

There were no intense rainfall events during the water year. Only one time during the water year did a station receive more than two inches of rain in a 24-hour period. And except for Station 44, all other stations received more than one inch of rainfall on three or fewer days. Two-day rainfall events had between two- and five-year intensities. Because of the light rain events, rainfall recharge of the aquifers was minor.

The monthly precipitation totals for each of Zone 7's precipitation stations for the 2009 Water Year are shown in Table 3.1-2. Table 3.1-3 shows historical monthly data from Station 15E, the network key station with the longest historical record. Figure 3.1-2, a graph of cumulative rainfall from Station 15E, presents data for the 2009 Water Year, along with the driest water year (1977), the calculated average water year, the wettest year (1983), and the 2008 Water Year for comparison.

Table 3.1-4 provides the daily pan evaporation measured at Station CM_STA LDV-EV during the 2009 Water Year, and Table 3.1-5 shows monthly data going back to the 1969 Water Year.

3.2 Groundwater Elevation and Quality Monitoring Program

3.2.1 Program Description

The Groundwater Elevation and Quality Monitoring Program includes the measurement of groundwater levels in monitoring and production wells, and the collection and analyses of groundwater samples. These hydrologic data are needed to assess groundwater supplies (i.e., quantity, quality, and trends). The program focuses on the Main Basin, where groundwater is pumped for municipal uses. Other Zone 7 programs utilize the data collected in this program, and the results are used in water resources management planning and decision making.

There were a total of 238 wells in the Zone 7 groundwater monitoring program during the 2009 Water Year (shown on Figure 3.2-1). Each well in the program was monitored and/or sampled to fulfill one or more specific objective. Table 3.2-1 lists all of the wells in the program, the objective(s) of each monitoring well, and the frequency of monitoring or sampling for each objective. The objectives listed in the table are described fully in the GWMP and are described briefly below:

Water Level Monitoring – water level measurements are taken from various wells in the basin at varying frequencies.

- **Semi-Annual (SA)** - groundwater basin semi-annual water level measurements during seasonal extremes (spring highs and fall lows).
- **Quarterly (Q)** – created in the 2007 Water Year to reduce the number of wells measured monthly.

- **Monthly (M)** – monthly water level measurements used to identify when seasonal extremes occur and in turn used to trigger the semi-annual water level measurement events.

Del Valle Water Rights (WR) – monitoring of water levels and quality required for Arroyo Valle water rights.

Groundwater Basin Quality – annual sampling of groundwater for major minerals and metals. Additional sampling and testing may be performed by an outside contractor or property owner if not sampled by Zone 7 staff.

Municipal Supply Well (Mu) – monitoring of municipal wells for water levels and quality.

Key Wells (Key) – index wells in each of the largest subbasins of the Main Basin. The Amador Basin is split into the Amador West and Amador East subbasins. Starting in 2008, this objective was expanded to monitor conditions in both the upper and lower aquifers in each subbasin (see Section 3.2.2).

Salt Management Plan (SMP) – monitoring to identify salt quantity and migration in groundwater.

Other (Oth) – For the 2009 Water Year, the U.S. Geological Survey (USGS) obtained four split samples for the State Water Board's Groundwater Ambient Monitoring and Assessment (GAMA) Program as part of its continuing implementation of the Priority Basin Project in the Coastal Inland Basins study unit. The main objectives of the GAMA Program, which is implemented with the USGS and Lawrence Livermore National Laboratory, are to improve ambient groundwater quality monitoring and assessment and to increase the availability of groundwater quality information to the public. Results of the study are available at <http://pubs.usgs.gov/ds/463/>.

Well construction details for each of the wells in the program are shown in Table 3.2-2.

3.2.2 Program Changes and Notes for 2009 Water Year

The following bulleted items are items that have changed from the 2008 Water Year or are items of note for the 2009 Water Year:

Program Improvements - in a continuing effort to optimize the groundwater monitoring program, staff:

- Changed the monitoring frequency of two wells from monthly to semi-annual monitoring for groundwater levels.
- Changed the monitoring frequency of 23 wells from quarterly to semi-annual monitoring for groundwater levels.

