the calendar year 1950, whichever is the greater.

"Natural Replenishment" means and includes all processes other than "Artificial Replenishment" by which water may become a part of the ground water supply of Central Basin.

"Natural Safe Yield" is the maximum quantity of ground water, not in excess of the long term average annual quantity of Natural Replenishment, which may be extracted annually from Central Basin without eventual depletion thereof or without otherwise causing eventual permanent damage to Central Basin as a source of ground water for beneficial use, said maximum quantity being determined without reference to Artificial Replenishment.

"Overdraft" is that condition of a ground water basin resulting from extractions in any given annual period or periods in excess of the long term average annual quantity of Natural Replenishment, or in excess of that quantity which may be extracted annually without otherwise causing eventual permanent damage to the basin.

"Party" means a party to this action. Whenever the term "party" is used in connection with a quantitative water right, or any quantitative right, privilege or obligation, or in connection with the assessment for the budget of the Watermaster, it shall be deemed to refer collectively to those parties to whom are attributed a Total Water Right in Part I of this judgment.

"Person" or "persons" include individuals, partnerships, associations, governmental agencies and corporations, and any and all types of entities.

"Total Water Right" is the quantity arrived at in the same manner as in the computation of "Base Water Right", but including as if extracted in any particular year the Imported Water Use Credit, if any, to which a particular party may be entitled.

"Water" includes only non-saline water, which is that having less than 1,000 parts of chlorides to 1,000,000 parts of water.

"Water Year" is the 12-month period commencing October 1 of each year and ending September 30th of the following year.

In those instances where any of the above-defined words, terms, phrases or clauses are utilized in the definition of any of the other above-defined words, terms, phrases and clauses, such use is with the same meaning as is above set forth.

NOW THEREFORE, IT IS ORDERED, DECLARED, ADJUDGED AND DECREED WITH RESPECT TO THE ACTION AND CROSS-ACTION AS FOLLOWS:

I. DECLARATION AND DETERMINATION OF WATER RIGHTS OF PARTIES; RESTRICTION ON THE EXERCISE THEREOF.[1]

1. Determination of Rights of Parties.

(a) Each party, except defendants, The City of Los Angeles and Department of Water and Power of the City of Los Angeles, whose name is hereinafter set forth in the tabulation at the conclusion of Subpart 3 of Part 1, and after whose name there

[1]Headings in the judgment are for purposes of reference and the language of said headings do not constitute, other than for such purpose, a portion of this judgment.

appears under the column "Total Water Right" a figure other than "0", was the owner of and had the right to extract annually groundwater from Central Basin for beneficial use in the quantity set forth after that party's name under said column "Total Water Right" pursuant to the Judgment as originally entered herein. Attached hereto as Appendix "2" and by this reference made a part hereof as though fully set forth are the water rights of parties and successors in interest as they existed as of the close of the water year ending September 30, 1978 in accordance with the Watermaster Reports on file with this Court and the records of the Plaintiff. This tabulation does not take into account additions or subtractions from any Allowed Pumping Allocation of a producer for the 1978-79 water year, nor other adjustments not representing change in fee title to water rights, such as leases of water rights, nor does it include the names of lessees of landowners where the lessees are exercising the water rights. The exercise of all water rights is subject, however, to the provisions of this Judgment as hereinafter contained. All of said rights are of the same legal force and effect and are without priority with reference to each other. Each party whose name is hereinafter set forth in the tabulation set forth in Appendix "2" of this judgment, and after whose name there appears under the column "Total Water Right" the figure "0" owns no rights to extract any ground water from Central Basin, and has no right to extract any ground water from Central Basin.

(b) Defendant The City of Los Angeles is the owner of the right to extract fifteen thousand (15,000) acre feet per annum of ground water from Central Basin. Defendant Department

of Water and Power of the City of Los Angeles has no right to extract ground water from Central Basin except insofar as it has the right, power, duty or obligation on behalf of defendant The City of Los Angeles to exercise the water rights in Central Basin of defendant The City of Los Angeles. The exercise of said rights are subject, however, to the provisions of this judgment hereafter contained, including but not limited to, sharing with other parties in any subsequent decreases or increases in the quantity of extractions permitted from Central Basin, pursuant to continuing jurisdiction of the Court, on the basis that fifteen thousand (15,000) acre feet bears to the Allowed Pumping Allocations of the other parties.

(c) No party to this action is the owner of or has any right to extract ground water from Central Basin except as herein affirmatively determined.

2. Parties Enjoined as Regards Quantities of Extractions.

(a) Each party, other than The State of California and The City of Los Angeles and Department of Water and Power of The City of Los Angeles, is enjoined and restrained in any Administrative year commencing after the date this judgment becomes final from extracting from Central Basin any quantity of Water greater than the party's Allowed Pumping Allocation as hereinafter set forth next to the name of the party in the tabulation appearing in Appendix 2 at the end of this Judgment, subject to further provisions of this judgment. Subject to such further provisions, the officials, agents and employees of The State of California are enjoined and restrained in any such Administrative year from extracting from Central Basin collectively any quantity of water

greater than the Allowed Pumping Allocation of The State of California as hereinafter set forth next to the name of that party in the same tabulation. Each party adjudged and declared above not to be the owner of and not to have the right to extract ground water from Central Basin is enjoined and restrained in any Administrative year commencing after the date this judgment becomes final from extracting any ground water from Central Basin, except as may be hereinafter permitted to any such party under the Exchange Pool provisions of this judgment.

(b) Defendant The City of Los Angeles is enjoined and restrained in any Administrative year commencing after the date this judgment becomes final from extracting from Central Basin any quantity of water greater than fifteen thousand (15,000) acre feet, subject to further provisions of this judgment, including but not limited to, sharing with other parties in any subsequent decreases or increases in the quantity of extractions permitted from Central Basin by parties, pursuant to continuing jurisdiction of the Court, on the basis that fifteen thousand (15,000) acre feet bears to the Allowed Pumping Allocations of the other parties. Defendant Department of Water and Power of The City of Los Angeles is enjoined and restrained in any Administrative year commencing after the date this judgment becomes final from extracting from Central Basin any quantity of water other than such as it may extract on behalf of defendant The City of Los Angeles, and which extractions, along with any extractions by said City, shall not exceed that quantity permitted by this judgment to that City in any Administrative year. Whenever in this judgment the term "Allowed Pumping

Allocation" appears, it shall be deemed to mean as to defendant The City of Los Angeles the quantity of fifteen thousand (15,000) acre feet.

Name [2]	Total Water Right	Allowed Pumping Allocation
J. P. Abbott, Inc.	21	17
Charles E. Adams (Corty Van Dyke, tenant) (see additional listing below for Charles E. Adams)	8	6
Charles E. Adams and Rhoda E. Adams	5	4
Juan Aguayo and Salome Y. Aguayo	1	1
Aguiar Dairy, Inc.	33	26
Airfloor Company of California, Inc.	1	1
J. N. Albers and Nellie Albers	98	78
Jake J. Alewyn and Mrs. Jake J. Alewyn aka Normalie May Alewyn (see listing under name of Victor E. Gamboni)		
Tom Alger and Hilda Alger	9	7
Clarence M. Alvis and Doris M. Alvis	0	0
American Brake Shoe Company	52	42

[2]Parties and Rights as originally adjudicated

Name	Total Water Right	Allowed Pumping Allocation
American Pipe and Construction Co.	188	150
Anaconda American Brass Company	0	0
Gerrit Anker (see listing under name of Agnes De Vries		
Archdiocese of Los Angeles Education & Welfare Corporation	8	6
George W. Armstrong and Ruth H. Armstrong (Armstrong Poultry Ranch, tenant)	28	22
Artesia Cemetery District	30	24
Artesia Milling Company (see listing under name of Dick Zuidervaart)		
Artesia School District	51	41
Arthur Land Co., Inc.	13	10
Charles Arzouman and Neuart Arzouman	1	1
Associated Southern Investment Company (William R. Morris, George V. Gutierrez and Mrs. Socorro Gutierrez, tenants and licensees)	16	13
The Atchison, Topeka and Santa Fe Railway Co.	124	99
Atkinson Brick Company	11	9
Arthur Atsma (see listing under name of Andrew De Voss)		
B.F.S. Mutual Water Company	183	146
Henry Baar (see listing under name of Steve Stefani, Sr.)		
Vernon E. Bacon (see listing under name of Southern California Edison Company)		

Name	Total Water Right	Allowed Pumping Allocation
Adolph Bader and Gesine Bader (Fred Bader, tenant)	14	11
K. R. Bailey and Virginia R. Bailey	1	1
Dave Bajema (see listing under name of Peter Dotinga)		
Donald L. Baker and Patsy Ruth Baker	5	4
Allen Bakker	0	0
Sam Bangma and Ida Bangma	17	14
Bank of America National Trust and Savings Association, as Trustee of Trust created by Will of Tony V. Freitas, Deceased (Frank A. Gonsalves, tenant)	29	23
Emma Barbaria, as to undivided 1/2 interest; John Barbaria, Jr. and Lorraine Barbaria as to undivided 1/4 interest; and Frank Barbaria as to undivided 1/4 interest (John Barbaria & Sons Dairy, tenant)	27	22
Antonio B. Barcellos and Manuel B. Barcellos	12	10
John Barcelos and Guilhermina Barcelos	16	13
Sam Bartsma and Birdie Bartsma	34	27
Bateson's School of Horticulture, Inc. (see listing under name of John Brown Schools of California, Inc.)		
Bechard Mutual Water Corporation	4	4
Beck Tract Water Company, Inc.	29	23
Iver F. Becklund	1	1
Margaret E. Becklund	1	1
P. T. Beeghly (International Carbonic, Inc., tenant)	1	1
Doutzen Bekendam and Hank Bekendam	0	0
John Bekendam	0	0
Tillie Bekendam	0	0

Name	Total Water Right	Allowed Pumping Allocation
Bell Trailer City (see listing under name of Bennett E. Simmons)	1	1
E. F. Bellenbaum and Marie P. Bellenbaum	32	26
Bellflower Christian School	243	194
Bellflower Home Garden Water Company	111	89
Bellflower Unified School District	2,109	1,687
Bellflower Water Company	11	9
Belmont Water Association	0	0
Tony Beltman	0	0
Berlu Water Company, Inc.	32	26
Jack R. Bettencourt and Bella Bettencourt	151	121
Bigby Townsite Water Co.		
Siegfried Binggeli and Trina L. Binggeli (see listing under name of Paul H. Lussman, Jr.)	0	0
Fred H. Bixby Ranch Company		
Delbert G. Black and Lennie O. Black as to undivided one-half; and Harley Lee, as to undivided one-half	40	32
Bloomfield School District	11	9
Adrian Boer and Julia Boer	5	4
Gerard Boere and Rosalyn Boer		
Henry Boer and Annie Boer (William Offinga & Son, including Sidney Offinga, tenants as to 33 acre feet of water right and 26 acre feet of allowed pumping allocation)	34 30	27 24
John Boere, Jr. and Mary J. Boere	30	24
John Boere, Sr. and Edna Boere (John Boere, Jr., tenant)	30	24
John Boere, Jr. (see also listing under name of Leonard A. Grenier)		

Name	Total Water Right	Allowed Pumping Allocation
Frank Boersma and Angie Boersma	31	25
Gerrit Boersma and Jennie Boersma (George Boersma, tenant)	8	6
Jack Boersma	0	0
Sam Boersma and Berdina Boersma	42	34
Jan Bokma (see listing under name of August Vandenberg)		
Jacob Bollema	0	0
James C. Boogerd (see listing under name of Jake Van Leeuwen, Jr.)		
Bernard William Bootsma, Carrie Agnes Van Dam and Gladys Marie Romberg	12	10
Michel Bordato and Anna M. Bordato (Charlie Vander Kooi, tenant)	12	10
John Borges and Mary Borges, aka Mrs. John Borges (Manuel B. Ourique, tenant)	14	11
Mary Borges, widow of Manuel Borges (Manuel Borges, Jr., tenant)	7	6
Gerrit Bos and Margaret Bos	88	70
Jacob J. Bosma (see listing under name of Sieger Vierstra)		
Peter Bothof	6	5
William Bothof and Antonette Bothof	7	6
Frank Bouma and Myron D. Kolstad	3	3
Ted Bouma and Jeanette Bouma	21	17
Sam Bouman (Arie C. Van Leeuwen, tenant)	8	6
John Brown Schools of California, Inc. (Bateson's School of Horticulture, Inc., tenant)	2	2
M. J. Brown, Jr. and Margaret Brown	0	0
Adrian Bulk and Alice Bulk	20	16

Name	Total Water Right	Allowed Pumping Allocation
Duke Buma and Martha Buma	8	6
Miles A. Burson and Rose Burson	7	6
Calavar Corporation (see listing under name of H R M Land Company)		
California Cotton Oil Corporation	101	81
California Portland Cement Company	0	0
California Rendering Company, Ltd.	149	119
California Water and Telephone Company	2,584	2,067
California Water Service Company (Base Water Right - 13,477)	14, 717	11,774
Candlewood Country Club	184	147
V. Capovilla and Mary Capovilla	0	0
Carmenita School District	9	7
Carson Estate Company	139	111
Paul Carver	0	0
Catalin Corporation of America	13	10
Center City Water Co.	86	69
Central Manufacturing District, Inc. (Louis Guglielmana and Richard Wigboly, tenants)	825	660
Century Center Mutual Water Association	317	254
Century City Mutual Water Company, Ltd.	62	50
Cerritos Junior College District	119	95
Cerritos Park Mutual Water Company	77	62
Challenge Cream & Butter Association	146	117
Chansall Mutual Water Company	101	81
Maynard W. Chapin, as Executor of the Estate of Hugh L. Chapin, deceased	36	29

Name	Total Water Right	Allowed Pumping Allocation
Cherryvale Water Users' Association	14	11
Shigeru Chikami and Jack Chikami doing business as Chikami Bros. Farming (see also listing under name of Southern California Edison Company)	10	8
John Christoffels and Effie Christoffels	14	11
Citrus Grove Heights Water Company	277	222
City Farms Mutual Water Company No. 1	37	30
City Farms Mutual Water Company No. 2	15	12
City of Artesia	30	24
City of Bellflower	60	48
City of Compton	6,511	5,209
City of Downey	5,713	4,570
City of Huntington Park	4,788	3,830
City of Inglewood (Base Water Right - 629)	1,118	894
City of Lakewood	10,631	8,505
City of Long Beach (Base Water Right - 29,876)	33,538	26,830
City of Los Angeles (see paragraph 2 above of this Part I for water rights and restrictions on the exercise thereof of said defendant. See also such reference with respect to Department of Water and Power of the City of Los Angeles.)		
City of Lynwood	6,238	4,990
City of Montebello	260	208
City of Norwalk	613	490
City of Santa Fe Springs	505	404
City of Signal Hill	1,675	1,340

Name	Total Water Right	Allowed Pumping Allocation
City of South Gate	9,942	7,954
City of Vernon	9,008	7,206
City of Whittier	776	621
Allan Clanton and Ina Clanton	80	64
Claretian Jr. Seminary (see listing under name of Dominguez Seminary)		
Dr. Russell B. Clark (see listing under name of Research Building Corporation)		
Jacob Cloo and Grace Cloo	16	13
Clougherty Packing Company	80	64
Coast Packing Company	426	341
Coast Water Company	588	470
Joe A. Coelho, Jr. and Isabel Coelho	5	4
J. H. Coito, Jr.	0	0
John H. Coito and Guilhermina Coito (Zylstra Bros., a partnership consisting of Lammert Zylstra and William Zylstra, tenant)	17	14
J. E. Collinsworth	15	12
Compton Union High School District	48	38
Conservative Water Company (Base Water Right - 4,101)	133	3,306
Container Corporation of America	323	1,058
Nicholas C. Contoas and P. Basil Lambros (Vehicle Maintenance & Painting Corporation, tenant)	1	1
Continental Can Company, Inc.	946	757
Contractors Asphalt Products Company, Inc.	16	13
R. M. Contreras	8	6

Name	Total Water Right	Allowed Pumping Allocation
Copp Equipment Company, Inc. and Humphries Investments Incorporated	7	6
Mary Cordeiro and First Western Bank & Trust Company, as Trustee pursuant to last will and testament of Tony Cordeiro, deceased	46	37
Corporation of the Presiding Bishop of the Church of Jesus Christ of Latter Day Saints (Ray Mitchell, tenant)	39	31
Harry Lee Cotton and Doris L. Cotton	5	4
County of Los Angeles	737	590
County Water Company	280	224
Cowlitz Amusements, Inc. (La Mirada Drive-In Theater, tenant)	4	4
Pete Coy	28	22
Crest Holding Corporation	20	16
Katherine M. Culbertson	2	2
Orlyn L. Culp and Garnetle Culp	21	17
Everett Curry and Marguerite Curry	2	2
D. V. Dairy (see listing under name of Frank C. Leal)		
Dairymen's Fertilizer Co-op, Inc.	1	1
Noble G. Daniels (see listing under name of Harold Marcroft)		
John A. Davis	0	0
Henry De Bie, Jr. and Jessie De Bie	17	14
Clifford S. Deeth	0	0
Ernest De Groot and Dorothy De Groot	81	65
Pete de Groot	15	12
Pier De Groot and Fay De Groot	21	17

Name	Total Water Right	Allowed Pumping Allocation
Martin De Hoog and Adriana De Hoog	12	10
Edward De Jager and Alice De Jager	37	30
Cornelius De Jong and Grace De Jong	13	10
Jake De Jong and Lena De Jong (Frank A. Gonsalves, tenant as to 8 acre-feet of water right)	21	17
William De Kriek (see listing under name of Gerrit Van Dam)		
Del Amo Dairy (see listing under name of Ed Haakma)		
Del Amo Estate Company	0	0
Joe De Marco and Concetta De Marco	1	1
Louis F. De Martini (see listing under name of Southern California Edison Company)		
Mary A. De Mello	16	13
John Den Hollander (see listing under name of James Dykstra)		
Department of Water and Power of The City of Los Angeles, by reason of charter provisions, has the management and control of water rights owned by the City of Los Angeles (see listing under name of City of Los Angeles)		
Ruth E. Dever (Orange County Nursery, Inc., tenant)	0	0
Andrew De Voss and Alice De Voss (Arthur De Voss and Arthur Atsma, tenants)	36	29
Agnes De Vries (Gerrit Anker, tenant)	16	13
Dick De Vries and Theresa De Vries	10	8
Gerrit De Vries and Claziena De Vries	18	14
Gerrit Deyager and Dena Deyager	0	0

Name	Total Water Right	Allowed Pumping Allocation
Lloyd W. Dinkelspiel, Jr. (see listing under name of Florence Hellman Ehrman)		
District VII, Division of Highways of the State of California Department of Public Works (see listing under name of State of California)		
Dominguez Estate Company	0	0
Dominguez Seminary and Claretian Jr. Seminary	111	89
Dominguez Water Corporation	8,012	6,410
Peter Dotinga and Tena Dotinga (Dave Bajema, tenant)	9	7
Robert L. Dougherty	0	0
Downey Cemetery District	21	17
Downey Fertilizer Co. (see listing under name of Downey Land Company)		
Downey Land Company (Downey Fertilizer Co., tenant)	101	81
Downey Valley Water Company	87	70
Jim Drost	0	0
James Dykstra and Dora Dykstra (John Den Hollander, tenant)	6	5
John Dykstra and Wilma Dykstra	52	42
Cor Dyt and Andy Dyt	6	5
Eagle Picher Company	141	113
Gail H. Eagleton	67	54
Florence Hellman Ehrman; I. W. Hellman, Jr.; Frederick J. Hellman; Marco F. Hellman; Clarence E. Heller; Alfred Heller, Elizabeth Heller; Clarence E. Heller, Elinor R. Heller and Wells Fargo Bank, as co-executors of the Estate of Edward H. Heller, deceased; Lloyd W. Dinkelspiel, Jr., William H.		