- Removed 20 wells from the program because they could no longer be monitored, were replaced by another well, or were found to not be representative of aquifer conditions.
- Added six wells to the program: four are new wells drilled by Zone 7 and two are wells from which samples and data are supplied by Lawrence Livermore National Laboratory.

Key Well Program – The Key Well Program was significantly modified in 2008 and remained unchanged for the 2009 Water Year; however changes for the 2010 Water Year are underway. The details of the program for the 2009 Water Year are shown in the table below:

Table: Key Wells for 2009 Water Year

SubBasin	Key Well Name	Aquifer	Previous Name	Well Number
Bernal	Key_Bern_U	Upper	Fairgrounds Key	3S/1E 20C 7
	Key_Bern_L	Lower		3S/1E 17D 4
Amador-West	Key_AmW_U	Upper	Mohr Ave Key	3S/1E 9P 5
	Key_AmW_L	Lower		3S/1E 9P10
Amador-East	Key_AmE_U	Upper		3S/1E 12G 1
	Key_AmE_L	Lower	Hagemann Key	3S/1E 12K 2
Mocho II	Key_Mo2_U	Upper	Livermore Key	3S/2E 8K 2
	Key_Mo2_L	Lower		3S/2E 8G 1

During the 2009 Water Year, Zone 7 installed two new wells (3S/2E 8H 3 and 8H 4, see Section 5.4.4 for details) with the intention that one of these new wells would replace the current key well in the Mocho II lower aquifer (Key_Mo2_L). Zone 7 is currently analyzing the data to identify if water levels are consistent with other wells in the area and to determine if a correction factor needs to be applied to the new well to ensure the continuity of the data. These changes will be incorporated for the 2010 Water Year.

Arroyo De La Laguna Wells - Groundwater elevations remained high (above 280 ft) in the Bernal Upper Key Well (formerly the Fairgrounds Key Well) for the initial portion of the year; therefore, additional wells near the Arroyo De La Laguna were monitored to determine the volume of groundwater that overflowed from the basin. The overflow volume was calculated as part of Zone 7's hydrologic inventory (Section 4.2.3).

DSRSD Samples – Zone 7 has a data sharing agreement with DSRSD to obtain water levels and quality results from several of DSRSD's wells (listed in table below) installed to monitor the impacts, if any, from their wastewater treatment and sludge disposal operations in Pleasanton.

Table: DSRSD Wells Included in 2009 Program

Well Number	DSRSD Well	Aquifer
3S/1E 6N 2	MW-3	Upper
3S/1E 6N 3	MW-4	Upper
3S/1E 6N 6	NE-76	Upper
3S/1E 7D 1	SW-75	Upper
3S/1E 7D 3	SE-70	Upper
3S/1W 1J 1	MW-1	Upper
3S/1W 12A 9	NW-75	Upper

Water levels were monitored by DSRSD and supplied to Zone 7. These results are shown on Table 3.2-3 and discussed in Section 3.2.3.2. Groundwater samples from the wells were taken by DSRSD, the results of which were supplied to Zone 7. During one of these sampling events, DSRSD supplied Zone 7 with split samples that were submitted to the Zone 7 laboratory. The results are shown in Table 3.2-4 and discussed in Section 3.2.4.2

During the 2009 Water Year as part of a one-time study of the gradients adjacent to the DSRSD waste disposal ponds, and with permission from the land owner, Zone 7 measured the water levels in three shallow piezometers (3S/1E 1J 4 to 1J 6) immediately west of the ponds. These results are shown on Figure 3.2-5.

High Salts in Mocho Wellfield – High TDS and hardness concentrations were encountered in the Mocho Wellfield, particularly in Mochos 3 and 4. The water quality in both shallow and deep wells in this area is being analyzed to determine the reason for the rapid salt concentration increases seen in Mochos 3 and 4. The results of this investigation are discussed below in Section 3.2.4.4.

DWR Samples – Historically DWR has asked for split samples from some of Zone 7's program wells as part of their Water and Environment Monitoring Program. However, due to DWR budget cuts, they suspended this program for the 2009 Water Year.

3.2.3 Groundwater Levels for 2009 Water Year

3.2.3.1 Overview

In general from 2008 to 2009, groundwater levels generally dropped throughout most of the Main Basin due to continued drought conditions, groundwater pumping/extraction, and lower-than-normal recharge. The groundwater elevations and gradients for the upper and lower aquifers are discussed in detail in Sections 3.2.3.2 and 3.2.3.3 below. Groundwater quality of the upper and lower aquifers is described in Sections 3.2.4.2 and 3.2.4.3, respectively.

Table 3.2-3 contains a tabulation of spring and fall groundwater elevations for all program wells and includes a comparison with water levels of the previous fall. Figure 3.2-2 shows long-term hydrographs from each of the eight Key Wells. Figure 3.2-3 shows graphs of groundwater elevations and subbasin

inflow/outflow volumes over the last two years. In general, water levels in the Key Wells changed as follows from the 2008 Water Year:

**Table: Groundwater Elevation Change in Key Wells
Since Fall of 2008 Water Year**

Subbasin	Upper Aquifer	Lower Aquifer
Bernal	Down 3'	Up 5'
Amador West	Down 9'	Down 22'
Amador East	Down 5'	Down 5'
Mocho II	Up 0.2'	Up 1'

Water levels in the Key Wells in subbasins pumped by Zone 7 (Bernal and Amador West) indicated that water levels were at least 50 ft above historical lows (see Section 4.2.4 for a discussion on operational storage, which is based on groundwater elevation above historical lows).

3.2.3.2 Upper Aquifer Zone

Figure 3.2-4 and Figure 3.2-5 show groundwater contours in the upper aquifer for the Spring and Fall 2009 water measurement events, respectively. Both of these figures include water levels from mining area ponds, located in the central and southern portions of the Amador Subbasin, which are believed to be in equilibrium with the upper aquifer. The mining companies are actively pumping into or pumping from some of these ponds, creating a groundwater mound or depression, respectively (Section 3.5). Also much of the upper aquifer gravels in the mining area have been excavated and backfilled with relatively impervious fine-grained soil. These areas are indicated on the figures as gray-shaded areas.

As is usually the case, 2009 water levels varied with seasonal recharge and extraction; generally the highest water levels were found during the wettest times of the year. The gradient in the Upper Aquifer was generally towards the Bernal Subbasin in the western portion of the Valley and eventually to the south where groundwater flows out of the Main Basin. The gradient in the upper aquifer generally ranged from 0.005 to 0.025 with isolated areas of flatter or steeper gradients, especially near subbasin boundaries.

For the first half of the 2009 Water Year (Fall 2008 to Spring 2009), water levels generally rose five to ten feet throughout the Main Basin from the winter rainfall. Water levels in three wells near the Arroyo Mocho rose even higher (14 to 28 ft) likely due to renewed artificial recharge (there was no artificial recharge on the Arroyo Mocho in 2008, but there was 1,880 AF of artificial recharge in 2009, see Section 4.1.2). Some wells near the mining pits fluctuated up and down slightly (+/- 4 ft) likely due to dewatering activity in the mining area.

For the second half of the 2009 Water Year (Spring to Fall 2009), water levels in the Main Basin generally dropped by 3 to 17 ft. However, continued artificial recharge caused water levels to rise along the Arroyo Mocho (11 to 27 ft). Water levels in the southern portion of the mining area stayed relatively constant.

Overall, for the entire 2009 Water Year (Fall 2008 to Fall 2009), water levels in the western portion of the Main Basin generally dropped two to ten feet, especially near Zone 7's and the City of Pleasanton's municipal wells. However, in the western portion of the Mocho II and eastern portion of the Amador subbasins, water levels along the Arroyo Mocho rose 15 to 45 ft likely due to Zone 7's resumption of artificial recharge in 2009. The northern portions of the Amador and the Mocho II subbasins remained relatively constant (+/- 2 ft). Water levels in the southern part of the mining area varied significantly due to mining area activities, varying from rising three feet to dropping eight feet.