Name	Total Water Right	Allowed Pumping Allocation
Green and Wells Fargo Bank, as co-executors of the Estate of Lloyd W. Dinkelspiel, deceased; Wells Fargo Bank, as Trustee under the trust created by the Will of Florence H. Dinkelspiel, deceased. (Union Oil Company of California, Lessee as to 190 acre-feet of right and as to 152 acre-feet of allowed pumping allocation)	555	444
El Rancho Unified School District	69	55
Berton Elson (see listing under name of D. P. Winslow)		
John H. Emoto and Shizuko Emoto	0	0
Addie L. Enfield (see listing under name of James L. Stamps)		
John W. England and Consuello England (see listing under name of Jenkins Realty Mutual Water Co.)		
Emma Engler (Morris Weiss, tenant)	10	8
Anthony F. Escobar and Eva M. Escobar (Henry Kampen, tenant)	14	11
Excelsior Union High School District	381	305
Kenneth A. Farris and Wanda Farris	1	1
Federal Ice and Cold Storage Company	92	74
Fred Fekkes (see listing under name of Steve Stefani, Sr.)		
Julius Felsenthal and Mrs. Julius Felsenthal, aka Marga Felsenthal	1	1
Tony Fernandes (see listing under name of U. Stewart Jones)		
Joe C. Ferreira and Carolina Ferreira (Joe C. Ferreira and Joe C. Ferreira, Jr., operators of well facility)	37	30

Name	Total Water Right	Allowed Pumping Allocation
Mary A. Ferreira (Joe Lucas, tenant) (see also listing under name of Jack Gonsalves)	1	1
John Feuz, Jr.	0	0
Fibreboard Paper Products Corporation	1,521	1,217
Abe Fien	0	0
Alfred Fikse, Jr. and Aggie Fikse	2	2
Henry Fikse and Jennie Fikse	4	4
Filtrol Corporation	570	456
The Firestone Tire & Rubber Co.	1,536	1,229
First Western Bank & Trust Co. (see listing under name of Mary Cordeiro)		
Clare Fisher	0	0
Elizabeth Flesch, James Flesch, Margaret Flesch, Theodore Flesch, Ernest D. Roth and Eva Roth, doing business as Norwalk Mobile Lodge	18	14
The Flintkote Company	2,567	2,054
Ford Motor Company	11	9
Robert G. Foreman (see listing under name of Lakewood Pipe Co.)		
Guiseppi Franciosi and Alice Franciosi	2	2
Tony V. Freitas (see listing under name of Bank of America, etc.)		
S. Fujita	0	0
Jun Fukushima (see listing under name of Chige Kawaguchi)		
Paul Fultheim and Helga Fultheim	5	4
Fumi Garden Farms, Inc. (see listing under name of Southern California Edison Company and also under name of George Yamamoto)		

Name	Total Water Right	Allowed Pumping Allocation
Gabby Louise, Inc. (Arthur Gilbert & Associates, tenant)	58	46
Victor E. Gamboni and Barbara H. Gamboni (Jake J. Alewyn and Mrs. Jake J. Alewyn also known as Normalie May Alewyn, tenants as to 13 acre feet of water right and 10 acre feet of allowed pumping allocation)	27	22
Nick Gandolfo and Palmera Gandolfo	5	4
Freddie A. Garrett and Vivian Marie Garrett	6	5
Martha Gatz	15	12
General Dynamics Corporation	675	540
General Telephone Company of California	2	2
Alfred Giacomi and Jennie Giacomi	58	46
Arthur Gilbert & Associates (see listing under name of Gabby Louise Inc.)		
Mary Godinho	0	0
Pauline Godinho (Joe C. Godinho and John C. Godinho, Jr., doing business as Godinho Bros. Dairy, tenants)	31	25
Harry N. Goedhart, Henry Otto Goedhart, Hilbrand John Goedhart, John Goedhart, Otto Goedhart, Jr., Peter Goedhart, and Helen Goedhart Van Eik (Paramount Farms, tenant)	21	17
Reimer Goedhart	12	10
Golden Wool Company	223	178
Albert S. Gonsalves and Caroline D. Gonsalves	10	8
Frank A. Gonsalves (see listing under name of Bank of America National Trust and Savings Association, etc.; and also under name of Jake De Jong)		

Name	Total Water Right	Allowed Pumping Allocation
Jack Gonsalves, Joe Lucas, Pete Koopmans, Manuel M. Souza, Sr., Manuel M. Souza, Jr., Frank M. Souza, Louie J. Souza, and Mary A. Ferreira	55	44
Jack Gonsalves and Mary Gonsalves	31	25
Joaquin Gonsalves and Elvira Gonsalves	27	22
Joe A. Gonsalves and Virginia Gonsalves	12	10
The B. F. Goodrich Company	519	415
The Goodyear Tire & Rubber Company	1,141	913
Eric Gorden and Hilde Gorden	2	2
Fern Ethyl Gordon as to an undivided 1/2 interest; Fay G. Tawzer and Lawrence R. Tawzer, as to an undivided 1/2 interest	17	14
Huntley L. Gordon (appearing by and through United California Bank, as Conservator of the Estate of Huntley L. Gordon)	41	33
Robert E. Gordon	5	4
Joe Gorzeman and Elsie Gorzeman	13	10
Florence M. Graham	7	6
Marie Granger	0	0
Great Western Malting Company	448	358
William H. Green (see listing under name of Florence Hellman Ehrman)		
Greene-Howard Petroleum Corporation (see listing under name of Hathaway Company)		
John H. Gremmius and Henry W. Gremmius dba Henry and John Gremmius	0	0
Leonard A. Grenier and Marie Louise Grenier (John Boere, Jr., tenant)	10	8
Florence Guerrero	2	2

Name	Total Water Right	Allowed Pumping Allocation
Louis Guglielmana (see listing under name of Central Manufacturing District, Inc.)		
George V. Gutierrez and Mrs. Socorro Gutierrez (see listing under name of Associated Southern Investment Company)		
Salvatore Gutierrez (see listing under name of Southern California Edison Company)		
H. J. S. Mutual Water Co.	63	50
H R M Land company (Harron, Rickard & McCone Company of Southern California and Calavar Corporation, tenants)	3	3
Gerrit Haagsma and Mary Haagsma	10	8
Ed Haakma and Sjana Haakma (Del Amo Dairy, tenant; Ed Haakma and Pete Vander Kooi, being partners of said Del Amo Dairy)	28	22
Verney Haas and Adelyne Haas	4	4
William H. Hadley and Grace Hadley	4	4
Henry C. Haflinger and Emily Haflinger	10	8
Clarence Theodore Halburg	3	3
Fred Hambarian	2	2
Henry Hamstra and Nelly Hamstra	33	26
Raymond Hansen and Mary Hansen	12	10
Earl Haringa; Evert Veenendaal and Gertrude Veenendaal	22	18
Antoine Harismendy and Claire Harismendy	0	0
Harron, Rickard & McCone Company of Southern California (see listing under name of H R M Land Company)		
Jack D. Hastings	0	0
Kameko Hatanaka	9	7

Name	Total Water Right	Allowed Pumping Allocation
Kazuo Hatanaka (Minoru Yoshijima, tenant)	10	8
Masakazu Hatanaka, Isao Hatanaka, and Kenichi Hatanaka	5	4
Mrs. Motoye Hatanaka	0	0
Hathaway Company, Richard F. Hathaway, Julian I. Hathaway, and J. Elwood Hathaway (Greene-Howard Petroleum Corporation, tenant utilizing less than 1 acre foot per year)	70	56
Clarence E. Heller; Alfred Heller; Elizabeth Heller; Clarence E. Heller; Elinor R. Heller, as co-executors of the Estate of Edward H. Heller, deceased (see listing under name of Florence Hellman Ehrman)		
I. W. Hellman, Jr.; Frederick J. Hellman; Marco F. Hellman (see listing under name of Florence Hellman Ehrman)		
Ralph Hicks	0	0
Alfred V. Highstreet and Evada V. Highstreet	10	8
John Highstreet and Eileen M. Highstreet	9	7
Bob Hilarides and Maaike Hilarides (Frank Hilarides, tenant)	51	41
John Hilarides and Maria Hilarides	26	21
Hajime Hirashima (see listing under name of Masaru Uyeda)		
Willis G. Hix	1	1
Henry H. Hoffman and Apolonia Hoffman	12	10
Dick Hofstra	0	0
Andrew V. Hohn and Mary G. Hohn	1	1
Kyle R. Holmes and Grace Ellen Holmes	20	16
Home Water Company	35	28

Name	Total Water Right	Allowed Pumping Allocation
Manuel L. Homen	17	14
Mrs. Paul Y. Homer (see listing under name of Mrs. Paul Y. Homer (King).)		
Cornelis Hoogland and Alice Hoogland	15	12
Art Hop, Jr.	0	0
Art Hop, Sr. and Johanna Hop (G. A. Van Beek, tenant)	5	4
Andrew Hop, Jr. and Muriel Hop	33	26
Theodore R. Houseman and Leona M. Houseman	14	11
Humphries Investments Incorporated (see listing under name of Copp Equipment Company, Inc.)		
Albert Huyg and Marie Huyg	22	18
Hygenic Dairy Farms, Inc.	0	0
Pete W. Idsinga and Annie Idsinga	13	10
Miss Alice M. Imbert	1	1
Industrial Asphalt of California, Inc.	116	93
Inglewood Park Cemetery Association	285	228
International Carbonic, Inc. (see listing under name of P. T. Beeghly)		
Jugora Ishii and Mumeno Ishii (Ishii Brothers, tenant)	10	8
Robert J. Jamison and Betty Jamison	7	6
Jenkins Realty Mutual Water Co. (Clyde H. Jenkins, Minnie R. Jenkins, Mary Wilcox, Ruby F. Marchbank, Robert B. Marchbank, John W. England, and Consuello England, shareholders	10	8
John-Wade Co.	1	1
Henry S. Jones and Madelynne Jones	1	1

Name	Total Water Right	Allowed Pumping Allocation
U. Stewart Jones and Dorothy E. Jones (Tony Fernandes, tenant)	1	1
Harold Jongsma and Mary N. Jongsma	65	52
W. P. Jordan (see listing under name of Henry Van Ruiten)		
Dave Jorritsma and Elizabeth Jorritsma	27	22
Christine Joseph (see listing under name of Helen Wolfsberger)		
Junior Water Co., Inc.	737	590
Kal Kan Foods, Inc.	120	96
Kalico, Inc.	4	4
Hagop Kalustian (11 acre feet of total water right attributable to well located at 6629 South Street, Lakewood and reported to plaintiff under Producer No. 3925. 2 acre feet of total water right attributable to portion of property not sold to State of California formerly served by well located at 10755 Artesia Blvd., Artesia, the production of which well was reported to plaintiff under Producer No. 4030)	13	10
Fritz Kampen and Clare Kampen	14	11
William Kamstra and Bertha Kamstra	35	28
Henry Kampen (see listing under name of Anthony Escobar)		
L. Kauffman Company, Inc. (see listing under name of Lorraine K. Meyberg)		
Chige Kawaguchi and Masao Kawaguchi (Jun Fukushima, tenant)	4	4
King Kelley Marmalade Co. (see listing under name of Roberta M. Magnusson)		
Mrs. Paul Y. Homer (King)	17	14
Jacob R. Kimm and Bonnie Kimm	36	29

Name	Total Water Right	Allowed Pumping Allocation
Mrs. Oraan Kinne (Nicholaas J. Moons, tenant)	11	9
Morris P. Kirk & Son, Inc.	77	62
Jake Knevelbaard and Anna Knevelbaard	50	40
Willie Knevelbaard and Joreen Knevelbaard	1	1
Simon Knorringa	12	10
John Koetsier, Jr.	0	0
Myron D. Kolstad (see listing under name of Frank Bouma)		
Yoshio Kono and Barbara Kono (see listing under name of George Mimaki)		
Louis Koolhaas	13	10
Simon Koolhaas and Sophie Grace Koolhaas	9	7
Pete Koopmans (see listing under name of Jack Gonsalves)		
Nick P. Koot (see listing under name of Mary Myrndahl)		
Kotake, Inc. (Masao Kotake, Seigo Kotake, William Kotake, dba Kotake Bros., tenants)	83	66
Masao Kotake	0	0
Walter G. Kruse and Mrs. Walter G. Kruse, aka Vera M. Kruse	11	9
Laguna-Maywood Mutual Water Company No. 1	1,604	1,283
La Habra Heights Mutual Water Company	3,044	2,435
La Hacienda Water Company	46	37
Lakewood Pipe Co., a partnership composed of Robert G. Foreman, Frank W. Tybus and June E. Tybus (Lakewood Pipe Service Co., tenant)	12	10

Name	Total Water Right	Allowed Pumping Allocation
P. Basil Lambros (see listing under name of Nicholas C. Conteas)		
La Mirada Drive-in Theater (see listing under name of Cowlitz Amusements, Inc.)		
La Mirada Water Company	0	0
Calvin E. Langston and Edith Langston	1	1
S. M. Lanting and Alice Lanting	15	12
Henry Lautenbach and Nellie H. Lautenbach	16	13
Norman Lautrup, as Executor of the Estate of Nels Lautrup, deceased; and Minnie Margaret Lautrup	30	24
Frank C. Leal and Lois L. Leal (D. V. Dairy, tenant)	15	12
Eugene O. LeChasseur and Lillian P. LeChasseur (R. A. LeChasseur, tenant)	2	2
Lee Deane Products, Inc.	0	0
Harley Lee (see listing under name of Delbert G. Black)		
Le Fiell Manufacturing Company	0	0
Armand Lescoulie (see listing under name of Southern California Edison Company)		
Liberty Vegetable Oil Company	14	11
Little Lake Cemetery District	17	14
Little Lake School District	0	0
Loma Floral Company (see listing under name of George Mimaki)		
Melvin L. Long and Stella M. Long	2	2
Nick J. Loogman (see listing under name of William Smoorenburg)		
Frank Lorenz (see listing under name of Ralph Oosten)		

Name	Total Water Right	Allowed Pumping Allocation
Los Angeles County Waterworks District No. 1 (Base Water Right 22)	113	90
Los Angeles County Waterworks District No. 10	842	674
Los Angeles County Waterworks District No. 16	412	330
Los Angeles Paper Box and Board Mills	321	257
Los Angeles Union Stockyards Company	0	0
Los Nietos Tract 6192 Water Co.	49	39
Alden Lourenco (see listing under name of A. C. Pinheiro)		
Lowell Joint School District	0	0
Joe Lucas (see listings under names of Mary A. Ferreira and Jack Gonsalves)		
Luer Packing Co. (see listing under name of Sam Perricone)		
Jake J. Luetto (Orange County Nursery, Inc., tenant)	13	10
Lunday-Thagard Oil Co.	265	212
Joe Luond (Frieda Roethlisberger, tenant as to portion of rights)	7	6
John Luscher and Frieda Luscher	13	10
Paul H. Lussman, Jr. and Ann Lussman, Siegfried Binggeli and Trina L. Binggeli (Paul's Dairy, tenant)	8	6
Lynwood Gardens Mutual Water Company	205	164
Lynwood Park Mutual Water Company	278	222
Jerome D. Mack and Joyce Mack (see listing under name of D. S. Moss)		
Roberta M. Magnusson (King Kelly Marmalade Co., tenant)	15	12
Anthony Mancebo	0	0

Name	Total Water Right	Allowed Pumping Allocation
Robert B. Marchbank and Ruby F. Marchbank (see listing under name of Jenkins Realty Mutual Water Co.)		
Harold Marcroft and Marjorie Marcroft (Noble G. Daniels, tenant)	7	6
Floyd G. Marcusson (see listing under name of Sykes Realty Co.)		
Walter Marlowe and Edna Marlowe	1	1
Marshburn, Inc. (see listing under name of Mel, Inc.)		
The Martin Bros. Container & Timber Products Corp.	7	6
Mary Martin	35	28
Antonio Mathias and Mary Mathias	16	13
Mausoleum Park, Inc. and Sun Holding Corporation	4	4
Maywood Mutual Water Company No. 1	926	741
Maywood Mutual Water company No. 2	1,007	806
Maywood Mutual Water Company No. 3	1,407	1,126
Mel, Inc. (Marshburn, Inc., tenant)	67	54
G. Mellano	12	10
Wilbur Mellema and Mary Mellema (see listing under name of Elmo D. Murphy)		
Wilbur Mellema (see listing under name of Morris Weiss)		
Memorial Parks, Inc.	42	34
Lyman B. Merrick and Gladys L. Merrick	17	24
Metropolitan State Hospital of the State of California Department of Mental Hygiene (see listing under name of State of California)		
F. N. Metzger	0	0

Name	Total Water Right	Allowed Pumping Allocation
Lorraine K. Meyberg (L. Kauffman Company, Inc., tenant)	81	65
Midland Park Water trust	71	57
Midway Gardens Mutual Association	59	47
Harry C. Miersma and Dorothy L. Miersma	12	10
Henry Miersma and Susan M. Miersma	7	6
Willis L. Miller	0	0
George Mimaki, Mitsuko Mimaki, Yoshio Kono and Barbara Kono (Loma Floral Company, tenant)	2	2
Ray Mitchell (see listing under name of Corporation of the Presiding Bishop of the Church of Jesus Christ of Latter Day Saints; and also listing under name of Frank Ruggieri)		
Fumiko Mitsuuchi, aka Mary Mitsuuchi (Z. Van Spanje, tenant as to one acre foot)	14	11
Yoneichi Miyasaki	0	0
Glenn Miyoshi, Yosaku Miyoshi, Masayo Miyoshi, Haruo Miyoshi, and Masaru Miyoshi, dba Miyoshi Bros.	10	8
Jean Mocho and Michel Plaa	11	9
Modern Imperial Company	71	57
Montebello Land and Water Company	1,990	1,592
Monterey Acres Mutual Water Company	128	102
Nicholaas J. Moons (see listing under name of Mrs. Oraan Kinne)		
Alexander Moore and Betty L. Moore	16	13
Neal Moore	0	0
Alyce Mooschekian	0	0
Reuben Mooschekian	15	12

Name	Total Water Right	Allowed Pumping Allocation
William R. Morris (see also listing under name of Associated Southern Investment Company)	1	1
D. S. Moss, Lillian Moss, Jerome D. Mack, and Joyce Mack	5	4
Mountain View Dairies, Inc.	68	54
Kiyoshi Murakawa and Shizuko Murakawa	0	0
Daisaku Murata, Fui Murata, Hatsuye Murata, Kenji Murata, Setsuko Murata, and Takeo Murata	15	12
Kenji Murata (see listing under name of Southern California Edison Company)		
Elmo D. Murphy and Evelene B. Murphy (Morris Weiss, Bessie Weiss, Wilbur Mellema, and Mary Mellema, tenants)	23	18
Murphy Ranch Mutual water company	576	461
Etta Murr	3	3
R. B. Murray and Gladys J. Murray	0	0
Tony G. Mussachia and Anna M. Mussachia	10	8
Mary Myrndahl (Nick P. Koot, tenant)	11	9
Sam Nakamura and Tokiko Nakamura	2	2
Leo Nauta (see listing under name of John Osinga)		
Pete Nauta (see listing under name of Jacob Vandenberg)		
Fred C. Nelles School for Boys of the State of California Department of the Youth Authority (see listing under name of State of California)		
Otelia Nelson and Robert Nelson (Shelter Superior Dairy, tenant)	14	11
Simon S. Niekerk and Rose Niekerk (Niekerk Hay Company, tenant)	3	3

Name	Total Water Right	Allowed Pumping Allocation
Norris-Thermador Corporation	172	138
North Gate Gardens Water Co.	60	48
Norwalk-La Mirada City School District	360	288
Norwalk Mobile Lodge (see listing under name of Elizabeth Flesch)		
Mabel E. Nottingham (Leslie Nottingham, tenant)	25	20
William Offinga & Son, including Sidney Offinga (see listing under name of Henry Boer)		
Olive Lawn Memorial Park, Inc.	14	11
John Oord	0	0
Marinus Oosten and Anthonia Oosten	16	13
Ralph Oosten and Caroline Oosten (Frank Lorenz, tenant as to 13 acre feet of water right and 10 acre feet of allowed pumping allocation)	51	41
Orange County Nursery, Inc. (see also: listing under name of Ruth E. Dever; listing under name of Jake J. Luetto; and listing under name of Mary Ravera)	16	13
Orchard Dale County Water District (Base Water Right - 1,382)	1,384	1,107
Orchard Park Water Club, Inc.	50	40
Oriental Foods, Inc.	34	27
Orla Company (John D. Westra, tenant)	7	6
Viva Ormonde (see listing under name of Hank Van Dam)		
Pablo Oropeza and Aurelia G. Oropeza (Pablo Oropeza, Jr., tenant) (see also listing under name of Tarr and McComb Oil Company, Ltd.)		
John Osinga (Leo Nauta, tenant)	6	5

Name	Total Water Right	Allowed Pumping Allocation
Manuel B. Ourique (see listing under name of John Borges)		
Owl Constructors	20	16
Pacific Electric Railway Company (Gerrit Van Leeuwen of 15405 Shoemaker Road, Norwalk, tenant as to 11 acre feet of right and 9 acre feet of allowed pumping allocation)	15	12
Packers Mutual Water Company	43	34
Edward G. Paddison and Grace M. Paddison	17	14
Paramount Farms (see listing under name of Harry N. Goedhart)		
Paramount County Water District	2,967	2,374
Paramount Unified School District	58	46
Park Water Company	24,592	19,674
W. J. Parsonson	0	0
Rudolph Pasma and Frances C. Pasma	10	8
Paul's Dairy (see listing under name of Paul H. Lussman, Jr.)		
Mrs. La Verne Payton	1	1
Peerless Land & Water Co., Inc.	1,232	986
J. C. Pereira, Jr. and Ezaura Pereira	34	27
Sam Perricone and Louis Romoff (Luer Packing Co., tenant)	107	86
Peterson Manufacturing Co., Inc.	73	58
Phelps Dodge Copper Products Corporation	390	312
Pico County Water District	3,741	2.993
Piedmont Heights Water Club	7	6
Lucille C. Pimental (Richard Pimental and Pimental Dairy, tenants)	16	13