3.2.3.3 Lower Aquifer Zone

Figure 3.2-6 and Figure 3.2-7 show groundwater contours in the lower aquifer of the Main Basin for Spring and Fall 2009, respectively. These maps show a depression around several municipal or domestic wells that were pumping around the time of the Spring and Fall measurements. The groundwater gradient within the Mocho II Subbasin and within the Amador/Bernal Subbasins in the Lower Aquifer ranges from 0.001 to 0.05 with groundwater flowing generally westward along the longitudinal axis of the Livermore-Amador Valley. Typically, the lowest elevations correspond to the municipal pumping wellfields in those subbasins.

There are two major subsurface structural features that act as partial barriers to the lateral movement of groundwater in the Lower Aquifer.

1. Groundwater elevations in the Mocho II Subbasin were 85 to 100 ft higher than those across the boundary (i.e., the Livermore Fault) with the Amador Subbasin.
2. Groundwater elevations in the Dublin/Camp/Bishop Subbasins were 20 to 40 ft higher than those across the Main Basin Boundary to the south (a.k.a., the Parks Boundary).

For the first half of the 2009 Water Year (Fall 2008 to Spring 2009), water levels rose from about 1 to 42 ft, likely due to recharge from the upper aquifer and reduced municipal pumping that occurs during the winter months.

For the second half of the water year (Spring to Fall 2009), water levels dropped significantly throughout the lower aquifer of the Main Basin due to the municipal pumping that occurred during the summer months and the increased pumping from the Mocho Wellfield for Zone 7's new demineralization plant (Section 5.2.3). Water levels generally dropped by 10 to 15 ft in the Bernal Subbasin and 10 to 75 ft in the Amador and Mocho II Subbasins.

Overall for the water year (Fall 2008 to Fall 2009), water levels generally dropped throughout the Amador Subbasin by 10 to 35 ft. However, levels in the Bernal Subbasin remained fairly steady or actually rose up to 6 ft, likely related to Zone 7's pumping shift from the Hopyard Wellfield to the Mocho Wellfield for the demineralization plant. Levels in the Mocho II Subbasin varied significantly from relatively stable (+/- 6 ft) near the Arroyo Mocho to dropping 20 to 114 ft near municipal pumping wells.

Figure 3.2-8 shows the difference between groundwater elevations measured in the lower aquifer in Fall 2009 and historical lows. While water levels did drop significantly for the year, the figure shows that water levels in the central and western Main Basin were still 20 to 110 ft above historical lows at the end

of the Water Year (see Section 4.2.4 for a discussion on operational storage, which is based on groundwater elevation above historical lows). Zone 7's objective of maintaining groundwater levels above historical lows in all parts of the Main Basin was met in 2009.

3.2.4 Groundwater Quality for 2009 Water Year

3.2.4.1 Overview

Other than localized contamination from toxic sites (discussed in Section 5.3.3), the three main constituents of concern for the Livermore Valley's water supply are salts, nitrate, and boron. Concentrations and gradients of these constituents are presented in the following figures and tables:

- Table 3.2-4 contains the groundwater quality data collected from network wells during the 2009 Water Year.
- Figure 3.2-9 and Figure 3.2-12 show maps of total dissolved solids (TDS) concentrations for the upper and lower aquifers, respectively.
- Figure 3.2-10 and Figure 3.2-13 show maps of nitrate concentrations for the upper and lower aquifers, respectively.
- Figure 3.2-11 and Figure 3.2-14 show maps of boron concentrations for the upper and lower aquifers, respectively.
- Figure 3.2-15 and Figure 3.2-16 show historical graphs of TDS concentrations in the Key Wells.
- Figure 3.2-17 to Figure 3.2-20 show groundwater hydrochemographs (with water level, TDS, nitrate, and boron) from wells in each of the major subbasins.