Name	Total Water Right	Allowed Pumping Allocation
Joe Pine (see listing under name of A. C. Pinheiro)		
A. C. Pinheiro and Mary M. Pinheiro (Alden Lourenco, tenant as to 9 acre feet of water right and 7 acre feet of allowed pumping right; and Joe Pine, tenant as to 13 acre feet of water right and 10 acre feet of allowed pumping right)	128	102
Fred Pinto and Mary Pinto	5	4
Frank Pires (see listing under name of Frank Simas)		
Tony C. Pires and Laura C. Pires	31	25
Michel Plaa (see listing under name of Jean Mocho)		
Donald R. Plunkett	53	42
Pomering Tract Water Association	32	26
Clarence Pool	24	19
Garret Porte and Cecelia Porte	35	28
Veronica Postma	16	13
C. H. Powell	1	1
Powerine Oil Company	784	627
John Preem	0	0
Ralph Pylman and Ida Pylman	13	10
Quality Meat Packing Company	38	30
Ralphs Grocery Company	0	0
Arthur D. Ramsey and James A. Ramsey	5	4
Rancho Santa Gertrudes Mutual Water System	48	38
Mary Ravera (Orange County Nursery, Inc., tenant	39	31

Name	Total Water Right	Allowed Pumping Allocation
Zelma Ravera	2	2
Rawlins Investment Corporation (Rockview Milk Farms, Inc., tenant)	66	53
Hal Rees	0	0
Reeves Tract Water Company	36	29
Clarence Reinalda	0	0
Reliance Dairy Farms	122	98
Research Building Corporation (Dr. Russell B. Clark, tenant)	11	9
Richfield Oil Corporation	71	57
Richland Farm Water Company	216	173
George Rietkerk and Cornelia Rietkerk	7	6
Rio Hondo Country Club (see listing under name of James L. Stamps)		
Erasmo Rios (see listing under name of Esther Salcido)		
Jesus Rios (see listing under name of Esther Salcido)		
Frank J. Rocha, Jr. and Elsie M. Rocha	13	10
Rockview Milk Farms, Inc. (see listing under name of Rawlins Investment Corporation)		
John Rodrigues, Emily S. Rodrigues, and John Rodrigues, Jr. (see also below)	5	4
John Rodrigues and John Rodrigues Jr.	1	1
Frieda Roethlisberger (see listing under name of Joe Luond)		
Patricia L. Davis Rogers, aka Patricia L. Davis	2	2
The Roman Catholic Archbishop of Los Angeles, a corporation sole	426	341

Name	Total Water Right	Allowed Pumping Allocation
Gladys Marie Romberg (see listing under name of Bernard William Bootsma)		
Alois M. Rombout	0	0
Louis Romoff (see listing under name of Sam Perricone)		
Elvira C. Rosales	3	3
Frank J. Ross	2	2
Ernest D. Roth and Eva Roth (see listing under name of Elizabeth Flesch)		
Ed Roukema	0	0
Herbert N. Royden	31	25
Ruchti Brothers	31	25
Frank Ruggieri and Vada Ruggieri (see additional listing below)	1	1
Frank Ruggieri and Vada Ruggieri; David Seldeen and Fay Seldeen (Ray Mitchell, tenant)	23	18
Thomas S. Ryan and Dorothy J. Ryan	19	15
Sam Rypkema and Tena Rypkema	8	6
St. John Bosco School	53	42
James H. Saito and Yoshino Saito	2	2
Esther Salcido and Jesus Rios (Erasmo Rios, tenant)	3	3
San Gabriel Valley Water Company	6,828	5,462
Joe Santana and Palmira Santana	10	8
Sasaki Bros. Ranch, Inc.	32	26
Sativa L. A. County Water District	592	474
Ben Schilder, Jr. and Anna Schilder	28	22
Carl Schmid and Olga Schmid	18	14

Name	Total Water Right	Allowed Pumping Allocation
Mrs. A. Schuur	0	0
John Schuurman and Isabel Schuurman (James Sieperda, tenant)	15	12
David Seldeen and Fay Seldeen (see listing under name of Frank Ruggieri)		
Maurice I. Sessler	8	6
Chris Shaffer and Celia I. Shaffer	8	6
Shayman & Wharram, a partnership, consisting of John W. Shayman and Francis O. Wharram	2	2
Shell Oil Company (see listing under name of Margaret F. Slusher)		
Shelter Superior Dairy (see listing under name of Otelia Nelson)		
Tadao Shiba and Harume Shiba, Susumu Shiba, and Mitsuko Shiba	7	6
Yahiko Shiozaki and Kiyoko Shiozaki; Ken Shiozaki and Grace Shiozaki	6	5
Shore-Plotkin Enterprises, Inc. (Shore-Calnevar, Inc., tenant)	0	0
J. E. Siemon	15	12
James Sieperda (see listing under name of John Schuurman)		
Sierra Restaurant Corporation	0	0
Frank Simas and Mabel Simas (Frank Pires, tenant)	11	9
Bennett E. Simmons and Alice Lorraine Simmons, George K. Simmons and Doris June Simmons (Bell Trailer City, tenant)	41	33
Margaret F. Slusher (Shell Oil Company, tenant)	7	6
Lester W. Smith and Donald E. Smith (Lester W. Smith Dairy, tenant)	20	16

Name	Total Water Right	Allowed Pumping Allocation
Wirt Smith	14	11
William Smoorenburg and Nick J. Loogman (Smoorenburg & Loogman, a partnership of William Smoorenburg and Nick J. Loogman, operating well facility)	21	17
Leo Snozzi and Sylvia Snozzi	52	42
Socony Mobil Oil Company, Inc.	172	138
Somerset Mutual Water Company	2,744	2,195
South Montebello Irrigation District	1,238	990
Southern California Edison Company (Vernon Bacon; Chikami Bros. Farming, consisting of Jack Chikami and Shigeru Chikami; Louis F. De Martini; Armand Lescoulie; C. D. Webster; Kenji Murata; Glenn F. Spiller and Jean H. Spiller; George Yamamoto and Alice Yamamoto, conducting business as Fumi Garden Farms, Inc.; and Salvatore Gutierrez, tenants and licenses)	816	653
Southern California Water Company	18,937	15,150
Southern Service Company, Ltd.	81	65
Henrietta Southfield	4	4
John Southfield	0	0
Southwest Water Company	2,895	2,316
Manuel M. Souza, Sr.; Manuel M. Souza, Jr.; Frank M. Souza and Louie J. Souza (see listing under name of Jack Gonsalves)		
Nelson Souza and Mary Souza	12	10
Glenn F. Spiller and Jean H. Spiller (see also listing under name of Southern California Edison company)	24	19
Farah Sprague	3	3

Name	Total Water Right	Allowed Pumping Allocation
Herman F. Staat and Charlotte H. Staat	2	2
James L. Stamps, as to an undivided 80% interest; Addie L. Enfield, as to an undivided 20% interest (Rio Hondo Country Club, tenant)	443	354
Standard Oil Company of California	118	94
J. F. Standley and Myrtle M. Standley	1	1
Star Dust Lands, Inc.	85	68
State of California (included herein are water rights of Fred C. Nelles School for Boys of the State of California Department of the Youth Authority; Metropolitan State Hospital of the State of California Department of Mental Hygiene; and District VII, Division of Highways of the State of California Department of Public Works)	757	606
Stauffer Chemical Company	181	145
John Steele and Clara D. Steele	4	4
Steve Stefani, Jr.	0	0
Steve Stefani, Sr., and Dora Stefani (Henry Baar and Fred Fekkes, tenants)	38	30
Andrew Stellingwerf	0	0
Henry Stellingwerf and Jeanette Stellingwerf	14	11
Henry Sterk and Betty S. Sterk	114	91
V. C. Stiefel	3	3
Sophia J. Stockmal and John F. Stockmal	3	3
William Thomas Stover and Gertrude D. Stover	3	3
Louis Struikman and Alice Struikman (Louis Struikman and Pete Struikman dba Louis Struikman and Son, tenants as to 43 acre feet of water right and 34 acre feet of allowed pumping allocation; and Sidney		

Name	Total Water Right	Allowed Pumping Allocation
Van Dyke, tenant as to 10 acre feet of water right and 8 acre feet of allowed pumping allocation) (see also below)	53	42
Louis Struikman and Peter Struikman	3	3
Cornelius Struikmans and Ida Struikmans	9	7
Henry Struikmans and Nellie Struikmans	13	10
Henry Struikmans, Jr.	0	0
Suburban Mutual Water Co.	0	0
Suburban Water Systems	3,666	2,933
Kazuo Sumida	2	2
Sun Coast Development Company	0	0
Sun Holding Corporation (see listing under name of Mausoleum Park, Inc.)		
Sunnyside Mausoleum Company	60	48
Sunset Cemetery Association	26	21
E. A. Sutton and Ramona Sutton	39	31
Swift & Company	2,047	1,638
Roy Sybrandy and Anne Sybrandy	29	23
Sykes Realty Co., Floyd G. Marcusson and Albert C. Sykes	2	2
Andy Sytsma and Dorothy Sytsma (Albert Sytsma and Robert Sytsma, doing business as Sytsma Bros., tenants)	20	16
Tarr and McComb Oil Company, Ltd. (Pablo Oropeza, tenant)	86	69
Roy Tashima and Shigeo Tashima	1	1
Fay G. Tawzer and Lawrence R. Tawzer (see listing under name of Fern Ethyl Gordon)		
Dorothy Taylor	0	0
Quentin D. Taylor	0	0

Name	Total Water Right	Allowed Pumping Allocation
Carl Teixeira and Evelyn Teixeira	11	9
George S. Teixeira and Laura L. Teixeira	17	14
Harm Te Velde and Zwaantina Te Velde	253	202
Theo Hamm Brewing Co.	150	120
Thirty-Three Forty-Five East Forty-Fifth Street, Inc.	17	14
O. T. Thompson and Drusilla Thompson	20	16
Tract Number One Hundred and Eighty Water Company	1,526	1,221
Tract 349 Mutual Water Company	529	423
Fred Troost and Annie Troost	53	42
Frank W. Tybus and June E. Tybus (see listing under name of Lakewood Pipe Co.)		
Uehling Water Company, Inc.	846	677
Union Development Co., Inc.	12	10
Union Oil Company of California (see listing under name of Florence Hellman Ehrman)		
Union Pacific Railroad Company	656	525
Union Packing Company	100	80
United California Bank (see listing under name of Huntley L. Gordon)		
United Dairymen's Association	1	1
United States Gypsum Company	1,581	1,265
United States Rubber Company	820	656
United States Steel Corporation	176	141
Masaru Uyeda, Hajime Hirashima, and Tadashi Uyeda	12	10
G. A. Van Beek (see listing under name of Art Hop, Sr.)		

Name	Total Water Right	Allowed Pumping Allocation
Bas Van Dam (see listing under name of Gertrude Van Dam)		
Carrie Agnes Van Dam (see listing under name of Bernard William Bootsma)		
Cornelius A. Van Dam and Florence Van Dam	24	19
Dick Van Dam, Jr.	0	0
Gerrit Van Dam and Grace Van Dam (William De Kriek, tenant)	13	10
Gertrude Van Dam (Bas Van Dam, tenant as to 29 acre feet of water right and 23 acre feet of allowed pumping right; and Henry Van Dam, tenant as to 19 acre feet of water right and 15 acre feet of allowed pumping right)	48	38
Hank Van Dam and Jessie Van Dam (Viva Ormonde, tenant)	22	18
Henry Van Dam (see listing under name of Gertrude Van Dam)		
Jacob Vandenberg and Anna Vandenberg (Pete Nauta, tenant)	8	6
August Vandenburg, Ben W. Vandenburg, and Andrew W. Vandenburg (Jan Bokma, tenant)	6	5
John Van Den Raadt	4	4
M. Vander Dussen and Aletta C. Vander Dussen	12	10
Sybrand Vander Dussen and Johanna Vander Dussen	23	18
Helen Goedhart Van Eik (see listing under name of Harry N. Goedhart)		
Cornelius Vander Eyk, aka Case Vander Eyk, and Nelly Vander Eyk, aka Nellie Vander Eyk	7	6
George Van Der Ham and Alice Van Der Ham	10	8

Name	Total Water Right	Allowed Pumping Allocation
Huibert Vander Ham and Henrietta Vander Ham	33	26
Joe Vanderham and Cornelia Vanderham	13	10
John Vanderham and Nell M. Vanderham	20	16
Charlie Vander Kooi and Lena Mae Vander Kooi (see also listing under name of Michel Bordato)	13	10
Pete Vander Kooi (see listing under name of Ed Haakma)		
Bert Vander Laan and Stella Vander Laan	10	8
Matt Vander Sys and Johanna Vander Sys	13	10
Bill Vander Vegt and Henny Vander Vegt	18	14
George Vander Vegt and Houjke Vander Vegt	12	10
Harry J. Vander Wall and Marian E. Vander Wall	12	10
Bert Vande Vegte and Lillian Vande Vegte	1	1
Anthony Van Diest	0	0
Jennie Van Diest, as to undivided 1/3 interest; Ernest Van Diest and Rena Van Diest, as to undivided 1/3 interest; and Cornelius Van Diest and Anna Van Diest, as to undivided 1/3 interest. (Van Diest Dairy, tenant)	20	16
Katrena Van Diest and/or Margaret Van Diest	92	74
Henry W. Van Dyk (see listing under name of Henrietta Veenendaal)		
Wiechert Van Dyk and Jennie Van Dyk	13	10
Corty Van Dyke (see listing under name of Charles E. Adams)		
Sidney Van Dyke (see listing under name of Louis Struickman)		

Name	Total Water Right	Allowed Pumping Allocation
William Van Foeken	0	0
Jake Van Haaster and Gerarda Van Haaster	0	0
Arie C. Van Leeuwen (see listing under name of Sam Bouman)		
Gerrit Van Leeuwen of 15405 Shoemaker Road, Norwalk (see listing under name of Pacific Electric Railway Company)		
Henry Van Leeuwen and Caroline P. Van Leeuwen; Gerrit Van Leeuwen of 5948 Lorelei Street, Bellflower, and Ellen Van Leeuwen	1	1
Jake Van Leeuwen, Jr. and Cornelia J. Van Leeuwen (James C. Boogerd and Jake Van Leeuwen, Jr. dba Van Leeuwen & Boogerd, tenants)	9	7
Anthony R. Van Loon (see listing under name of Henry Van Ruiten)		
John Van Nierop and Lily E. Van Nierop	0	0
Henry Van Ruiten and Mary A. Van Ruiten, as to undivided 1/2 interest; and Jake Van Ruiten and Jacoba Van Ruiten, as to undivided 1/2 interest (W. P. Jordan, Anthony R. Van Loon, and Jules Wesselink, tenants)	88	70
Pete Van Ruiten and Mary Van Ruiten (for purposes of clarification, this Mary Van Ruiten is also known as Mrs. Pete Van Ruiten and is not the same individual as sued herein as Mary A. Van Ruiten, who is also known as Mrs. Henry G. Van Ruiten)	38	30
Z. Van Spanje (see listing under name of Fumiko Mitsuuchi)		
Evert Veenendaal and Gertrude Veenendaal (see listing under name of Earl Haringa)		
Henrietta Veenendaal (Henry W. Van Dyk, tenant)	10	8

Name	Total Water Right	Allowed Pumping Allocation
Henry Veenendaal and Henrietta Veenendaal	8	6
Joe H. Veenendaal and Margie Veenendaal	34	27
John Veenendaal	0	0
Vehicle Maintenance & Painting Corporation (see listing under name of Nicholas C. Conteas)		
Salvador Velasco	16	13
Mike Veldhuis	0	0
Albert Veldhuizen and Helen Veldhuizen	23	18
Jack Verbree	0	0
Mrs. Klaasje Verburg (Leon Verburg to extent of interest under contract to purchase)	12	10
John C. Verhoeven and Sadie Verhoeven	25	20
Joseph C. Vierra and Caroline Vierra (Joseph C. Vierra and William J. Vierra, doing business as Vierra & Vierra, tenants)	13	10
Sieger Vierstra and Nellie G. Vierstra (Jacob J. Bosma, tenant)	12	10
Virginia Country Club of Long Beach	340	272
Roy Visbeek	0	0
Louis Visser	9	7
Vista Hill Psychiatric Foundation	39	31
Louie Von Ah	0	0
Walnut Irrigation District	154	123
Walnut Park Mutual Water Co.	1,245	996
C. D. Webster (see also listing under name of Southern California Edison Company)	1	1

Name	Total Water Right	Allowed Pumping Allocation
Morris Weiss and Bessie Weiss (Wilbur Mellema, tenant) (also see listings under names of Elmo D. Murphy and Emma Engler)	20	16
Wells Fargo Bank as Executor of Estate of Edward H. Heller, Deceased, and as Executor of Estate of Lloyd W. Dinkelspiel, Deceased, and as Trustee under Trust created by the Will of Florence H. Dinkelspiel, Deceased (see listing under name of Florence Hellman Ehrman)		
Jules Wesselink (see listing under name of Henry Van Ruiten)		
West Gateway Mutual Water Co.	105	84
Henry Westra and Hilda Westra	40	32
John D. Westra (see listing under name of Orla Company)		
Francis O. Wharram (see listing under name of Shayman & Wharram)		
Whittier Union High School District	125	100
Arend Z. Wier	14	11
H. Wiersema, aka Harm Wiersema and Pearl Wiersema	16	13
William Wiersma and Elbra Wiersma	7	6
Richard Wigboly (see listing under name of Central Manufacturing District, Inc.)		
Mary Wilcox (see listing under name of Jenkins Realty Mutual Water Co.)		
Ralph P. Williams and Mary Williams	14	11
Wilshire Oil Company of California	1,795	1,436
Melvin L. Wilson and Marie Wilson	1	1
D. P. Winslow and Dorothy C. Winslow (Berton Elson, tenant)	15	12

Name	Total Water Right	Allowed Pumping Allocation
Helene K. Winters	1	1
Fred E. Wiseman and Grayce Anna Wiseman	2	2
Helen Wolfsberger and Christine Joseph	2	2
Volney Womack	0	0
Cho Shee Woo (Hong Woo and Ngorn Seung Woo, as agents of property for Cho Shee Woo)	20	16
Gerrit Wybenga and Rena Wybenga	10	8
George Yamamoto and Alice Yamamoto, also known as Fumi Yamamoto (Fumi Garden Farms, Inc., tenant) (see also listing under name of Southern California Edison Company)	17	14
Paul N. Yokota and Miyo Yokota	4	4
Minoru Yoshijima (see listing under name of Kazuo Hatanaka)		
Frank Yoshioka	0	0
Maxine Young	3	3
Mrs. A. Zandvliet also known as Anna A. Zandvliet	8	6
Arnold Zeilstra and Nellie Zeilstra	6	5
George Zivelonghi and Antonio Zivelonghi	121	97
Dick Zuidervaart and Janna Zuidervaart (Artesia Milling Company, tenant)	1	1
Andy Zylstra	0	0
Zylstra Bros. a partnership consisting of Lammert Zylstra and William Zylstra (see listing under name of John H. Coito)		
John Zylstra and Leonard J. Zylstra, doing business as The Zylstra Dairy	22	18
Leonard Zylstra (not the same person as Leonard J. Zylstra	0	0

4. Transition in Administrative Year - Application. "Year" and "Administrative Year" as used throughout this judgment shall mean the water year; provided that with the first fiscal year (July 1 - June 30) commencing at least four months after the "Amended Judgment" became final, and thereafter, said words shall mean the fiscal year. Since this will provide a transitional Administrative year of nine months, October 1 - June 30, ("short year" hereafter), notwithstanding the finding and determinations in the annual Watermaster report for the then last preceding water year, the Allowed Pumping Allocations of the parties and the quantity which Defendant City of Los Angeles is annually permitted to extract from Central Basin for said short year shall be based on three-quarters of the otherwise allowable quantity. During said short year, because of hardships that might otherwise result, any overextractions by a party shall be deemed pursuant to paragraph 2, Subpart B of Part III of this judgment (p. 61), and it shall be deemed that the Watermaster has made the determination of unreasonable hardship to which reference is therein made.

II. APPOINTMENT OF WATERMASTER; WATERMASTER ADMINISTRATION PROVISIONS. Department of Water Resources of the State of California is hereby appointed Watermaster, for an indefinite term, but subject to removal by the Court, to administer this judgment and shall have the following powers, duties and responsibilities:

1. Duties, Powers and Responsibilities of Watermaster. In order to assist the Court in the administration and enforcement of the provisions of this judgment and to keep the Court

fully advised in the premises, the Watermaster shall have the following duties, powers and responsibilities in addition to those before or hereafter provided in this judgment:

(a) Watermaster May Require Reports, Information and Records. To require of parties the furnishing of such reports, information and records as may be reasonably necessary to determine compliance or lack of compliance by any party with the provisions of this judgment.

(b) Requirement of Measuring Devices. To require all parties or any reasonable classification of parties owning or operating any facilities for the extraction of ground water from Central Basin to install and maintain at all times in good working order at such party's own expense, appropriate measuring devices at such times and as often as may be reasonable under the circumstances and to calibrate or test such devices.

(c) Inspections by Watermaster. To make inspections of ground water production facilities and measuring devices at such times and as often as may be reasonable under the circumstances and to calibrate or test such devices.