In general, concentrations for these constituents remained the same as the 2008 concentrations except for the anomalous increases in salt concentrations in Mochos 3 and 4 (see discussion in Section 3.2.4.4). The specific results for the constituents are discussed below by aquifer zone.

3.2.4.2 Upper Aquifer Zone

SALT

In the upper aquifer, salt concentrations depend primarily on location relative to a source of recharge water, the water quality of the recharge water, and groundwater depth. Over the last 30 years there has been a general upward trend in TDS concentrations, particularly in the western portion of the Main Basin. Concentrations in the eastern and central portions of the valley, particularly near the high recharge reaches of the Arroyo Mocho and Arroyo del Valle (see Section 3.3), have stayed relatively low, especially during times of significant stream recharge.

The salt content in groundwater is lowest in the areas adjacent to the artificial stream recharge reaches on the Arroyo Valle, southeast of the mining area, at generally less than 500 mg/L of TDS. There are two main intersecting regions where TDS concentrations exceed 1,000 mg/L (Figure 3.2-9):

1. In the southern portion of the Dublin Subbasin, extending through the central portion of the Bernal Subbasin. This high salt area is most likely due to the combination of the concentrating effects of urban irrigation, the current and historical wastewater treatment land use, and/or the leaching of lacustrine sediments that occur in that area.
2. Along the northern to northeastern portion of the groundwater basin extending the full length of the Camp-Amador Subbasin boundary. This feature is most likely due to poor quality water from the marine sediments to the east and north recharging along the Arroyo Las Positas. Irrigation, with recycled water in particular, is another source of high TDS water that is recharging the upper aquifer in this region.

The salt concentrations in two mining area ponds (C1 and P41) appear to be slightly higher than those in surrounding ponds. This is likely due to the salt-concentrating effects of evaporation in combination with low infiltration of the surrounding, lower-salt groundwater.

NITRATE

Nitrate does exist in the upper aquifer at concentrations above 45 mg/L (the Maximum Contaminant Level or MCL, as specified by the EPA) (orange and red areas in Figure 3.2-10) in the following locations:

1. There is a plume that extends from the western portion of the Mocho I and eastern portion of the Mocho II Subbasins to the northeastern portion of the Amador Subbasin. In 2007, this plume had one large area with concentrations above the MCL (maximum concentration of 66.43 mg/L), however, over the last two years concentrations have decreased slightly so that there are now three smaller zones above the MCL (maximum concentration of 65.1 mg/L). Portions of this nitrate plume date back to at least the 1960s. Its causes are believed to be both natural (i.e., buried native vegetation) and artificial (i.e., existing and historical wastewater disposal, and fertilizer and livestock manure leaching). There are over 100 septic tanks still in use near the proximal end of the plume.
2. Southern portion of the Mocho I Subbasin south of Tesla Road (maximum concentration 123.11 mg/L in 2009, 107.61 mg/L in 2008). This high nitrate concentration is believed to be related to the overlying agricultural land use.
3. May Subbasin near May School Rd (maximum concentration 174.49 mg/L in 2009, 179.80 mg/L in 2009). This is the highest nitrate concentration detected in the basin. In 2008 as part of a one-time water quality study in this area, Zone 7 sampled and analyzed several domestic wells in the area to determine the extent of nitrate contamination. These results (presented in last year's annual report, *Zone 7, 2009*) suggested that the nitrate appeared to be relatively localized with the highest concentration in the vicinity of 2S/2E 28D 2. The source of high nitrate was not identified; however it likely comes from agricultural land use in that area.

4. Camp Subbasin in the eastern portion of Dublin (maximum concentration 60.67 mg/L in 2009, 74.84 mg/L in 2008). This may be a remnant of past dairy operations in the area that were discontinued long ago.
5. Southern portion of Amador West Subbasin (maximum concentration 47.39 mg/L in 2009, 46.06 mg/L in 2008). The source of this seemingly isolated nitrate occurrence near the basin boundary is unknown.