(d) Annual Report. The Watermaster shall prepare, file with the Court and mail to each of the parties on or before the 15th day of the fourth month following the end of the preceding Administrative year, an annual report for such year, the scope of which shall include but not be limited to the following:

1. Ground Water Extractions
2. Exchange Pool Operation
3. Use of Imported Water

4. Violations of Judgment and Corrective Action Taken

5. Change of Ownership of Total Water Rights

6. Watermaster Administration Costs

7. Recommendations, if any.

(e) Annual Budget and Appeal Procedure in Relation Thereto. The Watermaster shall annually prepare a tentative budget for each Administrative year stating the anticipated expense for administering the provisions of this judgment. The Watermaster shall mail a copy of said tentative budget to each of the parties hereto at least 60 days before the beginning of each Administrative year. For the first Administrative year of operation under this judgment, if the Watermaster is unable to meet the above time requirement, the Watermaster shall mail said copies as soon as possible. If any party hereto has any objection to said tentative budget, it shall present the same in writing to the Watermaster within 15 days after the date of mailing of said tentative budget by the Watermaster. If no objections are received within said period, the tentative budget shall become the final budget. If objections are received, the Watermaster shall, within 10 days thereafter, consider such objections, prepare a final budget and mail a copy thereof to each party hereto, together with a statement of the amount assessed to each party. Any party may apply to the Court within 15 days after the mailing of such final budget for a revision thereof based on specific objections thereto. The parties hereto shall make the payments otherwise required of them to the Watermaster even though such a request for revision has been filed with the Court. Upon any revision by the Court the

Watermaster shall either remit to the parties their prorata portions of any reduction in the budget, or credit their accounts with respect to their budget assessments for the next ensuing Administrative year, as the Court shall direct.

The amount to be assessed to each party shall be determined as follows: If that portion of the final budget to be assessed to the parties is equal to or less than $20.00 per party then the cost shall be equally apportioned among the parties. If that portion of the final budget to be assessed to parties is greater than $20.00 per party then each party shall be assessed a minimum of $20.00. The amount of revenue expected to be received through the foregoing minimum assessments shall be deducted from that portion of the final budget to be assessed to the parties and the balance shall be assessed to the parties having Allowed Pumping Allocations, such balance being divided among them proportionately in accordance with their respective Allowed Pumping Allocations.

Payment of the assessment provided for herein, subject to adjustment by the Court as provided, shall be made by each such party prior to beginning of the Administrative year to which the assessment relates, or within 40 days after the mailing of the tentative budget, whichever is later. If such payment by any party is not made on or before said date, the Watermaster shall add a penalty of 5% thereof to such party's statement. Payment required of any party hereunder may be enforced by execution issued out of the Court, or as may be provided by order hereinafter made by the Court, or by other proceedings by the Watermaster or by any party hereto on the Watermaster's behalf.

Any money unexpended at the end of any Administrative year shall be applied to the budget of the next succeeding Administrative year.

Notwithstanding the above, no part of the budget of the Watermaster shall be assessed to the Plaintiff District or to any party who has not extracted water from Central Basin for a period of two successive Administrative years prior to the Administrative year in which the tentative budget should be mailed by the Watermaster under the provisions of this subparagraph (e).

(f) Rules. The Watermaster may adopt and amend from time to time such rules as may be reasonably necessary to carry out its duties, powers and responsibilities under the provisions of this judgment. The rules shall be effective on such date after the mailing thereof to the parties as is specified by the Watermaster, but not sooner than 30 days after such mailing.

2. Use of Facilities and Data Collected by Other Governmental Agencies. The Watermaster is directed not to duplicate the collection of data relative to conditions of the Central Basin which is then being collected by one or more governmental agencies, but where necessary the Watermaster may collect supplemental data. Where it appears more economical to do so, the Watermaster is directed to use such facilities of other governmental agencies as are available to it under either no cost or cost agreements with respect to the receipt of reports, billings to parties, mailings to parties, and similar matters.

3. Appeal from Watermaster Decisions Other Than With Respect to Budget. Any party interested therein who has objection to any rule, determination, order or finding made by the Watermaster, may make objection thereto in writing delivered to the Watermaster within 30 days after the date the Watermaster mails written notice of the making of such rule, determination, order or finding, and within 30 days after such delivery the Watermaster shall consider said objection and shall amend or affirm his rule, determination, order or finding and shall give notice thereof to all parties. Any such party may file with the Court within 30 days from the date of said notice any objection to such rule, determination, order or finding of the Watermaster and bring the same on for hearing before the Court at such time as the Court may direct, after first having served said objection upon all other parties. The Court may affirm, modify, amend or overrule any such rule, determination, order or finding of the Watermaster. The provisions of this paragraph shall not apply to budgetary matters, as to which the appellate procedure has heretofore been set forth. Any objection under this paragraph shall not stay the rule, determination, order or finding of the Watermaster. However, the Court, by ex parte order, may provide for a stay thereof on application of any interested party on or after the date that any such party delivers to the Watermaster any written objection.

4. Effect of Non-Compliance by Watermaster With Time Provisions. Failure of the Watermaster to perform any duty, power or responsibility set forth in this judgment within the time limitation herein set forth shall not deprive the

Watermaster of authority to subsequently discharge such duty, power or responsibility, except to the extent that any such failure by the Watermaster may have rendered some otherwise required act by a party impossible.

III. PROVISIONS FOR PHYSICAL SOLUTION TO MEET THE WATER REQUIREMENTS IN CENTRAL BASIN. In order to provide flexibility to the injunction set forth in Part I of the judgment, and to assist in a physical solution to meet water requirements in Central Basin, the injunction so set forth is subject to the following provisions.

A. Carryover of Portion of Allowed Pumping Allocation.

(1) Each party adjudged to have a Total Water Right or water rights and who, during a particular Administrative year, does not extract from Central Basin a total quantity equal to such party's Allowed Pumping Allocation for the particular Administrative year, less any allocated subscriptions by such party to the Exchange Pool, or plus any allocated requests by such party for purchase of Exchange Pool water, is permitted to carry over (the "One Year Carryover") from such Administrative year the right to extract from Central Basin in the next succeeding Administrative year so much of said total quantity as it did not extract in the particular Administrative year, not to exceed 20% of such party's Allowed Pumping Allocation, or 20 acre feet, whichever of said 20% or 20 acre feet is the larger.

(2) Following the declaration of a Declared Water Emergency and until the Declared Water Emergency ends either

by expiration or by resolution of the Board of Directors of the Central and West Basin Water Replenishment District, each party adjudged to have a Total Water Right or water rights and who, during a particular Administrative year, does not extract from Central Basin a total quantity equal to such party's Allowed Pumping Allocation for the particular Administrative year, less any allocated subscriptions by such party to the Exchange Pool, or plus any allocated requests by such party for purchase of Exchange Pool water, is permitted to carry over (the "Drought Carryover") from such Administrative year the right to extract from Central Basin so much of said total quantity as it did not extract during the period of the Declared Water Emergency, to the extent such quantity exceeds the One Year Carryover, not to exceed an additional 35% of such party's Allowed Pumping Allocation, or additional 35 acre feet, whichever of said 35% or 35 acre feet is the larger. Carryover amounts shall first be allocated to the One Year Carryover and any remaining carryover amount for that year shall be allocated to the Drought Carryover.

(3) No further amounts shall be added to the Drought Carryover following the end of the Declared Water Emergency, provided however that in the event another Declared Water Emergency is declared, additional Drought Carryover may be added, to the extent such additional Drought Carryover would not cause the total Drought Carryover to exceed the limits set forth above.

(4) The Drought Carryover shall be supplemental to and shall not affect any previous drought carryover acquired by a party pursuant to previous order of the court.

B. When Over-extractions May be Permitted.

1. Underestimation of Requirements for Water. Any party hereto having an Allowed Pumping Allocation and not in violation of any provision of this judgment may extract in an Administrative year an additional quantity of water not to exceed: (a) 20% of such party's Allowed Pumping Allocation or 20 acre feet, whichever is greater, and (b) any amount in addition thereto which may be approved in advance by the Watermaster.

2. Reductions in Allowed Pumping Allocations in Succeeding Years to Compensate for Permissible Overextractions. Any such party's Allowed Pumping Allocation for the following Administrative year shall be reduced by the amount over-extracted pursuant to paragraph 1 above, provided that if the Watermaster determines that such reduction in the party's Allowed Pumping Allocation in one Administrative year will impose upon such a party an unreasonable hardship, the said reduction in said party's Allowed Pumping Allocation shall be prorated over a period of five (5) Administrative years succeeding that in which the excessive extractions by the party occurred. Application for such relief to the Watermaster must be made not later than the 40th day after the end of the Administrative year in which such excessive pumping occurred. Watermaster shall grant such relief if such over-extraction, or any portion thereof, occurred during a period of Declared Water Emergency.

3. Reductions in Allowed Pumping Allocations for the Next Succeeding Administrative Year to Compensate for Overpumping. Whenever a party over-extracts in excess of 20% of such party's Allowed Pumping Allocation, or 20 acre feet, whichever is greater, and such excess has not been approved in advance by the Watermaster, then such party's Allowed Pumping Allocation for the following Administrative year shall be reduced by an amount equivalent to its total over-extractions in the particular Administrative year in which it occurred.

4. Reports of Certain Over-extractions to the Court. Whenever a party over-extracts in excess of 20% of such party's Allowed Pumping Allocation, or 20 acre feet, whichever is greater, without having obtained prior approval of the Watermaster, such shall constitute a violation of the judgment and the Watermaster shall make a written report to the Court for such action as the Court may deem necessary. Such party shall be subject to such injunctive and other processes and action as the Court might otherwise take with regard to any other violation of such judgment.

5. Effect of Over-extractions on Rights. Any party who over-extracts from Central Basin in any Administrative year shall not acquire any additional rights by reason of such over-extractions; nor, shall any required reductions in extractions during any subsequent years reduce the Total Water Right or water rights of any party to the extent said over-extractions are in compliance with paragraph 1 above.

6. Pumping Under Agreement With Plaintiff During Periods of Emergency. Plaintiff overlies Central Basin and

engages in activities of replenishing the ground waters thereof. Plaintiff by resolution has appropriated for use during emergencies the quantity of 17,000 acre feet of imported and reclaimed water replenished by it into Central Basin, and pursuant to such resolution Plaintiff reserves the right to use or cause the use of such quantity during such emergency periods.

(a) Notwithstanding any other provision of this judgment, parties who are water purveyors (including successors in interest) are authorized to enter into agreements with Plaintiff under which such water purveyors may exceed their respective Allowed Pumping Allocations for the particular administrative year when the following conditions are met:

(1) Plaintiff is in receipt of a resolution of the Board of Directors of the Metropolitan Water District of Southern California ("MWD") that there is an actual or immediately threatened temporary shortage of MWD's imported water supply compared to MWD's needs, or a temporary inability to deliver MWD's imported water supply throughout its area, which will be alleviated by overpumping from Central Basin.

(2) The Board of Directors of both Plaintiff and Central Basin Municipal Water District by resolutions concur in the resolution of MWD's Board of Directors, and the Board of Directors of Plaintiff finds in its resolution that the average minimum elevation of water surface among those wells in the Montebello Forebay of the Central Basin designated as Los Angeles County Flood Control District Wells Nos. 1601T, 1564P, 1615P,

and 1626L, is at least 43.7 feet above sea level. This computation shall be based upon the most recent "static readings" taken, which shall have been taken not more than four weeks prior. Should any of the wells designated above become destroyed or otherwise be in a condition so that readings cannot be made, or the owner prevent their use for such readings the Board of Directors of the Plaintiff may, upon appropriate engineering recommendation substitute such other well or wells as it may deem appropriate.

(3) In said resolution, Plaintiff's Board of Directors sets a public hearing, and notice of the time, place and date thereof (which may be continued from time to time without further notice) is given by First Class Mail to the current designees of the parties, filed and served in accordance with Part V, paragraph 3 of this Judgment. Said notice shall be mailed at least five (5) days before the scheduled hearing date.

(4) At said public hearing, parties (including successors in interest) are given full opportunity to be heard, and at the conclusion thereof the Board of Directors of Plaintiff by resolution decides to proceed with agreements under this Part III-B.

(5) For purposes of this Part III-B, "water purveyors" mean those parties (and successors in interest) which sell water to the public whether regulated public utilities, mutual water companies or public entities, which have a connection or connections for the taking

of imported water of MWD, or access to imported water of MWD through a connection, and which normally supply part of their customer's needs with such imported water.

(b) All such agreements shall be subject to the following requirements, and such others as Plaintiff's Board of Directors shall require:

(1) They shall be of uniform content except as to quantity involved, and any special provisions considered necessary or desirable with respect to local hydrological conditions or good hydrologic practice.

(2) They shall be offered to all water purveyors, excepting those which Plaintiff's Board of Directors determine should not over pump because such over pumping would occur in undesirable proximity to a sea water barrier project designed to forestall sea water intrusion, or within or in undesirable proximity to an area within Central Basin wherein groundwater levels are at an elevation where over pumping is under all the circumstances then undesirable.

(3) The maximum terms for the agreements shall be four months, which agreements shall commence on the same date and end on the same date (and which may be executed at any time within the four month period), unless an extension thereof is authorized by the Court, under Part IV of this judgment.

(4) They shall contain provisions that the water purveyor executing the agreement pay to the Plaintiff a

price in addition to the applicable replenishment assessment determined on the following formula. The normal price per acre-foot of Central Basin Municipal Water District's (CBMWD) treated domestic and municipal water, as "normal" price of such category of water is defined in Part C, paragraph 10 (price to be paid for Exchange Pool Water) as of the beginning of the contract term less the deductions set forth in said paragraph 10 for the administrative year in which the contract term commences. The agreement shall provide for adjustments in the first of said components for any proportional period of the contract term during which the CBMWD said normal price is changed, and if the agreement straddles two administrative years, the said deductions shall be adjusted for any proportionate period of the contract term in which the amount thereof or of either subcomponent changes for purposes of said paragraph 10. Any price for a partial acre-foot shall be computed prorata. Payments shall be due and payable on the principle that over extractions under the agreement are of the last water pumped in the fiscal year, and shall be payable as the agreement shall provide.

(5) They shall contain provisions that:

(a) All of such agreements (but not less than all) shall be subject to termination by Plaintiff if, in the Judgment of Plaintiff's Board of Directors, the conditions or threatened conditions upon which they

were based have abated to the extent over extractions are no longer considered necessary; and (b) that any individual agreement or agreements may be terminated if the Plaintiff's Board of Directors finds that adverse hydrologic circumstances have developed as a result of over extractions by any water purveyor or purveyors which have executed said agreements, or for any other reason that Plaintiff's Board of Directors finds good and sufficient.

(c) Other matters applicable to such agreements and over pumping thereunder are as follows, without need for express provisions in the agreements;

(1) The quantity of over pumping permitted shall be additional to that which the water purveyor could otherwise over pump under this Judgment.

(2) The total quantity of permitted over pumping under all said agreements during said four months shall not exceed Seventeen thousand (17,000) acre feet, but the individual water purveyor shall not be responsible or affected by any violation of this requirement. That total is additional to over extractions otherwise permitted under this Judgment.

(3) Only one four month period may be utilized by Plaintiff in entering into such agreements, as to any one emergency or continuation thereof declared by MWD's Board of Directors under paragraph 6(a).

(4) Plaintiff may utilize the ex parte provisions of Part IV of this Judgment in lieu of the authority

contained herein (which ex parte provisions are not limited as to time, nature of relief, or terms of any agreements), but neither Plaintiff nor any other party shall utilize both as to any one such emergency or continuation thereof.

(5) If any party claims it is being damaged or threatened with damage by the over extractions by any party to such an agreement, the first party or the Watermaster may seek appropriate action of the Court for termination of any such agreement upon notice of hearing to the party complaining, to the party to said agreement, to the plaintiff, and to any parties who have filed a request for special notice. Any termination shall not affect the obligation of the party to make payments under the agreement for over extractions which did occur thereunder.

(6) Plaintiff shall maintain separate accounting of the proceeds from payments made pursuant to agreements entered into under this part. Said fund shall be utilized solely for purposes of replenishment in replacement of waters in Central Basin and West Basin. Plaintiff shall as soon as practicable cause replenishment in Central Basin by the amounts to be overproduced pursuant to this Paragraph 6 commencing at Page 63, whether through spreading, injection, or in lieu agreements.

(7) Over extractions pursuant to the agreements shall not be subject to the "make up" provisions of the

Judgment as amended, provided that if any party fails to make payments as required by the agreement, Plaintiff may require such "make up" under Paragraph 3, Subpart B, Part III of the Judgment (Page 62).

(8) Water Purveyor under any such agreement may, and is encouraged to enter into appropriate arrangements with customers who have water rights in Central Basin under or pursuant to this Judgment whereby the Water Purveyor will be assisted in meeting the objectives of the agreement.

(9) Nothing in this Paragraph 6 limits the exercise of the reserved jurisdiction of the court except as provided in subparagraph (c) (4) above.

7. Exemption for Extractors of Contaminated Groundwater. Any party herein may petition the Replenishment District for a Non-consumptive Water Use Permit as part of a project to remedy or ameliorate groundwater contamination. If the petition is granted as set forth in this part, the petitioner may extract the groundwater as permitted hereinafter, without the production counting against the petitioner's production rights.

(a) If the Board of the Replenishment District determines by Resolution that there is a problem of groundwater contamination that a proposed program will remedy or ameliorate, an operator may make extractions of groundwater to remedy or ameliorate that problem without the production counting against the petitioner's production rights if the water is not applied to beneficial surface use, its extractions are made in compliance with all the terms and conditions of the Board Resolution, and

the Board has determined in the Resolution either of the following:

(1) The groundwater to be extracted is unusable and cannot be economically treated or blended for use with other water.

(2) The proposed program involves extraction of usable water in the same quantity as will be returned to the underground without degradation of quality.

(b) The Resolution may provide those terms and conditions the Board deems appropriate, including, but not limited to, restrictions on the quantity of the extractions to be so exempted, limitations on time, periodic reviews, requirement of submission of test results from a Board-approved laboratory, and any other relevant terms or conditions.

(c) Upon written notice to the operator involved, the Board may rescind or modify its Resolution. The rescission or modification of the Resolution shall apply to groundwater extractions occurring more than ten days after the rescission or modification. Notice of rescission or modification shall be either mailed first class mail, postage prepaid, at least two weeks prior to the meeting of the Board at which the rescission or modification will be made to the address of record of the operator or personally delivered two weeks prior to the meeting.

(d) The Board's decision to grant, deny, modify or revoke a permit or to interrupt or stop a permitted project may be appealed to this court within thirty days of the notice thereof to the applicant and upon thirty days notice to the designees of all parties herein.

(e) The Replenishment District shall monitor and periodically inspect the project for compliance with the terms and conditions for any permit issued pursuant to these provisions.

(f) No party shall recover costs from any other party herein ~~on~~ in connection with ~~determinators~~ determinations made with respect to this part.

C. Exchange Pool Provisions.

(1) Definitions.

For purposes of these Exchange Pool provisions, the following words and terms have the following meanings:

(a) "Exchange Pool" is the arrangement hereinafter set forth whereby certain of the parties, ("Exchangees") may, notwithstanding the other provisions of the judgment, extract additional water from Central Basin to meet their needs, and certain other of the parties ("Exchangors"), reduce their extractions below their Allowed Pumping Allocations in order to permit such additional extractions by others.

(b) "Exchangor" is one who offers, voluntarily or otherwise, pursuant to subsequent provisions, to reduce its extractions below its Allowed Pumping Allocation in order to permit such additional extractions by others.

(c) "Exchangee" is one who requests permission to extract additional water from Central Basin.

(d) "Undue hardship" means unusual and severe economic or operational hardship, other than that arising (i) by reason of any differential in quality that might exist between water extracted from Central Basin and water available for importation

or (ii) by reason of any difference in cost to a party in subscribing to the Exchange Pool and reducing its extractions of water from Central Basin in an equivalent amount as opposed to extracting any such quantity itself.

2. Parties Who May Purchase Water Through the Exchange Pool. Any party not having existing facilities for the taking of imported water as of the beginning of any Administrative year, and any party having such facilities as of the beginning of any Administrative year who is unable, without undue hardship, to obtain, take, and put to beneficial use, through its distribution system or systems existing as of the beginning of the particular Administrative year, imported water in a quantity which, when added to its Allowed Pumping Allocation for that particular Administrative year, will meet its estimated needs for that particular Administrative year, may purchase water from the Exchange Pool, subject to the limitations contained in this Subpart C of this Part III (Subpart "C" hereinafter).

3. Procedure for Purchasing Exchange Pool Water. Not later than the 40th day following the commencement of each Administrative year, each such party desiring to purchase water from the Exchange Pool shall file with the Watermaster a request to so purchase, setting forth the amount of water in acre feet that such party estimates that it will require during the then current Administrative year in excess of the total of:

(a) Its Allowed Pumping Allocation for that particular Administrative year; and

(b) The imported water, if any, which it estimates it will be able, without undue hardship, to obtain, take and put to

beneficial use, through its distribution system or systems existing as of the beginning of that particular Administrative year.

Any party who as of the beginning of any Administrative year has existing facilities for the taking of imported water and who makes a request to purchase from the Exchange Pool must provide with such request substantiating data and other proof which, together with any further data and other proof requested by the Watermaster, establishes that such party is unable without undue hardship, to obtain, take and put to beneficial use through its said distribution system or systems a sufficient quantity of imported water which, when added to its said Allowed Pumping Allocation for the particular Administrative year, will meet its estimated needs. As to any such party, the Watermaster shall make a determination whether the party has so established such inability, which determination shall be subject to review by the court under the procedure set forth in Part II of this judgment. Any party making a request to purchase from the Exchange Pool shall either furnish such substantiating data and other proof, or a statement that such party had no existing facilities for the taking of imported water as of the beginning of that Administrative year, and in either event a statement of the basis for the quantity requested to be purchased.