In 2008, groundwater in 3S/2E 26J 2 (in the southern portion of the Mocho II Subbasin) was measured to be above the MCL (54.47 mg/L), however, the concentration dropped to 24.76 mg/L in this well during 2009.

BORON

While there is no MCL for boron, there is a notification level of 1 mg/L, and it does typically become a problem for irrigated crops when it exceeds 1 or 2 mg/L, depending on the crop. Boron exists at elevated concentrations (up to 26 mg/L) in the upper aquifer in the following areas of the groundwater basin (Figure 3.2-11):

1. There is a plume of elevated boron concentrations that extends along the Dublin-Bernal and Camp-Amador boundaries. The highest localized concentration of boron in this area was detected near the center of this area in 3S/1E 4J 5 at a concentration of 15.2 mg/L in 2009 (14.2 mg/L in 2008).
2. Boron was also detected in the eastern portion of the valley in the May, Spring, Mocho I, and Mocho II Subbasins. The highest concentration detected was in the northern portion of this area in 2S/2E 27P 2 at 26.0 mg/L in 2009 (28.8 mg/L in 2008).

During a one-time study in 2008 (see discussion above under 'Nitrate'), boron was detected in one well (2S/2E 21R 3) in the North Livermore area at 7.47 mg/L; however, since this well is not in Zone 7's annual monitoring program, this well was not sampled in 2009.

The source of boron is unknown but may be from natural alkali/marine sediments. It should be noted that the boron detected in the western portion of the basin is primarily along the Arroyo Las Positas and lower Arroyo Mocho. It is likely that some of the source of this boron may be from the high-boron groundwater in the eastern portion of the Valley that has surfaced into the Arroyo Las Positas in the North Livermore area and flowed downstream to the Arroyo Mocho, recharging into the Amador Subbasin along the way.

3.2.4.3 Lower Aquifer Zone

SALT

Water quality in the majority of the lower aquifer of the Main Basin is generally of good quality, containing less than 500 mg/L TDS; however, in the Bernal Subbasin and around the margins of the Amador and Mocho II Subbasins, the lower aquifer contains groundwater with higher TDS concentrations (up to about 975 mg/L in 2009, see Figure 3.2-12; up to 770 mg/L in 2008). This is most likely due to

deep percolation of high TDS water from the upper aquifer and subsurface inflow of high TDS water from marine sediments in the north.

Over the last few years, salt concentrations have been increasing anomalously in wells around the Mocho Wellfield. Zone 7 sampled additional wells during 2009 to investigate the cause for the increase. The results are discussed below in Section 3.2.4.4.

NITRATE

Nitrate was only detected above the MCL in the eastern portion of the Mocho II Subbasin (Figure 3.2-13). While smaller in extent, the general location of this plume mirrors the nitrate plume in the upper aquifer, suggesting that some of the nitrate in the upper aquifer has migrated into the lower aquifer. For the 2009 Water Year, the highest concentration of nitrate in the lower aquifer was 53.59 mg/L (69.97 mg/L in 2008).

BORON

In general, boron is not a problem in the lower aquifer where detections are typically less than 1 mg/L. However, boron was detected above 2 mg/L in three lower aquifer wells in the 2009 Water Year as follows (Figure 3.2-14):

1. Boron was detected in one well in the eastern portion of the Mocho II Subbasin: 2.40 mg/L in monitoring well 3S/2E 23E 2 (2.33 mg/L in 2008). Domestic supply well 3S/2E 15J 2 was found to have a concentration of 2.18 mg/L in 2008, but was not sampled in 2009 since it was replaced in the program by well 3S/2E 15R18 (0.20 mg/L).
2. Boron was also detected above 2 mg/L in two monitoring wells near the Hopyard 9 Well in the northern portion of the Bernal Basin: 2.57 mg/L in 3S/1E 17D 4 (2.7 mg/L in 2008) and 2.46 mg/L in 3S/1E 17D11 (2.5 mg/L in 2008).

The source of boron is unconfirmed, but may be from natural alkali/marine sediments.