4. Subscriptions to Exchange Pool.

(a) Required Subscription. Each party having existing facilities for the taking of imported water as of the beginning of any Administrative year hereby subscribed to the Exchange Pool for purposes of meeting Category (a) requests thereon, as more

particularly defined in paragraph 5 of this Subpart C, twenty percent (20%) of its Allowed Pumping Allocation, or the quantity of imported water which it is able, without undue hardship, to obtain, take and put to beneficial use through its distribution system or systems existing as of the beginning of the particular Administrative year in addition to such party's own estimated needs for imported water during that water year, whichever is the lesser. A party's subscription under this subparagraph (a) and subparagraph (b) of this paragraph 4 is sometimes hereinafter referred to as a 'required subscription'.

(b) Report to Watermaster by Parties with Connections and Unable to Subscribe 20%. Any party having existing facilities for the taking of imported water and estimating that it will be unable, without undue hardship, in that Administrative year to obtain, take and put to beneficial use through its distribution system or systems existing as of the beginning of that Administrative year, sufficient imported water to further reduce its extractions from the Central Basin by twenty percent (20%) of its Allowed Pumping Allocation for purposes of providing water to the Exchange Pool must furnish not later than the 40th day following the commencement of such Administrative year substantiating data and other proof which, together with any further data and other proof requested by the Watermaster, establishes said inability or such party shall be deemed to have subscribed twenty percent (20%) of its Allowed Pumping Allocation for the purpose of providing water to the Exchange Pool. As to any such party so contending such inability, the Watermaster shall make a determination whether the party has so established such

inability, which determination shall be subject to review by the Court under the procedure set forth in Part II of this judgment.

(c) Voluntary Subscriptions. Any party, whether or not having facilities for the taking of imported water, who desires to subscribe to the Exchange Pool a quantity or further quantity of its Allowed Pumping Allocation, may so notify the Watermaster in writing of the quantity of such offer on or prior to the 40th day following the commencement of the particular Administrative year. Such subscriptions are referred to hereinafter as "voluntary subscriptions." Any Exchangor who desires that any part of its otherwise required subscription not needed to fill Category (a) requests shall be available for Category (b) requests may so notify the Watermaster in writing on or prior to said 40th day. If all of that Exchangor's otherwise required subscription is not needed in order to fill Category (a) requests, the remainder of such required subscription not so used, or such part thereof as such Exchangor may designate, shall be deemed to be a voluntary subscription.

5. Limitations on Purchases of Exchange Pool Water and Allocation of Requests to Purchase Exchange Pool Water Among Exchangors.

(a) Categories of Requests. Two categories of Exchange Pool requests are established as follows:

(1) Category (a) requests. The quantity requested by each Exchangee, whether or not that Exchangee has an Allowed Pumping Allocation, which quantity is not in excess of 150% of its Allowed Pumping Allocation, if any, or 100 acre feet, whichever is greater. Requests or portions thereof within the

above criteria are sometimes hereinafter referred to as "Category (a) requests."

(2) Category (b) requests. The quantity requested by each Exchangee having an Allowed Pumping Allocation to the extent the request is in excess of 150% of that Allowed Pumping Allocation or 100 acre feet, whichever is greater, and the quantity requested by each Exchangee having no Allowed Pumping Allocation to the extent the request is in excess of 100 acre feet. Portions of requests within the above criteria are sometimes hereinafter referred to as "Category (b) requests."

(b) Filling of Category (a) Requests. All Exchange Pool subscriptions, required and voluntary, shall be available to fill Category (a) requests. Category (a) requests shall be filled first from voluntary subscriptions, and if voluntary subscriptions should be insufficient to fill all Category (a) requests required subscriptions shall be then utilized to fill Category (a) requests. All Category (a) requests shall be first filled before any Category (b) requests are filled.

(c) Filling of Category (b) Requests. To the extent that voluntary subscriptions have not been utilized in filling Category (a) requests, Category (b) requests shall be filled only out of any remaining voluntary subscriptions. Required subscriptions will then be utilized for the filling of any remaining Category (b) requests.

(d) Allocation of Requests to Subscriptions When Available Subscriptions Exceed Requests. In the event the quantity of subscriptions available for any category of requests exceeds those requests in that category, or exceeds the remainder

of those requests in that category, such requests shall be filled out of such subscriptions proportionately in relation to the quantity of each subscription.

(e) Allocation of Subscriptions to Category (b) Requests in the Event of Shortage of Subscriptions. In the event available subscriptions are insufficient to meet Category (b) requests, available subscriptions shall be allocated to each request in the proportion that the particular request bears to the total requests of the particular category.

6. Additional Voluntary Subscriptions. If subscriptions available to meet the requests of Exchangees are insufficient to meet all requests, additional voluntary subscriptions may be solicited and received from parties by the Watermaster. Such additional subscriptions shall be allocated first to Category (a) requests to the extent unfilled, and next to Category (b) requests to the extent unfilled. All allocations are to be otherwise in the same manner as earlier provided in paragraph 5 (a) through 5 (e) inclusive.

7. Effect if Category (a) Requests Exceed Available Subscriptions, Both Required and Voluntary. In the event that the quantity of subscriptions available to fill Category (a) requests is less than the total quantity of such requests, the Exchangees may, nonetheless, extract the full amount of their Category (a) requests otherwise approved by the Watermaster as if sufficient subscriptions were available. The amounts received by the Watermaster on account of that portion of the approved requests in excess of the total quantities available from Exchangors shall either be paid by the Watermaster to Central &

West Basin Water Replenishment District in trust for the purpose of purchasing imported water and spreading the same in Central Basin for replenishment thereof, or credited to an account of said Plaintiff District on the books of the Watermaster, at the option of said Plaintiff District. Thereafter said Plaintiff District may, at any time, withdraw said funds or any part thereof so credited in trust for the aforesaid purpose, or may by the 40th day of any Administrative year notify the Watermaster that it desires all or any portion of said funds to be expended by the Watermaster for the purchase of water available from subscriptions by Exchangors in the event the total quantity of such subscriptions exceeds the total quantity of approved requests by parties to purchase Exchange Pool water. To the extent that there is such an excess of available subscriptions over requests and to the extent that the existing credit in favor of Plaintiff District is sufficient to purchase such excess quantity at the price established for Exchange Pool purchases during that Administrative year, the account of the Plaintiff District shall be debited and the money shall be paid to the Exchangors in the same manner as if another party had made such purchase as an Exchangee. The Plaintiff District shall not extract any such Exchange Pool water so purchased.

8. Additional Pumping by Exchangees Pursuant to Exchange Pool Provisions. An Exchangee may extract from Central Basin in addition to its Allowed Pumping Allocation for a particular Administrative year that quantity of water which it has requested to purchase from the Exchange Pool during that Administrative year and which has been allocated to it pursuant

to the provisions of paragraphs 5, 6 and 7. The first pumping by an Exchangee in any Administrative year shall be deemed to be pumping of the party's allocation of Exchange Pool water.

9. Reduction in Pumping by Exchangors. Each Exchangor shall in each Administrative year reduce its extractions of water from Central Basin below its Allowed Pumping Allocation for the particular year in a quantity equal to the quantity of Exchange Pool requests allocated to it pursuant to the provisions of paragraphs 4, 5, 6 and 7 of this Subpart C.

10. Price to be Paid for Exchange Pool Water. The price to be paid by Exchangees and to be paid to Exchangors per acre foot for required and voluntary subscriptions of Exchangors utilized to fill requests on the Exchange Pool by Exchangees shall be the dollar amount computed as follows by the Watermaster for each Administrative year. The "normal" price as of the beginning of the Administrative year charged by Central Basin Municipal Water District (CBMWD) for treated MWD (Metropolitan Water District of Southern California) water used for domestic and municipal purposes shall be determined, and if on that date there are any changes scheduled during that Administrative year in CBMWD's "normal" price for such category of water, the weighted daily "normal" CBMWD price shall be determined and used in lieu of the beginning such price; and there shall be deducted from such beginning or weighted price, as the case may be, the "incremental cost of pumping water in Central Basin" at the beginning of the Administrative year and any then current rate or rates, of assessments levied on the pumping of ground water in Central Basin by Plaintiff District and any other governmental

agency. The "normal" price charged by CBMWD shall be the highest price of CBMWD for normal service excluding any surcharge or higher rate for emergency deliveries or otherwise failing to comply with CBMWD rates and regulations relating to earlier deliveries. The "incremental cost of pumping water in Central Basin" as of the beginning of the Administrative year shall be deemed to be the Southern California Edison Company Schedule No. PA-1 rate per kilowatt-hour, including all adjustments and all uniform authorized additions to the basic rate, multiplied by 560 kilowatt-hours per acre-foot, rounded to the nearest dollar (which number of kilowatt-hours has been determined to represent the average energy consumption to pump an acre-foot of water in Central Basin). In applying said PA-1 rate the charge per kilowatt-hour under the schedule shall be employed and if there are any rate blocks then the last rate block shall be employed. Should a change occur in Edison schedule designations, the Watermaster shall employ that applicable to motors used for pumping water by municipal utilities.

11. Carry-over of Exchange Pool Purchases by Exchangees. An Exchangee who does not extract from Central Basin in a particular Administrative year a quantity of water equal to the total of (a) its Allowed Pumping Allocation for that particular Administrative year, reduced by any authorized amount of carry-over into the next succeeding Administrative year pursuant to the provisions of Subpart A of Part III of this judgment, and (b) the quantity that it purchased from the Exchange Pool for that particular Administrative year, may carry over into the next succeeding Administrative year the right to

extract from Central Basin a quantity equal to the difference between said total and the quantity actually extracted in that Administrative year, but not exceeding the quantity purchased from the Exchange Pool for that Administrative year. Any such carry-over shall be in addition to that provided in said Subpart A of Part III.

If the 'Basinwide Average Exchange Pool Price' in the next succeeding Administrative year exceeds the 'Exchange Pool Price' in the previous Administrative year any such Exchangee exercising such carry-over rights hereinabove provided shall pay to the Watermaster, forthwith upon the determination of the 'Exchange Pool Price' in said succeeding Administrative year, and as a condition to such carry-over rights, an additional amount determined by multiplying the number of acre feet of carry-over by the difference in 'Exchange Pool Price' as between the two Administrative years. Such additional payment shall be miscellaneous income to the Watermaster which shall be applied by him against that share of the Watermaster's budget to be paid by the parties to this Agreement for the second Administrative year succeeding that in which the Exchange Pool water was so purchased.

12. Notification by Watermaster to Exchangors and Exchangees of Exchange Pool Requests and Allocations Thereof and Price of Exchange Pool Water. Not later than the 65th day after the commencement of each Administrative year, the Watermaster shall determine and notify all Exchangors and Exchangees of the total of the allocated requests for Exchange Pool water and shall provide a schedule divided into categories of requests showing

the quantity allocated to each Exchangee and a schedule of the allocation of the total Exchange Pool requirements among the Exchangors. Such notification shall also advise Exchangors and Exchangees of the prices to be paid to Exchangors for subscriptions utilized and the Exchange Pool Price for that Administrative year as determined by the Watermaster. The determinations of the Watermaster in this regard shall be subject to review by the Court in accordance with the procedure set forth in Part II of this judgment.

13. Payment by Exchangees. Each Exchangee shall, on or prior to last day of the third month of each Administrative year, pay to the Watermaster one-quarter of said price per acre-foot multiplied by the number of acre feet of such party's approved request and shall, on or before the last day of each of the next succeeding three months, pay a like sum to the Watermaster. Such amounts must be paid by each Exchangee regardless of whether or not it in fact extracts or uses any of the water it has requested to purchase from the Exchange Pool.

14. Payments to Exchangors. As soon as possible after receipt of moneys from Exchangees, the Watermaster shall remit to the Exchangors their prorata portions of the amount so received in accordance with the provisions of paragraph 10 above.

15. Delinquent Payments. Any amounts not paid on or prior to any due date above shall carry interest at the rate of 1% per month or any part of a month. Any amounts required to be so paid may be enforced by the equitable powers of the Court, including, but not limited to, the injunctive process of the Court. In addition thereto, the Watermaster, as Trustee for the

Exchangors, may enforce such payment by any appropriate legal action, and shall be entitled to recover as additional damages reasonable attorneys' fees incurred in connection therewith. If any Exchangee shall fail to make any payments required of it on or before 30 days after the last payment is due, including any accrued interest, said party shall thenceforward not be entitled to purchase water from the Exchange Pool in any succeeding Administrative year except upon order of the Court, upon such conditions as the Court may impose.

IV. CONTINUING JURISDICTION OF THE COURT.

The Court hereby reserves continuing jurisdiction and upon application of any interested party, or upon its own motion, may review and redetermine the following matters and any matters incident thereto:

(a) Its determination of the permissible level of extractions from Central Basin in relation to achieving a balanced basin and an economic utilization of Central Basin for ground water storage, taking into account any then anticipated artificial replenishment of Central Basin by governmental agencies for the purpose of alleviating what would otherwise be annual overdrafts upon Central Basin and all other relevant factors.

(b) Whether in accordance with applicable law any party has lost all or any portion of his rights to extract ground water from Central Basin and, if so, to ratably adjust the Allowed Pumping Allocations of the other parties and ratably thereto any remaining Allowed Pumping Allocation of such party.

(c) To remove any Watermaster appointed from time to time and appoint a new Watermaster; and to review and revise the duties, powers and responsibilities of the Watermaster and to make such other and further provisions and orders of the Court that may be necessary or desirable for the adequate administration and enforcement of the judgment.

(d) To revise the price to be paid by Exchangees and to Exchangors for Exchange Pool purchases and subscriptions.

(e) In case of emergency or necessity, to permit extractions from Central Basin for such periods as the Court may determine: (i) ratably in excess of the Allowed Pumping Allocations of the parties; or (ii) on a non-ratable basis by certain parties if either compensation or other equitable adjustment for the benefit of the other parties is provided. Such overextractions may be permitted not only for emergency and necessity arising within Central Basin area, but to assist the remainder of the areas within The Metropolitan Water District of Southern California in the event of temporary shortage or threatened temporary shortage of its imported water supply, or temporary inability to deliver the same throughout its area, but only if the court is reasonably satisfied that no party will be irreparably damaged thereby. Increased energy cost for pumping shall not be deemed irreparable damage. Provided, however, that the provisions of this subparagraph will apply only if the temporary shortage, threatened temporary shortage, or temporary inability to deliver was either not reasonably avoidable by the Metropolitan Water District, or if reasonably avoidable, good reason existed for not taking the steps necessary to avoid it.

(f) To review actions of the Watermaster.

(g) To assist the remainder of the areas within The Metropolitan Water District of Southern California within the parameter set forth in subparagraph (e) above.

(h) To provide for such other matters as are not contemplated by the judgment and which might occur in the future, and which if not provided for would defeat any or all of the purposes of this judgment to assure a balanced Central Basin subject to the requirements of Central Basin Area for water required for its needs, growth and development.

The exercise of such continuing jurisdiction shall be after 30 days notice to the parties, with the exception of the exercise of such continuing jurisdiction in relation to subparagraphs (e) and (g) above, which may be ex parte, in which event the matter shall be forthwith reviewed either upon the Court's own motion or the motion of any party upon which 30 days notice shall be so given. Within ten (10) days of obtaining any ex parte order, the party so obtaining the same shall mail notice thereof to the other parties. If any other party desires Court review thereof, the party obtaining the ex parte order shall bear the reasonable expenses of mailing notice of the proceedings, or may in lieu thereof undertake the mailing. Any contrary or modified decision upon such review shall not prejudice any party who relied on said ex parte order.

V. GENERAL PROVISIONS.

1. Judgment Constitutes Inter Se Adjudication. This judgment constitutes an inter se adjudication of the respective rights of all parties, except as may be otherwise specifically

indicated in the listing of the rights of the parties at pages 12 through 52 of this judgment, or in Appendix "2" hereof.

2. Assignment, Transfer, Etc., of Rights. Subject to the other provision of this judgment, and any rules and regulations of the Watermaster requiring reports relative thereto, nothing herein contained shall be deemed to prevent any party hereto from assigning, transferring, licensing or leasing all or any portion of such water rights as it may have with the same force and effect as would otherwise be permissible under applicable rules of law as exist from time to time.

3. Service Upon and Delivery to Parties of Various Papers. Service of the judgment on those parties who have executed that certain Stipulation and Agreement for Judgment or who have filed a notice of election to be bound by the Exchange Pool provisions shall be made by first class mail, postage prepaid, addressed to the designee and at the address designated for that purpose in the executed and filed Counterpart of the Stipulation and Agreement for Judgment or in the executed and filed "Notice of Election to be Bound by Exchange Pool Provisions", as the case may be, or in any substitute designation filed with the Court.

Each party who has not heretofore made such a designation shall, within 30 days after the judgment shall have been served upon that party, file with the Court, with proof of service of a copy upon the Watermaster, a written designation of the person to whom and the address at which all future notices, determinations, requests, demands, objections, reports and other

papers and processes to be served upon that party or delivered to that party are to be so served or delivered.

A later substitute designation filed and served in the same manner by any party shall be effective from the date of filing as to the then future notices, determinations, requests, demands, objections, reports and other papers and processes to be served upon or delivered to that party.

Delivery to or service upon any party by the Watermaster, by any other party, or by the Court, or any item required to be served upon or delivered to a party under or pursuant to the judgment may be by deposit in the mail, first class, postage prepaid, addressed to the designee and at the address in the latest designation filed by that party.

4. Judgment Does Not Affect Rights, Powers, Etc., of Plaintiff District. Nothing herein constitutes a determination or adjudication which shall foreclose Plaintiff District from exercising such rights, powers, privileges and prerogatives as it may now have or may hereafter have by reason of provisions of law.

5. Continuation of Order Under Interim Agreement. The order of Court made pursuant to the "Stipulation and Interim Agreement and Petition for Order" shall remain in effect through the water year in which this judgment shall become final (subject to the reserved jurisdiction of the Court).

6. Effect of: Extractions by Exchangees; Reductions in Extractions. With regard to Exchange Pool purchases, the first extractions by each Exchangee shall be deemed the extractions of the quantities of water which that party is

9. Intervention of Successors in Interest and New Parties. Any person who is not a party (including but not limited to successors or parties who are bound by this judgment) and who proposes to produce water from the basin or exercise water rights of a predecessor may seek to become a party to this Judgment through a Stipulation in Intervention entered into with the Plaintiff. Plaintiff may execute said Stipulation on behalf of the other parties herein, but such Stipulation shall not preclude a party from opposing such intervention at the time of the court hearing thereon. Said Stipulation for Intervention must thereupon be filed with the Court, which will consider an order confirming said intervention following thirty (30) days notice to the parties. Thereafter, if approved by the Court, such intervenor shall be a party bound by this Judgment and entitled to the rights and privileges accorded under the physical solution herein.

10. Effect of this Amended Judgment on Orders Filed Herein. This Second Amended Judgment shall not abrogate such rights of additional carry-over of unused water rights as may otherwise exist pursuant to orders herein filed June 2, 1977 and September 29, 1977.

THE CLERK WILL ENTER THIS SECOND AMENDED JUDGMENT FORTHWITH.

DATED: May 6, 1991

/s/ Florence T. Pickard
Judge of the Superior Court

Appendix E

City Ordinance No 2333 v1

ORDINANCE NO. 2333

AN ORDINANCE OF THE CITY OF MONTEBELLO ESTABLISHING A WATER CONSERVATION AND WATER SUPPLY SHORTAGE PROGRAM AND REGULATIONS TO REPLACE THE EXISTING MANDATORY WATER CONSERVATION ORDINANCE NO. 2108 (CHAPTER 8.28 OF THE CITY OF MONTEBELLO MUNICIPAL CODE)

WHEREAS, a reliable minimum supply of potable water is essential to the public health, safety and welfare of the people and economy of the Southern California region;

WHEREAS, Southern California is a semi-arid region and is largely dependent upon imported water supplies. A growing population, climate change, environmental concerns, and other factors in other parts of the State and western United States, make the region highly susceptible to water supply reliability issues;

WHEREAS, careful water management that includes active water conservation measures not only in times of drought, but at all times, is essential to ensure a reliable minimum supply of water to meet current and future water supply needs;

WHEREAS, Article X, Section 2 of the California Constitution declares that the general welfare requires that water resources be put to beneficial use, waste or unreasonable use or unreasonable method of use of water be prevented, and conservation of water be fully exercised with a view to the reasonable and beneficial use thereof;

WHEREAS, California Water Code Section 375 authorizes water suppliers to adopt and enforce a comprehensive water conservation program to reduce water consumption and conserve supplies; and

WHEREAS, the purpose of this chapter is to replace Chapter 8.28 and to establish a water conservation and supply shortage program that will reduce water consumption within the City of Montebello through conservation, enable effective water supply planning, assure reasonable and beneficial use of water, prevent waste of water, and maximize the efficient use of water within the City of Montebello to avoid and minimize the effect and hardship of water shortage to the greatest extent possible; and

WHEREAS, Chapter 8.29 establishes permanent water conservation standards intended to alter behavior related to water use efficiency at all times and further establishes three levels of water supply shortage response actions to be implemented during times of declared water shortage or declared water shortage emergency, with increasing restrictions on water use in response to worsening drought or emergency conditions and decreasing supplies.

WHEREAS, the adoption and enforcement of a water conservation and supply shortage program is necessary to manage the City's potable water supply in the short and long-term and to avoid or minimize the effects of drought and shortage within the City. Such program is essential to ensure a reliable and sustainable minimum supply of water for the public health, safety and welfare.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF MONTBELLO DOES HEREBY ORDAIN AS FOLLOWS:

SECTION 1. Chapter 8.29 is hereby established to the Montebello Municipal Code to read as follows:

8.29.010 Introduction.

This chapter will be known as the City of Montebello Water Conservation and Water Supply Shortage Program. By adoption of this Program by the City Council, existing Chapter 8.28 of the Montebello Municipal Code known as the Mandatory Water Conservation Ordinance is hereby rescinded.

8.29.020 Findings.

a. A reliable minimum supply of potable water is essential to the public health, safety and welfare of the people and economy of the Southern California region and of the City of Montebello.

b. Southern California is a semi-arid region and is largely dependent upon imported water supplies. A growing population, climate change, environmental concerns, and other factors in other parts of the State and western United States, make the region highly susceptible to water supply reliability issues.

c. Careful water management that includes active water conservation measures not only in times of drought, but at all times, is essential to ensure a reliable minimum supply of water to meet current and future water supply needs.

d. Article X, Section 2 of the California Constitution declares that the general welfare requires that water resources be put to beneficial use, waste or unreasonable use or unreasonable method of use of water are to be prevented, and conservation of water is to be fully exercised with a view to the reasonable and beneficial use of available water supplies.

e. Article XI, Section 7 of the California Constitution declares that a city or county may make and enforce within its limits all local, police, sanitary, and other ordinances and regulations not in conflict with general laws.

f. California Water Code Section 375 authorizes water suppliers to adopt and enforce a comprehensive water conservation program to reduce water consumption and conserve supplies.

g. The adoption and enforcement of a water conservation and supply shortage program is necessary to manage the City of Montebello's potable water supply in the short and long-term and to avoid or minimize the effects of drought and shortage within the City of Montebello. Such a program is essential to ensure a reliable and sustainable minimum supply of water for the public health, safety and welfare.

8.29.030 Declaration of Purpose and Intent.

a. The purpose of this chapter is to replace Chapter 8.28 and to establish a water conservation and supply shortage program that will reduce water consumption within the City of Montebello through conservation, enable effective water supply planning, assure reasonable and beneficial use of water, prevent waste of water, and maximize the efficient use of water within the City of Montebello to avoid and minimize the effect and hardship of water shortage to the greatest extent possible.

b. This Chapter establishes permanent water conservation standards intended to alter behavior related to water use efficiency at all times and further establishes three levels of water supply shortage response actions to be implemented during times of declared water shortage or declared water shortage emergency, with increasing restrictions on water use in response to worsening drought or emergency conditions and decreasing supplies.

8.29.040 Definitions.

a. The following words and phrases whenever used in this chapter have the meaning defined in this section:

    1. "City" means City of Montebello and all of its Departments.

    2. "City Council" means the City Council of the City of Montebello.

    3. "Water Purveyor" means the City and any other provider of potable water service in the City of Montebello.

4. "MWD" means the Metropolitan Water District of Southern California.

5. "Section" means a Section of this Chapter unless some other City Ordinance is specifically mentioned.

6. "Fire Department" means the Fire Department of the City of Montebello which serves the City.

7. "Health Department" means the County of Los Angeles Health Services Department, which serves the City and the State of California Department of Health Services, which oversees by permit the operations of potable water systems in the City.

8. "Building Department" means the Building Official and personnel of the Building Department of the City, which serve the City.

9. "Person" means any natural person or persons, corporation, public or private entity, governmental agency or institution, including all agencies and departments of the City, or any other user of water provided within the City.

10. "Landscape irrigation system" means an irrigation system with pipes, hoses, spray heads, or sprinkling devices that are operated by hand or through an automated system.

11. "Large landscape areas" means a lawn, landscape, or other vegetated area, or combination thereof, equal to more than 3,000 square feet of irrigable land.

12. "Single pass cooling systems" means equipment where water is circulated only once to cool equipment before being disposed.

13. "Potable water" means water which is suitable for drinking.

14. "Recycled water" means the reclamation and reuse of non-potable water for beneficial use as defined in Title 22 of the California Code of Regulations.

15. "Billing unit" means the unit of water used to apply water rates for purposes of calculating water charges for a person's water usage.

16. "Station" means a group of irrigation sprinkler spray heads which are controlled through a valve that opens and closes based on a preset time period of an automated time clock or hand operation of a valve.

17. "Water User" means the owner of a property or the tenant of the property which uses potable water provided by a potable water purveyor in the City. A user includes a person or contractor retained by the property owner or tenant to provide landscape maintenance/irrigation services to the property.

18. "Engineering Department/City Engineer" means an established Department of City and a City designated official.

19. "Hot Line" means a telephone, facsimile and/or electronic mail service that is to be installed in the Engineering Department and maintained by the Engineering Department under the direction of the City Engineer for citizens to report apparent violations of this City Ordinance. All information received on the Hot Line shall be reviewed by the City Engineer or his/her designee. Information may be placed on the Hot Line by citizens anonymously.

8.29.050 Application

a. The provisions of this Chapter apply to any person using any potable water provided by a potable water purveyor in the City.

b. The provisions of this Chapter do not apply to uses of water necessary to protect public health and safety or for essential government services, such as police, fire and other similar emergency services.

c. The provisions of this Chapter do not apply to the use of recycled water, with the exception of Section 8.29.060(a).

d. The provisions of this Chapter do not apply to the use of water by commercial nurseries and commercial growers to sustain plants, trees, shrubs, crops or other vegetation intended for commercial sale.

e. This Chapter is intended solely to further the conservation of water. It is not intended to implement any provision of federal, State, or local statutes, ordinances, or regulations relating to protection of water quality or control of drainage or runoff from various sources including rain storms. Refer to the City Engineer or to the State of California Regional Water Quality Control Board for information on any stormwater regulations and stormwater management plans.

f. The City Building Department, in reviewing applications for building permits for development or redevelopment of property, may require the developer to incorporate in his or her development the use of recycled water at such time as it becomes available to the area of the City in lieu of the use of potable water for construction water and/or potable water for the permanent development. The Building Department and the City Planning Department may require the use of water use efficient equipment and designs for development or redevelopment properties.

8.29.060 Permanent Water Conservation Requirements – Prohibition Against Waste

The following water conservation requirements are effective at all times and are permanent. Violations of this section will be considered waste and an unreasonable use of water.

a. **Limits on Watering Hours**: Watering or irrigating of lawn, landscape or other vegetated area with potable water is prohibited between the hours of 10:00 a.m. and one (1) hour before sunset Pacific Standard Time on any day, except by use of a hand-held bucket or similar container, a hand-held hose equipped with a positive self-closing water shut-off nozzle or device, or for very short periods of time for the express purpose of adjusting or repairing an irrigation system. Lawns or other irrigated areas shall not be watered more frequently than every other day. Odd-numbered street-addressed properties may water on odd-numbered dates. Even-numbered street-addressed properties may only do so on even-numbered dates. All irrigated areas may be watered on the 29th day of the month of February every fourth (4th) year or the 31st day of the month having 31 days. The provisions of this subsection shall not apply to restrict watering of newly seeded or reseeded lawns once a year, nor to prohibit drip irrigation systems.

b. **Limit on Watering Duration**: Watering or irrigating of lawn, landscape or other vegetated area with potable water using a landscape irrigation system or a watering device that is not continuously attended is limited to no more than fifteen (15) minutes watering per day per station. This subsection does not apply to landscape irrigation systems that exclusively use very low-flow drip type irrigation systems when no emitter produces more than two (2) gallons of water per hour or weather based controllers or stream rotor sprinklers that meet a seventy percent (70%) efficiency standard.

c. **No Excessive Water Flow or Runoff:** Watering or irrigating of any lawn, landscape or other vegetated area in a manner that causes or allows excessive water flow or runoff onto an adjoining property, or non-landscaped areas such as sidewalks, driveways, streets, alleys, gutters or ditches is prohibited.

d. **No Washing Down Hard or Paved Surfaces:** Washing down hard or paved surfaces, including but not limited to sidewalks, walkways, driveways, parking areas, tennis courts, patios or alleys, is prohibited except when necessary to alleviate safety or sanitary hazards, and then only by use of a hand-held bucket or similar container, a hand-held hose equipped with a positive self-closing water shut-off device, a low-volume, high-pressure cleaning

machine equipped to recycle any water used, or a low-volume high-pressure water broom. Should the use of water for wash-down have to do with an immediate fire or sanitation hazard, written permission shall have been obtained from the Fire Department, the Health Department or the Building Department.

e. **Obligation to Fix Leaks, Breaks or Malfunctions:** Excessive use, loss or escape of water through breaks, leaks or other malfunctions in the water user's plumbing or distribution system for any period of time after such escape of water should have reasonably been discovered and corrected and in no event more than seven (7) days of receiving notice from the City, is prohibited. This section also applies to all water purveyors in the City.

f. **Re-circulating Water Required for Water Fountains and Decorative Water Features**: Operating a water fountain or other decorative water feature that does not use re-circulated water is prohibited.

g. **Limits on Washing Vehicles:** Using water to wash or clean a vehicle, including but not limited to any automobile, truck, van, bus, motorcycle, boat or trailer, whether motorized or not is prohibited, except by use of a hand-held bucket or similar container or a hand-held hose equipped with a positive self-closing water shut-off nozzle or device. This subsection does not apply to any commercial car washing facility with an on-site water recycling system. Commercial vehicle washing establishments that do not have on-site water recycling for reuse systems shall meet with City staff within two (2) months of the adoption of this Ordinance to work out a satisfactory schedule for the installation of such a system or the issuance of a waiver under this Ordinance.

h. **Drinking Water Served Upon Request Only:** Eating or drinking establishments, including but not limited to restaurants, hotels, cafes, cafeterias, bars, or other public places where food or drinks are sold, served, or offered for sale, are prohibited from providing drinking water to any person unless expressly requested by that person or that person's guardian or custodian of care therefor.

i. **Commercial Lodging Establishments Must Provide Guests Option to Decline Daily Linen Services**: Hotels, motels and other commercial lodging establishments must provide customers the option of not having towels and linen laundered daily. Commercial lodging establishments must prominently display notice of this option in each bathroom using clear and easily understood English and Spanish languages and any other language commonly used by users of such establishments.

j. **No Installation of Single Pass Cooling Systems**: Installation of single pass cooling systems is prohibited in buildings requesting new water service.

k. **No Installation of Non-re-circulating Water Systems in Commercial Car Wash and Laundry Systems:** Installation of non-re-circulating water systems is prohibited in premises with new commercial conveyor car wash or new commercial laundry systems.

l. **Restaurants Required to Use Water Conserving Dish Wash Spray Valves**: Food preparation establishments, such as restaurants or cafes, are prohibited from using non-water conserving dish wash spray valves.

m. **Commercial Car Wash Systems**: Effective on January 1, 2011, all commercial car wash systems must have installed operational re-circulating water systems, or must have secured a waiver of this requirement and/or an extension of time for installation from the City.

n. Construction meters used for landscape irrigation shall not be used between 10:00 a.m. and one (1) hour before sunset.

o. Filling or refilling of private swimming pools, spas, ponds and artificial lakes is prohibited between 10:00 a.m. and one (1) hour before sunset. Swimming pools and spas shall be equipped with covers to minimize evaporation and such covers shall be used not less than five (5) days a week unless the facility is in use.

8.29.070 Level 1 Water Supply Shortage

a. A Level 1 Water Supply Shortage exists when the City determines, in its sole discretion, that due to drought or other water supply conditions, a water supply shortage or threatened shortage exists and a consumer demand reduction is necessary to make more efficient use of water and appropriately respond to existing water conditions. Upon the declaration by the City of a Level 1 Water Supply Shortage condition, the City will implement the mandatory Level 1 conservation measures identified in this section.

b. **Additional Water Conservation Measures:** In addition to the prohibited uses of water identified in Section 8.29.060, the following water conservation requirements apply during a declared Level 1 Water Supply Shortage:

   1. **Limits on Watering Days:** Watering or irrigating of lawn, landscape or other vegetated area with potable water is limited to not to exceed three (3) days per week on a schedule established and posted by the City. During the months of November through March, watering or irrigating of lawn, landscape or other vegetated area with potable water is limited to no more than one (1) day per week on a schedule established and posted by the City. This provision does not apply to landscape irrigation zones that exclusively use very low flow drip type irrigation systems when no emitter produces more than two (2) gallons of water per hour. This provision also does not apply to watering or irrigating by use of a hand-held bucket or similar container, a hand-held hose equipped with a positive self-closing water shut-off nozzle or device, or for very short periods of time for the express purpose of adjusting or repairing an irrigation system.

   2. **Obligation to Fix Leaks, Breaks or Malfunctions**: All leaks, breaks, or other malfunctions in the water user's plumbing or distribution system must be repaired within seventy-two (72) hours of receipt of written notification by the City unless other arrangements are made with the City. All leaks, breaks or malfunctions in the water purveyor's water system shall be repaired within seventy-two (72) hours of the water purveyor becoming aware thereof.

8.29.080 Level 2 Water Supply Shortage

a. A Level 2 Water Supply Shortage exists when the City determines, in its sole discretion, that due to drought or other water supply conditions, a water supply shortage or threatened shortage exists and a consumer demand reduction is necessary to make more efficient use of water and appropriately respond to existing water conditions. Upon the declaration by the City of a Level 2 Water Supply Shortage condition, the City will implement the mandatory Level 2 conservation measures identified in this section.

b. **Additional Conservation Measures:** In addition to the prohibited uses of water identified in Sections 8.29.060 and 8.29.070, the following additional water conservation requirements apply during a declared Level 2 Water Supply Shortage:

   1. **Watering Days:** Watering or irrigating of lawn, landscape or other vegetated area with potable water is limited to not to exceed two (2) days per week on a schedule established and posted by the City. During the months of November through March, watering or irrigating of lawn, landscape or other vegetated area with potable water is limited to no more than one (1) day per week on a schedule established and posted by the City. This provision does not apply to landscape irrigation zones that exclusively use very low flow drip type irrigation systems when no emitter produces more than two (2) gallons of water per hour. This provision also does not apply to watering or irrigating by use of a hand-held bucket or similar container, a hand-held hose equipped with a positive self-closing water shut-off nozzle or device, or for very short periods of time for the express purpose of adjusting or repairing an irrigation system.

   2. **Obligation to Fix Leaks, Breaks or Malfunctions**: All leaks, breaks, or other malfunctions in the water user's plumbing or distribution system must be repaired within forty-eight (48) hours of receipt of written notification by the City unless other arrangements are made with the City. All leaks, breaks or malfunctions in the water

purveyor's water system shall be repaired within 48 hours of the water purveyor becoming aware thereof.

3. **Limits on Filling Ornamental Lakes or Ponds**: Filling or re-filling of ornamental lakes or ponds is prohibited, except to the extent needed to sustain aquatic life, provided that such aquatic life are of significant value and have been actively managed within the water feature prior to declaration of a supply shortage level under this Ordinance.

4. **Limits on Washing Vehicles:** Using water to wash or clean a vehicle, including but not limited to, any automobile, truck, van, bus, motorcycle, boat or trailer, whether motorized or not, is prohibited except by use of a hand-held bucket or similar container, a hand-held hose equipped with a positive self-closing water shut-off nozzle or device, by high pressure/low volume wash systems, or at a commercial car washing facility that utilizes a re-circulating water system to capture or reuse water.

5. **Limits on Filling Residential Swimming Pools & Spas:** Re-filling of more than one (1) foot of depth in a pool or spa and initial filling of residential swimming pools or outdoor spas with potable water is prohibited.

8.29.090 Level 3 Water Supply Shortage – Emergency Condition

a. A Level 3 Water Supply Shortage condition is also referred to as an "Emergency" condition. A Level 3 condition exists when the City declares a water shortage emergency and notifies its residents and businesses that a significant reduction in consumer demand is necessary to maintain sufficient water supplies for public health and safety. Upon the declaration of a Level 3 Water Supply Shortage condition, the City will implement the mandatory Level 3 conservation measures identified in this section.

b. **Additional Conservation Measures:** In addition to the prohibited uses of water identified in Sections 8.29.060, 8.29.070, and 8.29.080, the following water conservation requirements apply during a declared Level 3 Water Supply Shortage Emergency:

1. **No Watering or Irrigating:** Watering or irrigating of lawn, landscape or other vegetated area with potable water is prohibited. This restriction does not apply to the following categories of use, unless the City has determined that recycled water is available and may be applied to the use:

   i. Maintenance of vegetation, including trees and shrubs, that are watered using a hand-held bucket or similar container, hand-held hose equipped with a positive self–closing water shut-off nozzle or device;

   ii. Maintenance of existing landscape necessary for fire protection;

   iii. Maintenance of existing landscape for soil erosion control;

   iv. Maintenance of plant materials identified to be rare or essential to the well-being of protected species;

   v. Maintenance of landscape within active public parks and playing fields, day care centers, golf course greens, and school grounds, provided that such irrigation does not exceed two (2) days per week according to the schedule established in Section 5.29.070(b)(1) and time restrictions in Section 5.29.060(a) and (b)(1);

   vi. Actively irrigated environmental mitigation projects.

2. **Obligation to Fix Leaks, Breaks or Malfunctions**: All leaks, breaks, or other malfunctions in the water user's plumbing or distribution system must be repaired within twenty-four (24) hours of notification by the City unless other arrangements are made with the City. The same time restrictions shall apply to water systems of water purveyors.

3. a. **No New Potable Water Service**: Upon declaration of a Level 3 Water Supply Shortage
Emergency condition by the City, no new potable water service shall be provided, no new temporary meters or permanent meters are to be provided, and no statements of immediate ability to serve or provide potable water service (such as, will-serve letters, certificates, or letters of availability) are to be issued, except under the following circumstances:

   1. A valid, unexpired building permit has been issued for the project; or
   2. The project is necessary to protect the public health, safety, and welfare; or
   3. The applicant provides substantial evidence of an enforceable commitment that water demands for the project will be offset prior to the provision of a new water meter(s) to the satisfaction of the City.

   This provision does not preclude the resetting or turn-on of meters to provide continuation of water service or the restoration of service that has been interrupted for a period of one year or less.

   b. **Limits on Building Permits**: The City will limit or withhold the issuance of building permits which require new or expanded water service, except to protect the public health, safety and welfare, or in cases which meet the City's adopted water conservation offset requirements.

4. **Discontinue Service**: The City, in its sole discretion, may order a water purveyor in the City to discontinue service to a water user who, in the opinion of the City, willfully violates provisions of this section.

8.29.100 Procedures for Determination / Notification of Water Supply Shortage

a. **Declaration and Notification of Water Supply Shortage:** The existence of Level 1, Level 2 or Level 3 Water Supply Shortage conditions may be declared by resolution of the City adopted at a regular or special public meeting held in accordance with State law. The mandatory conservation requirements applicable to Level 1, Level 2 or Level 3 conditions will take effect on the tenth (10th) day after the date the water supply shortage level is declared. Within five (5) days following the declaration of the shortage level, the City and other water purveyors must publish a copy of the resolution in a newspaper used for publication of official notices. If the City activates a water allocation process, it must provide notice of the activation by including it in the regular billing statement or by any other mailing to the address to which the City or other water purveyors customarily mail the billing statement for fees or charges for ongoing water service. A water allocation will be effective on the fifth (5th) day following the date of mailing or at such later date as specified in the notice.

8.29.110 Hardship Waiver

a. **Undue and Disproportionate Hardship:** If, due to unique circumstances, a specific requirement of this chapter would result in undue hardship to a person using water or to property upon which water is used, that is disproportionate to the impacts to water users generally or to similar property or classes of water users, then the person may apply to the City for a waiver to the requirements as provided in this section.

b. **Written Finding:** The waiver may be granted or conditionally granted by the City only upon a written finding by the City of the existence of facts demonstrating an undue hardship to a person using water or to property upon which water is used, that is disproportionate to the impacts to water users generally or to similar property or classes of water use due to specific and unique circumstances of the user or the user's property.

   1. **Application**: Application for a waiver must be on a form prescribed by the City and accompanied by a non-refundable processing fee in an amount set by City Council resolution.

2. **Supporting Documentation**: The application must be accompanied by photographs, maps, drawings, and other pertinent information, including a written statement of the applicant as to the reasons for the application.

3. **Required Findings for Waiver:** An application for a waiver will be denied unless the City finds, based on the information provided in the application, supporting documents, or such additional information as may be requested, and on water use information for the property as shown by the records of the applicant or its Agent, all of the following:

   i. That the waiver does not constitute a grant of special privilege inconsistent with the limitations upon other properties and businesses;

   ii. That because of special circumstances applicable to the property or its use, the strict application of this chapter would have a disproportionate impact on the property or use that exceeds the impacts to properties and businesses generally;

   iii. That the authorizing of such waiver will not be of substantial detriment to adjacent properties, and will not materially affect the ability of the City to effectuate the purpose of this chapter and will not be detrimental to the public interest;

   iv. That the condition or situation of the subject property or the intended use of the property for which the waiver is sought is not common, recurrent or general in nature; and

   v. That the water user has demonstrated that he or she, prior to or after adoption of this Ordinance, has taken effective measures for purposes of water conservation.

4. **Approval Authority**: The City Engineer must act upon any completed application no later than ten (10) days after submittal and may approve, conditionally approve, or deny the waiver. The applicant requesting the waiver must be promptly notified in writing of any action taken. Unless specified otherwise at the time a waiver is approved, the waiver will apply to the subject property during the period of the mandatory water supply shortage condition. The decision of the City Engineer will be final, except that the applicant may file a written appeal to the City Council. The City Council, after due process, may grant, deny or grant with conditions, the appeal.

8.29.120 Penalties and Violations

a. **Misdemeanor:** Any violation of this chapter may be prosecuted by the City as a misdemeanor punishable by imprisonment in the County Jail for not more than thirty (30) days, or by a fine not exceeding one thousand dollars ($1,000), or by both.

b. **Penalties:** Penalties for failure to comply with any provisions of the ordinance are as follows:

   1. **First Violation:** The City will issue a written warning and deliver a copy of this ordinance by United States Postal Service first class (USPS) mail.

   2. **Second Violation:** A second violation within the following twelve (12) calendar months of the first violation is punishable by a fine not to exceed one hundred dollars ($100.00).

   3. **Third Violation:** A third violation within the following twelve (12) calendar months of the first violation is punishable by a fine not to exceed two hundred and fifty dollars ($250.00).

   4. **Fourth and Subsequent Violations:** A fourth violation in the following twelve (12) calendar months of the first violation and any subsequent violation thereof is punishable by a fine not to exceed five hundred dollars ($500.00).

      i. **Water Flow Restrictor:** In addition to any fines, the City may require the applicable water purveyor to install a water flow restrictor device of approximately one gallon per minute capacity for service pipe up to one and one-half inch size and

comparatively sized restrictors for larger services after issuance by the City of a written notice of intent to install a flow restrictor for a minimum of forty-eight (48) hours.

5. **Discontinuing Service:** In addition to any fines and the installation of a water flow restrictor, the City may require the applicable water purveyor to disconnect a customer's water service for willful violations of mandatory restrictions in this chapter.

c. **Cost of Flow Restrictor and Disconnecting Service:** A person or entity that violates this ordinance is responsible for payment of the water purveyor's charges for installing and/or removing any flow restricting device and for disconnecting and/or reconnecting service per the water purveyor's schedule of charges then in effect. The charge for installing and/or removing any flow restricting device must be paid to the water purveyor before the device is removed. Nonpayment will be subject to the same remedies as nonpayment of a regular water bill.

d. **Separate Offenses**: Each day that a violation of this ordinance occurs is a separate offense.

e. **Notice and Hearing**:

1. The City will issue a Notice of Violation by USPS first class mail or personal delivery at least ten (10) days before taking enforcement action. Such notice must describe the violation and the date by which corrective action must be taken. A water service user may appeal the Notice of Violation by filing a written notice of appeal with the City Clerk no later than the close of business on the day before the date scheduled for enforcement action. Any Notice of Violation not timely appealed will be final. Upon receipt of a timely appeal, a hearing on the appeal will be scheduled, and the City will mail by USPS first class service written notice of the hearing date to the water service user and the serving water purveyor at least ten (10) days before the date of the hearing.

2. Pending receipt of a written appeal or pending a hearing pursuant to an appeal, the City may take appropriate steps to prevent the unauthorized use of water as appropriate to the nature and extent of the violations and the current declared Water Level condition.

8.29.130 Severability

If any section, subsection, sentence, clause or phrase in this Chapter is for any reason held invalid, the validity of the remainder of the Chapter will not be affected. The City Council hereby declares it would have passed this Chapter and each section, subsection, sentence, clause or phrase thereof, irrespective of the fact that one or more sections, subsections, sentences, clauses, or phrases or is later declared invalid.

SECTION 2. Chapter 8.28 of the Montebello Municipal Code is hereby repealed in its entirety.

SECTION 3. The City Council hereby declares that it would have passed this ordinance sentence by sentence, paragraph by paragraph, and section by section, and does hereby declare that the provisions of this ordinance are severable and, if for any reason any sentence, paragraph, or section of this ordinance shall be held invalid, such decision will not affect the validity of the remaining parts of this ordinance.

SECTION 4. The City Clerk shall certify to the adoption of this Ordinance. The City Council hereby finds and determines that there are no newspapers of general circulation both published and circulated within the City and, in compliance with Section 36933 of the Government Code directs the City Clerk to cause said Ordinance, within fifteen (15) days after its passage, to be posted in at least five (5) public places within the City. This Ordinance shall take effect thirty (30) days after its adoption.

ADOPTED AND APPROVED this 22nd day of July, 2009.

Rosemarie Vasquez, Mayor

ATTEST:

APPROVED AS TO FORM:

Robert J. King, City Clerk

Arnold M. Alvarez-Glasman, City Attorney

8.29.020 Findings.

a. A reliable minimum supply of potable water is essential to the public health, safety and welfare of the people and economy of the Southern California region and of the City of Montebello.

b. Southern California is a semi-arid region and is largely dependent upon imported water supplies. A growing population, climate change, environmental concerns, and other factors in other parts of the State and western United States, make the region highly susceptible to water supply reliability issues.

c. Careful water management that includes active water conservation measures not only in times of drought, but at all times, is essential to ensure a reliable minimum supply of water to meet current and future water supply needs.

d. Article X, Section 2 of the California Constitution declares that the general welfare requires that water resources be put to beneficial use, waste or unreasonable use or unreasonable method of use of water are to be prevented, and conservation of water is to be fully exercised with a view to the reasonable and beneficial use of available water supplies.

e. Article XI, Section 7 of the California Constitution declares that a city or county may make and enforce within its limits all local, police, sanitary, and other ordinances and regulations not in conflict with general laws.

f. California Water Code Section 375 authorizes water suppliers to adopt and enforce a comprehensive water conservation program to reduce water consumption and conserve supplies.

g. The adoption and enforcement of a water conservation and supply shortage program is necessary to manage the City of Montebello's potable water supply in the short and long-term and to avoid or minimize the effects of drought and shortage within the City of Montebello. Such a program is essential to ensure a reliable and sustainable minimum supply of water for the public health, safety and welfare.

8.29.030 Declaration of Purpose and Intent.

a. The purpose of this chapter is to replace Chapter 8.28 and to establish a water conservation and supply shortage program that will reduce water consumption within the City of Montebello through conservation, enable effective water supply planning, assure reasonable and beneficial use of water, prevent waste of water, and maximize the efficient use of water within the City of Montebello to avoid and minimize the effect and hardship of water shortage to the greatest extent possible.

b. This Chapter establishes permanent water conservation standards intended to alter behavior related to water use efficiency at all times and further establishes three levels of water supply shortage response actions to be implemented during times of declared water shortage or declared water shortage emergency, with increasing restrictions on water use in response to worsening drought or emergency conditions and decreasing supplies.

8.29.040 Definitions.

a. The following words and phrases whenever used in this chapter have the meaning defined in this section:

    1. "City" means City of Montebello and all of its Departments.

    2. "City Council" means the City Council of the City of Montebello.

    3. "Water Purveyor" means the City and any other provider of potable water service in the City of Montebello.

4. "MWD" means the Metropolitan Water District of Southern California.

5. "Section" means a Section of this Chapter unless some other City Ordinance is specifically mentioned.

6. "Fire Department" means the Fire Department of the City of Montebello which serves the City.

7. "Health Department" means the County of Los Angeles Health Services Department, which serves the City and the State of California Department of Health Services, which oversees by permit the operations of potable water systems in the City.

8. "Building Department" means the Building Official and personnel of the Building Department of the City, which serve the City.

9. "Person" means any natural person or persons, corporation, public or private entity, governmental agency or institution, including all agencies and departments of the City, or any other user of water provided within the City.

10. "Landscape irrigation system" means an irrigation system with pipes, hoses, spray heads, or sprinkling devices that are operated by hand or through an automated system.

11. "Large landscape areas" means a lawn, landscape, or other vegetated area, or combination thereof, equal to more than 3,000 square feet of irrigable land.

12. "Single pass cooling systems" means equipment where water is circulated only once to cool equipment before being disposed.

13. "Potable water" means water which is suitable for drinking.

14. "Recycled water" means the reclamation and reuse of non-potable water for beneficial use as defined in Title 22 of the California Code of Regulations.

15. "Billing unit" means the unit of water used to apply water rates for purposes of calculating water charges for a person's water usage.

16. "Station" means a group of irrigation sprinkler spray heads which are controlled through a valve that opens and closes based on a preset time period of an automated time clock or hand operation of a valve.

17. "Water User" means the owner of a property or the tenant of the property which uses potable water provided by a potable water purveyor in the City. A user includes a person or contractor retained by the property owner or tenant to provide landscape maintenance/irrigation services to the property.

18. "Engineering Department/City Engineer" means an established Department of City and a City designated official.

19. "Hot Line" means a telephone, facsimile and/or electronic mail service that is to be installed in the Engineering Department and maintained by the Engineering Department under the direction of the City Engineer for citizens to report apparent violations of this City Ordinance. All information received on the Hot Line shall be reviewed by the City Engineer or his/her designee. Information may be placed on the Hot Line by citizens anonymously.

8.29.050 Application

a. The provisions of this Chapter apply to any person using any potable water provided by a potable water purveyor in the City.

b. The provisions of this Chapter do not apply to uses of water necessary to protect public health and safety or for essential government services, such as police, fire and other similar emergency services.

c. The provisions of this Chapter do not apply to the use of recycled water, with the exception of Section 8.29.060(a).

d. The provisions of this Chapter do not apply to the use of water by commercial nurseries and commercial growers to sustain plants, trees, shrubs, crops or other vegetation intended for commercial sale.

e. This Chapter is intended solely to further the conservation of water. It is not intended to implement any provision of federal, State, or local statutes, ordinances, or regulations relating to protection of water quality or control of drainage or runoff from various sources including rain storms. Refer to the City Engineer or to the State of California Regional Water Quality Control Board for information on any stormwater regulations and stormwater management plans.

f. The City Building Department, in reviewing applications for building permits for development or redevelopment of property, may require the developer to incorporate in his or her development the use of recycled water at such time as it becomes available to the area of the City in lieu of the use of potable water for construction water and/or potable water for the permanent development. The Building Department and the City Planning Department may require the use of water use efficient equipment and designs for development or redevelopment properties.

8.29.060 Permanent Water Conservation Requirements – Prohibition Against Waste

The following water conservation requirements are effective at all times and are permanent. Violations of this section will be considered waste and an unreasonable use of water.

a. **Limits on Watering Hours**: Watering or irrigating of lawn, landscape or other vegetated area with potable water is prohibited between the hours of 10:00 a.m. and one (1) hour before sunset Pacific Standard Time on any day, except by use of a hand-held bucket or similar container, a hand-held hose equipped with a positive self-closing water shut-off nozzle or device, or for very short periods of time for the express purpose of adjusting or repairing an irrigation system. Lawns or other irrigated areas shall not be watered more frequently than every other day. Odd-numbered street-addressed properties may water on odd-numbered dates. Even-numbered street-addressed properties may only do so on even-numbered dates. All irrigated areas may be watered on the 29th day of the month of February every fourth (4th) year or the 31st day of the month having 31 days. The provisions of this subsection shall not apply to restrict watering of newly seeded or reseeded lawns once a year, nor to prohibit drip irrigation systems.

b. **Limit on Watering Duration**: Watering or irrigating of lawn, landscape or other vegetated area with potable water using a landscape irrigation system or a watering device that is not continuously attended is limited to no more than fifteen (15) minutes watering per day per station. This subsection does not apply to landscape irrigation systems that exclusively use very low-flow drip type irrigation systems when no emitter produces more than two (2) gallons of water per hour or weather based controllers or stream rotor sprinklers that meet a seventy percent (70%) efficiency standard.

c. **No Excessive Water Flow or Runoff:** Watering or irrigating of any lawn, landscape or other vegetated area in a manner that causes or allows excessive water flow or runoff onto an adjoining property, or non-landscaped areas such as sidewalks, driveways, streets, alleys, gutters or ditches is prohibited.

d. **No Washing Down Hard or Paved Surfaces:** Washing down hard or paved surfaces, including but not limited to sidewalks, walkways, driveways, parking areas, tennis courts, patios or alleys, is prohibited except when necessary to alleviate safety or sanitary hazards, and then only by use of a hand-held bucket or similar container, a hand-held hose equipped with a positive self-closing water shut-off device, a low-volume, high-pressure cleaning

machine equipped to recycle any water used, or a low-volume high-pressure water broom. Should the use of water for wash-down have to do with an immediate fire or sanitation hazard, written permission shall have been obtained from the Fire Department, the Health Department or the Building Department.

e. **Obligation to Fix Leaks, Breaks or Malfunctions:** Excessive use, loss or escape of water through breaks, leaks or other malfunctions in the water user's plumbing or distribution system for any period of time after such escape of water should have reasonably been discovered and corrected and in no event more than seven (7) days of receiving notice from the City, is prohibited. This section also applies to all water purveyors in the City.

f. **Re-circulating Water Required for Water Fountains and Decorative Water Features**: Operating a water fountain or other decorative water feature that does not use re-circulated water is prohibited.

g. **Limits on Washing Vehicles:** Using water to wash or clean a vehicle, including but not limited to any automobile, truck, van, bus, motorcycle, boat or trailer, whether motorized or not is prohibited, except by use of a hand-held bucket or similar container or a hand-held hose equipped with a positive self-closing water shut-off nozzle or device. This subsection does not apply to any commercial car washing facility with an on-site water recycling system. Commercial vehicle washing establishments that do not have on-site water recycling for reuse systems shall meet with City staff within two (2) months of the adoption of this Ordinance to work out a satisfactory schedule for the installation of such a system or the issuance of a waiver under this Ordinance.

h. **Drinking Water Served Upon Request Only:** Eating or drinking establishments, including but not limited to restaurants, hotels, cafes, cafeterias, bars, or other public places where food or drinks are sold, served, or offered for sale, are prohibited from providing drinking water to any person unless expressly requested by that person or that person's guardian or custodian of care therefor.

i. **Commercial Lodging Establishments Must Provide Guests Option to Decline Daily Linen Services**: Hotels, motels and other commercial lodging establishments must provide customers the option of not having towels and linen laundered daily. Commercial lodging establishments must prominently display notice of this option in each bathroom using clear and easily understood English and Spanish languages and any other language commonly used by users of such establishments.

j. **No Installation of Single Pass Cooling Systems**: Installation of single pass cooling systems is prohibited in buildings requesting new water service.

k. **No Installation of Non-re-circulating Water Systems in Commercial Car Wash and Laundry Systems:** Installation of non-re-circulating water systems is prohibited in premises with new commercial conveyor car wash or new commercial laundry systems.

l. **Restaurants Required to Use Water Conserving Dish Wash Spray Valves**: Food preparation establishments, such as restaurants or cafes, are prohibited from using non-water conserving dish wash spray valves.

m. **Commercial Car Wash Systems**: Effective on January 1, 2011, all commercial car wash systems must have installed operational re-circulating water systems, or must have secured a waiver of this requirement and/or an extension of time for installation from the City.

n. Construction meters used for landscape irrigation shall not be used between 10:00 a.m. and one (1) hour before sunset.

o. Filling or refilling of private swimming pools, spas, ponds and artificial lakes is prohibited between 10:00 a.m. and one (1) hour before sunset. Swimming pools and spas shall be equipped with covers to minimize evaporation and such covers shall be used not less than five (5) days a week unless the facility is in use.

8.29.070 Level 1 Water Supply Shortage

a. A Level 1 Water Supply Shortage exists when the City determines, in its sole discretion, that due to drought or other water supply conditions, a water supply shortage or threatened shortage exists and a consumer demand reduction is necessary to make more efficient use of water and appropriately respond to existing water conditions. Upon the declaration by the City of a Level 1 Water Supply Shortage condition, the City will implement the mandatory Level 1 conservation measures identified in this section.

b. **Additional Water Conservation Measures:** In addition to the prohibited uses of water identified in Section 8.29.060, the following water conservation requirements apply during a declared Level 1 Water Supply Shortage:

   1. **Limits on Watering Days:** Watering or irrigating of lawn, landscape or other vegetated area with potable water is limited to not to exceed three (3) days per week on a schedule established and posted by the City. During the months of November through March, watering or irrigating of lawn, landscape or other vegetated area with potable water is limited to no more than one (1) day per week on a schedule established and posted by the City. This provision does not apply to landscape irrigation zones that exclusively use very low flow drip type irrigation systems when no emitter produces more than two (2) gallons of water per hour. This provision also does not apply to watering or irrigating by use of a hand-held bucket or similar container, a hand-held hose equipped with a positive self-closing water shut-off nozzle or device, or for very short periods of time for the express purpose of adjusting or repairing an irrigation system.

   2. **Obligation to Fix Leaks, Breaks or Malfunctions**: All leaks, breaks, or other malfunctions in the water user's plumbing or distribution system must be repaired within seventy-two (72) hours of receipt of written notification by the City unless other arrangements are made with the City. All leaks, breaks or malfunctions in the water purveyor's water system shall be repaired within seventy-two (72) hours of the water purveyor becoming aware thereof.

8.29.080 Level 2 Water Supply Shortage

a. A Level 2 Water Supply Shortage exists when the City determines, in its sole discretion, that due to drought or other water supply conditions, a water supply shortage or threatened shortage exists and a consumer demand reduction is necessary to make more efficient use of water and appropriately respond to existing water conditions. Upon the declaration by the City of a Level 2 Water Supply Shortage condition, the City will implement the mandatory Level 2 conservation measures identified in this section.

b. **Additional Conservation Measures:** In addition to the prohibited uses of water identified in Sections 8.29.060 and 8.29.070, the following additional water conservation requirements apply during a declared Level 2 Water Supply Shortage:

   1. **Watering Days:** Watering or irrigating of lawn, landscape or other vegetated area with potable water is limited to not to exceed two (2) days per week on a schedule established and posted by the City. During the months of November through March, watering or irrigating of lawn, landscape or other vegetated area with potable water is limited to no more than one (1) day per week on a schedule established and posted by the City. This provision does not apply to landscape irrigation zones that exclusively use very low flow drip type irrigation systems when no emitter produces more than two (2) gallons of water per hour. This provision also does not apply to watering or irrigating by use of a hand-held bucket or similar container, a hand-held hose equipped with a positive self-closing water shut-off nozzle or device, or for very short periods of time for the express purpose of adjusting or repairing an irrigation system.

   2. **Obligation to Fix Leaks, Breaks or Malfunctions**: All leaks, breaks, or other malfunctions in the water user's plumbing or distribution system must be repaired within forty-eight (48) hours of receipt of written notification by the City unless other arrangements are made with the City. All leaks, breaks or malfunctions in the water

purveyor's water system shall be repaired within 48 hours of the water purveyor becoming aware thereof.

3. **Limits on Filling Ornamental Lakes or Ponds**: Filling or re-filling of ornamental lakes or ponds is prohibited, except to the extent needed to sustain aquatic life, provided that such aquatic life are of significant value and have been actively managed within the water feature prior to declaration of a supply shortage level under this Ordinance.

4. **Limits on Washing Vehicles:** Using water to wash or clean a vehicle, including but not limited to, any automobile, truck, van, bus, motorcycle, boat or trailer, whether motorized or not, is prohibited except by use of a hand-held bucket or similar container, a hand-held hose equipped with a positive self-closing water shut-off nozzle or device, by high pressure/low volume wash systems, or at a commercial car washing facility that utilizes a re-circulating water system to capture or reuse water.

5. **Limits on Filling Residential Swimming Pools & Spas:** Re-filling of more than one (1) foot of depth in a pool or spa and initial filling of residential swimming pools or outdoor spas with potable water is prohibited.

8.29.090 Level 3 Water Supply Shortage – Emergency Condition

a. A Level 3 Water Supply Shortage condition is also referred to as an "Emergency" condition. A Level 3 condition exists when the City declares a water shortage emergency and notifies its residents and businesses that a significant reduction in consumer demand is necessary to maintain sufficient water supplies for public health and safety. Upon the declaration of a Level 3 Water Supply Shortage condition, the City will implement the mandatory Level 3 conservation measures identified in this section.

b. **Additional Conservation Measures:** In addition to the prohibited uses of water identified in Sections 8.29.060, 8.29.070, and 8.29.080, the following water conservation requirements apply during a declared Level 3 Water Supply Shortage Emergency:

1. **No Watering or Irrigating:** Watering or irrigating of lawn, landscape or other vegetated area with potable water is prohibited. This restriction does not apply to the following categories of use, unless the City has determined that recycled water is available and may be applied to the use:

   i. Maintenance of vegetation, including trees and shrubs, that are watered using a hand-held bucket or similar container, hand-held hose equipped with a positive self–closing water shut-off nozzle or device;

   ii. Maintenance of existing landscape necessary for fire protection;

   iii. Maintenance of existing landscape for soil erosion control;

   iv. Maintenance of plant materials identified to be rare or essential to the well-being of protected species;

   v. Maintenance of landscape within active public parks and playing fields, day care centers, golf course greens, and school grounds, provided that such irrigation does not exceed two (2) days per week according to the schedule established in Section 5.29.070(b)(1) and time restrictions in Section 5.29.060(a) and (b)(1);

   vi. Actively irrigated environmental mitigation projects.

2. **Obligation to Fix Leaks, Breaks or Malfunctions**: All leaks, breaks, or other malfunctions in the water user's plumbing or distribution system must be repaired within twenty-four (24) hours of notification by the City unless other arrangements are made with the City. The same time restrictions shall apply to water systems of water purveyors.

3. a. **No New Potable Water Service**: Upon declaration of a Level 3 Water Supply Shortage
Emergency condition by the City, no new potable water service shall be provided, no new temporary meters or permanent meters are to be provided, and no statements of immediate ability to serve or provide potable water service (such as, will-serve letters, certificates, or letters of availability) are to be issued, except under the following circumstances:

   1. A valid, unexpired building permit has been issued for the project; or
   2. The project is necessary to protect the public health, safety, and welfare; or
   3. The applicant provides substantial evidence of an enforceable commitment that water demands for the project will be offset prior to the provision of a new water meter(s) to the satisfaction of the City.

   This provision does not preclude the resetting or turn-on of meters to provide continuation of water service or the restoration of service that has been interrupted for a period of one year or less.

   b. **Limits on Building Permits**: The City will limit or withhold the issuance of building permits which require new or expanded water service, except to protect the public health, safety and welfare, or in cases which meet the City's adopted water conservation offset requirements.

4. **Discontinue Service**: The City, in its sole discretion, may order a water purveyor in the City to discontinue service to a water user who, in the opinion of the City, willfully violates provisions of this section.

8.29.100 Procedures for Determination / Notification of Water Supply Shortage

a. **Declaration and Notification of Water Supply Shortage:** The existence of Level 1, Level 2 or Level 3 Water Supply Shortage conditions may be declared by resolution of the City adopted at a regular or special public meeting held in accordance with State law. The mandatory conservation requirements applicable to Level 1, Level 2 or Level 3 conditions will take effect on the tenth (10th) day after the date the water supply shortage level is declared. Within five (5) days following the declaration of the shortage level, the City and other water purveyors must publish a copy of the resolution in a newspaper used for publication of official notices. If the City activates a water allocation process, it must provide notice of the activation by including it in the regular billing statement or by any other mailing to the address to which the City or other water purveyors customarily mail the billing statement for fees or charges for ongoing water service. A water allocation will be effective on the fifth (5th) day following the date of mailing or at such later date as specified in the notice.

8.29.110 Hardship Waiver

a. **Undue and Disproportionate Hardship:** If, due to unique circumstances, a specific requirement of this chapter would result in undue hardship to a person using water or to property upon which water is used, that is disproportionate to the impacts to water users generally or to similar property or classes of water users, then the person may apply to the City for a waiver to the requirements as provided in this section.

b. **Written Finding:** The waiver may be granted or conditionally granted by the City only upon a written finding by the City of the existence of facts demonstrating an undue hardship to a person using water or to property upon which water is used, that is disproportionate to the impacts to water users generally or to similar property or classes of water use due to specific and unique circumstances of the user or the user's property.

   1. **Application**: Application for a waiver must be on a form prescribed by the City and accompanied by a non-refundable processing fee in an amount set by City Council resolution.

2. **Supporting Documentation**: The application must be accompanied by photographs, maps, drawings, and other pertinent information, including a written statement of the applicant as to the reasons for the application.

3. **Required Findings for Waiver:** An application for a waiver will be denied unless the City finds, based on the information provided in the application, supporting documents, or such additional information as may be requested, and on water use information for the property as shown by the records of the applicant or its Agent, all of the following:

   i. That the waiver does not constitute a grant of special privilege inconsistent with the limitations upon other properties and businesses;

   ii. That because of special circumstances applicable to the property or its use, the strict application of this chapter would have a disproportionate impact on the property or use that exceeds the impacts to properties and businesses generally;

   iii. That the authorizing of such waiver will not be of substantial detriment to adjacent properties, and will not materially affect the ability of the City to effectuate the purpose of this chapter and will not be detrimental to the public interest;

   iv. That the condition or situation of the subject property or the intended use of the property for which the waiver is sought is not common, recurrent or general in nature; and

   v. That the water user has demonstrated that he or she, prior to or after adoption of this Ordinance, has taken effective measures for purposes of water conservation.

4. **Approval Authority**: The City Engineer must act upon any completed application no later than ten (10) days after submittal and may approve, conditionally approve, or deny the waiver. The applicant requesting the waiver must be promptly notified in writing of any action taken. Unless specified otherwise at the time a waiver is approved, the waiver will apply to the subject property during the period of the mandatory water supply shortage condition. The decision of the City Engineer will be final, except that the applicant may file a written appeal to the City Council. The City Council, after due process, may grant, deny or grant with conditions, the appeal.

8.29.120 Penalties and Violations

a. **Misdemeanor:** Any violation of this chapter may be prosecuted by the City as a misdemeanor punishable by imprisonment in the County Jail for not more than thirty (30) days, or by a fine not exceeding one thousand dollars ($1,000), or by both.

b. **Penalties:** Penalties for failure to comply with any provisions of the ordinance are as follows:

   1. **First Violation:** The City will issue a written warning and deliver a copy of this ordinance by United States Postal Service first class (USPS) mail.

   2. **Second Violation:** A second violation within the following twelve (12) calendar months of the first violation is punishable by a fine not to exceed one hundred dollars ($100.00).

   3. **Third Violation:** A third violation within the following twelve (12) calendar months of the first violation is punishable by a fine not to exceed two hundred and fifty dollars ($250.00).

   4. **Fourth and Subsequent Violations:** A fourth violation in the following twelve (12) calendar months of the first violation and any subsequent violation thereof is punishable by a fine not to exceed five hundred dollars ($500.00).

      i. **Water Flow Restrictor:** In addition to any fines, the City may require the applicable water purveyor to install a water flow restrictor device of approximately one gallon per minute capacity for service pipe up to one and one-half inch size and

comparatively sized restrictors for larger services after issuance by the City of a written notice of intent to install a flow restrictor for a minimum of forty-eight (48) hours.

5. **Discontinuing Service:** In addition to any fines and the installation of a water flow restrictor, the City may require the applicable water purveyor to disconnect a customer's water service for willful violations of mandatory restrictions in this chapter.

c. **Cost of Flow Restrictor and Disconnecting Service:** A person or entity that violates this ordinance is responsible for payment of the water purveyor's charges for installing and/or removing any flow restricting device and for disconnecting and/or reconnecting service per the water purveyor's schedule of charges then in effect. The charge for installing and/or removing any flow restricting device must be paid to the water purveyor before the device is removed. Nonpayment will be subject to the same remedies as nonpayment of a regular water bill.

d. **Separate Offenses**: Each day that a violation of this ordinance occurs is a separate offense.

e. **Notice and Hearing**:

1. The City will issue a Notice of Violation by USPS first class mail or personal delivery at least ten (10) days before taking enforcement action. Such notice must describe the violation and the date by which corrective action must be taken. A water service user may appeal the Notice of Violation by filing a written notice of appeal with the City Clerk no later than the close of business on the day before the date scheduled for enforcement action. Any Notice of Violation not timely appealed will be final. Upon receipt of a timely appeal, a hearing on the appeal will be scheduled, and the City will mail by USPS first class service written notice of the hearing date to the water service user and the serving water purveyor at least ten (10) days before the date of the hearing.

2. Pending receipt of a written appeal or pending a hearing pursuant to an appeal, the City may take appropriate steps to prevent the unauthorized use of water as appropriate to the nature and extent of the violations and the current declared Water Level condition.

8.29.130 Severability

If any section, subsection, sentence, clause or phrase in this Chapter is for any reason held invalid, the validity of the remainder of the Chapter will not be affected. The City Council hereby declares it would have passed this Chapter and each section, subsection, sentence, clause or phrase thereof, irrespective of the fact that one or more sections, subsections, sentences, clauses, or phrases or is later declared invalid.

SECTION 2. Chapter 8.28 of the Montebello Municipal Code is hereby repealed in its entirety.

SECTION 3. The City Council hereby declares that it would have passed this ordinance sentence by sentence, paragraph by paragraph, and section by section, and does hereby declare that the provisions of this ordinance are severable and, if for any reason any sentence, paragraph, or section of this ordinance shall be held invalid, such decision will not affect the validity of the remaining parts of this ordinance.

SECTION 4. The City Clerk shall certify to the adoption of this Ordinance. The City Council hereby finds and determines that there are no newspapers of general circulation both published and circulated within the City and, in compliance with Section 36933 of the Government Code directs the City Clerk to cause said Ordinance, within fifteen (15) days after its passage, to be posted in at least five (5) public places within the City. This Ordinance shall take effect thirty (30) days after its adoption.

ADOPTED AND APPROVED this 22nd day of July, 2009.

Rosemarie Vasquez, Mayor

ATTEST:

APPROVED AS TO FORM:

Robert J. King, City Clerk

Arnold M. Alvarez-Glasman, City Attorney

Appendix F(a)

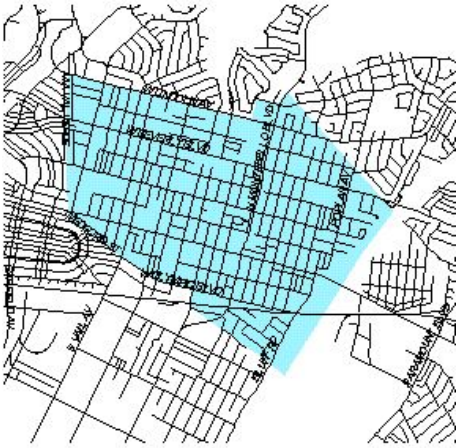
2010 Water Quality Plan

1 of 2

MONTEBELLO LAND AND WATER COMPANY
2010 ANNUAL WATER QUALITY REPORT

Since 1991, California water utilities have been providing information on water served to its consumers. This report is a snapshot of the tap water quality that we provided last year. Included are details about where your water comes from, how it is tested, what is in it, and how it compares with state and federal limits. We strive to keep you informed about the quality of your water, and to provide a reliable and economic supply that meets all regulatory requirements.

Where Does My Tap Water Come From?



Your tap water comes from local, deep groundwater wells that supply our service area shown on the adjacent map. The quality of groundwater delivered to your home is presented in this report.

How is My Drinking Water Tested?

Your drinking water is tested regularly for unsafe levels of chemicals, radioactivity and bacteria at the source and in the distribution system. We test weekly, monthly, quarterly, annually or less often depending on the substance. State and federal laws allow us to test some substances less than once per year because their levels do not change frequently. All water quality tests are conducted by specially trained technicians in state-certified laboratories.

What Are Drinking Water Standards?

The U.S Environmental Protection Agency (USEPA) limits the amount of certain substances allowed in tap water. In California, the State Department of Public Health (Department) regulates tap water quality by enforcing limits that are at least as stringent as the USEPA's. Historically, California limits are more stringent than the Federal ones.

There are two types of these limits, known as standards. Primary standards protect you from substances that could potentially affect your health. Secondary standards regulate substances that affect the aesthetic qualities of water. Regulations set a Maximum Contaminant Level (MCL) for each of the primary and secondary standards. The MCL is the highest level of a substance that is allowed in your drinking water.

Public Health Goals (PHGs) are set by the California Environmental Protection Agency. PHGs provide more information on the quality of drinking water to customers, and are similar to their federal counterparts, Maximum Contaminant Level Goals (MCLGs). PHGs and MCLGs are advisory levels that are nonenforceable. Both PHGs and MCLGs are concentrations of a substance below which there are no known or expected health risks.

How Do I Read the Water Quality Table?

Although we test for over 100 substances, regulations require us to report only those found in your water. The first column of the water quality table lists substances detected in your water. The next columns list the average concentration and range of concentrations found in your drinking water. Following are columns that list the MCL and PHG or MCLG, if appropriate. The last column describes the likely sources of these substances in drinking water.

To review the quality of your drinking water, compare the highest concentration and the MCL. Check for substances greater than the MCL. Exceedence of a primary MCL does not usually constitute an immediate health threat. Rather, it requires testing the source water more frequently for a short duration. If test results show that the water continues to exceed the MCL, the water must be treated to remove the substance, or the source must be removed from service.

Why Do I See So Much Coverage in the News About the Quality Of Tap Water?

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

- Microbial contaminants, including viruses and bacteria, that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife;
- Inorganic contaminants, such as salts and metals, that can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming;
- Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses;
- Organic chemical contaminants, including synthetic and volatile organic chemicals, that are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, agricultural application, and septic systems;
- Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, the USEPA and the Department prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. Department regulations also establish limits for contaminants in bottled water that must provide the same protection for public health.

All drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the USEPA's Safe Drinking Water Hotline (1-800-426-4791). You can also get more information on tap water by logging on to these helpful web sites:

- www.epa.gov/safewater (USEPA's web site)
- www.cdph.ca.gov/certlic/drinkingwater (Department web site)

Should I Take Additional Precautions?

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The USEPA/Centers for Disease Control guidelines on appropriate means to lessen the risk of infection of *Cryptosporidium* and other microbial contaminants are available from the USEPA's Safe Drinking Water Hotline (1-800-426-4791).

An Explanation of Lead in Tap Water

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. Montebello Land and Water Company is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at http://www.epa.gov/safewater/lead.

Source Water Assessment

The Montebello Land and Water Company conducted an assessment of its groundwater supplies in 2003. Groundwater supplies are considered most vulnerable to water supply wells, historic railroad right-of-ways, and railroads, and may be vulnerable to landfills/dumps, automobile gas stations, dry cleaners, sewer collection systems, and fleet/truck/bus terminals. A copy of the approved assessment may be obtained by contacting Kenneth Bradbury at (323) 722-8654.

How Can I Participate in Decisions On Water Issues That Affect Me?

The public is welcome to attend the annual stockholders meeting on the second Tuesday in January at 344 E. Madison Ave.

How Do I Contact My Water Agency If I Have Any Questions About Water Quality?

If you have specific questions about your tap water quality, please contact Kenneth Bradbury at (323) 722-8654.

Visit us at www.mtblw.com

MONTEBELLO LAND AND WATER COMPANY
2010 ANNUAL WATER QUALITY REPORT

Results are from the most recent testing performed in accordance with state and federal drinking water regulations

PRIMARY STANDARDS TESTED IN GROUNDWATER-MANDATED FOR PUBLIC HEALTH

ORGANIC CHEMICALS (µg/l) Tested annually	GROUNDWATER AVERAGE	GROUNDWATER RANGE	PRIMARY MCL	PHG or (MCLG) (b)	MAJOR SOURCES IN DRINKING WATER
None detected in 2010	(a)	(a)	Various	Various	Industrial and agricultural discharges

INORGANICS Tested from 2008 to 2010, except nitrate which is tested annually					
Arsenic (µg/l)	<2 (c)	ND - 2.0	10	0.004	Erosion of natural deposits
Barium (mg/l)	<0.1	ND - 0.12	1	2	Erosion of natural deposits
Fluoride (mg/l)	0.34	0.27 - 0.40	2.0	1	Erosion of natural deposits
Nitrate (mg/l as NO3)	2.7	ND - 4.7	45	45	Runoff and leaching from fertilizer use/septic tanks

RADIOLOGICAL - (pCi/l) Tested from 2005 - 2010					
Gross Alpha	<3	ND - 4.7	15	(0)	Erosion of natural deposits
Uranium	2.4	2.2 - 2.6	20	0.43	Erosion of natural deposits
Radium 226+228	<1	ND - 1.2	5	(0)	Erosion of natural deposits

PRIMARY STANDARDS TESTED IN THE DISTRIBUTION SYSTEM

MICROBIALS Tested weekly	# POSITIVE	RANGE	MCL	MCLG	
Total Coliform Bacteria	0	0	Greater than 1 positive	0	Naturally present in the environment
Fecal Coliform and *E.Coli*	0	0	0	0	Human and animal fecal waste
No. of Acute Violations	0	0	-	-	

DISINFECTION BYPRODUCTS AND CHLORINE RESIDUAL (d)	DISTRIBUTION SYSTEM AVERAGE	DISTRIBUTION SYSTEM RANGE	MCL or (MRDL) (e)	MRDLG (f)	
Trihalomethanes-TTHMS (µg/l)	17	13 - 18	80	NA	By-product of drinking water chlorination
Haloacetic Acids (µg/l)	4.1	3.3 - 3.9	60	NA	By-product of drinking water disinfection
Total Chlorine Residual (mg/l)	1.1	0.3 - 2.8	(4.0)	4.0	Drinking water disinfectant added for treatment

AT THE TAP LEAD AND COPPER 30 Tap Samples Tested in 2008	90th PERCENTILE	# SITES ABOVE AL	ACTION LEVEL	PHG	
Copper (mg/l)	0.35	0 out of 30	1.3	0.3	Internal corrosion of household plumbing
Lead (µg/l)	ND<5	0 out of 30	15	0.2	Internal corrosion of household plumbing

SECONDARY STANDARDS TESTED IN GROUNDWATER-FOR AESTHETIC PURPOSES

Tested from 2008 to 2010	GROUNDWATER AVERAGE	GROUNDWATER RANGE	SECONDARY MCL	PHG or (MCLG)	
Chloride (mg/l)	67	59 - 75	500	NA	Runoff/leaching from natural deposits
Color (color units)	2	ND - 10	15	NA	Naturally-occurring organic materials
Conductivity (µmhos/cm)	759	720 - 800	1,600	NA	Substances that form ions when in water
Manganese (µg/l)	<20	ND - 34	50	NA	Leaching from natural deposits
Odor (threshold odor number)	<1	ND - 2	3	NA	Naturally-occurring organic materials
Sulfate (mg/l)	104	95 - 120	500	NA	Runoff/leaching from natural deposits
Total Dissolved Solids (mg/l)	471	450 - 500	1,000	NA	Runoff/leaching from natural deposits
Turbidity (NTU)	1.3	0.3 - 6.2	5	NA	Soil runoff

SECONDARY STANDARDS TESTED IN THE DISTRIBUTION SYSTEM

GENERAL PHYSICAL CONSTITUENTS	DISTRIBUTION SYSTEM AVERAGE	DISTRIBUTION SYSTEM RANGE	SECONDARY MCL	PHG or (MCLG)	
Color (color units)	<1	ND - 7.5	15	NA	Naturally-occurring organic materials
Odor (threshold odor number)	1	1	3	NA	Naturally-occurring organic materials
Turbidity (NTU)	<0.1	ND - 1.1	5	NA	Leaching from natural deposits

ADDITIONAL UNREGULATED CHEMICALS OF INTEREST TESTED IN GROUNDWATER

Tested from 2008 to 2010

	GROUNDWATER AVERAGE	GROUNDWATER RANGE	SECONDARY MCL	PHG or (MCLG)	
Alkalinity, total (mg/l as CaCO3)	179	160 - 190	NA	NA	Runoff/leaching from natural deposits
Calcium (mg/l)	73	66 - 83	NA	NA	Runoff/leaching from natural deposits
Hardness, total (mg/l as CaCO3)	240	220 - 270	NA	NA	Runoff/leaching from natural deposits
Magnesium (mg/l)	14	14 - 16	NA	NA	Runoff/leaching from natural deposits
pH (standard unit)	7.6	7.4 - 7.8	NA	NA	Runoff/leaching from natural deposits
Potassium (mg/l)	4.0	3.4 - 4.5	NA	NA	Runoff/leaching from natural deposits
Sodium (mg/l)	53	39 - 62	NA	NA	Runoff/leaching from natural deposits

ABBREVIATIONS

pCi/l = picoCuries per liter
µmhos/cm = micromhos per centimeter
ND = constituent not detected at the reporting limit
mg/l = milligrams per liter or parts per million
µg/l = micrograms per liter or parts per billion
NTU = nephelometric turbidity units
NA = not applicable
AL = action level

FOOTNOTES

(a) Thirty-six volatile organic chemicals were analyzed in 2010. None were detected at or above the reporting limit.
(b) California Public Health Goal (PHG). Other advisory level is the federal Maximum Contaminant Level Goal (MCLG).
(c) **"<"** means constituent detected but average is less than the reporting limit
(d) Running annual average used to calculate average and MCL compliance.
(e) Maximum Residual Disinfectant Level (MRDL)
(f) Maximum Residual Disinfectant Level Goal (MRDLG)

DEFINITIONS

Maximum Contaminant Level (MCL) **:** The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the PHGs (or MCLGs) as is economically and technologically feasible.
Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the U.S. Environmental Protection Agency.
Maximum Residual Disinfectant Level (MRDL): The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
Maximum Residual Disinfectant Level Goal (MRDLG): The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.
Public Health Goal (PHG) : The level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California Environmental Protection Agency.
Treatment Technique (TT) : A required process intended to reduce the level of a contaminant in drinking water.
Regulatory Action Level (AL) **:** The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
Primary Drinking Water Standard (PDWS): MCLs and MRDLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.