3.2.4.4 Increasing Salts Near Mocho Wellfield

Starting in 2008 and continuing into the 2010 Water Year, salt and hardness concentrations have been increasing in several deep monitoring wells and two municipal wells in the Mocho Wellfield. Figure 3.2-21, which shows TDS and hardness concentrations in the four Mocho municipal wells, illustrates how TDS and hardness concentrations have recently increased dramatically in Mochos 3 and 4 as compared to those in Mochos 1 and 2. The figure also shows that historically, especially from 1983 to 1985 before Mochos 3 and 4 were constructed, TDS and hardness concentrations in Mochos 1 and 2 have been higher than they are now, but have decreased throughout the latter part of the 1980s and have remained fairly constant since then. The cause of the temporal high readings has not been documented.

Zone 7 is currently investigating the reason(s) for the increased salt concentrations in Mochos 3 and 4. Because, the higher TDS in the lower aquifer appears to be limited to Mochos 3 and 4, and not exhibiting a plume-like distribution, it is likely that poorer water quality is migrating vertically from the overlying

upper aquifer zone, which the Mocho Wells were designed to exclude because of its known higher salinity and hardness and higher risk for contamination. The potential pathways for the vertical migration being investigated are:

- Direct conduits caused by improperly sealed abandoned wells in the immediate area of the Mochos 3 and 4 sites;
- Poor annular seals in Mocho Wells 3 and 4;
- Increased leakage through the semi-confining layer(s) which separate the Upper Aquifer Zone from the Lower Aquifer Zone caused by the induced head difference across it when the wells are pumping.

Zone 7's investigation efforts include:

- Analyzing drawdown data that is being collected from Upper Aquifer monitoring wells and from nearby abandoned wells as the Mocho wells are routinely operated;
- Comparing individual characteristic constituents of the water being produced from the Mocho wells with those found in upper aquifer monitoring wells; and
- Preparing detailed stratigraphic cross-sections through the area of interest to identify whether discontinuities exist in the confining layer(s) that is believed to separate the Upper Aquifer Zone from the Lower Aquifer Zones.

Completion of the investigation is anticipated for Summer 2010. The results and conclusions will be summarized in a technical memorandum and addressed in the Annual Report of the Groundwater Management Program for Water Year 2010. Also planned for 2010, is the destruction (sealing) of all abandoned and improperly sealed wells in the immediate vicinity of the Mocho Wellfield.

3.3 Surface Water Monitoring Program

3.3.1 Program Description

The objectives of Zone 7's Surface Water Monitoring Program are to:

- **Surface Water Flow Monitoring** – Quantify inflow and outflow of surface water entering and leaving the groundwater basin. Also, to quantify the portions recharging the groundwater basin's aquifers and the amounts being discharged from the groundwater basin by the gravel quarries' dewatering operations;

Table 3.2-1
Zone 7 Water Agency - Groundwater Monitoring Program
Program Wells with Measurement Frequency
2009 Water Year

SITE INFORMATION				Levels		Quality			Levels and Quality		
State Name	Well Name	Subbasin	Aq	Freq	WR	Freq	Mu	WR	Key	SMP	Oth
2S/1E 32E 1	End of Arnold Rd	Camp	U	SA		A				T-HAC-1	
2S/1E 32N 1	Camp Parks	Camp	U	SA		A				T-HAC-2	
2S/1E 32Q 1	Summer Glen Dr	Camp	U	SA		A				32Q1	
2S/1E 33L 1	Gleason Dr @ Tassajara	Camp	U	SA		A				33L1	
2S/1E 33P 2	Central Pkwy at Emerald Glen	Camp	U	SA		A				33P2	
2S/1E 33R 1	Central Pkwy @ Grafton	Camp	U	SA		A				T-DUB-1	
2S/1W 15F 1	BOLLINGER	Bishop	U	SA		A					
2S/1W 26C 2	PINE VALLEY	Dublin	U	SA		A					
2S/1W 36E 3	Kolb Park	Dublin	U	SA		A				36E3	
2S/1W 36F 1	Dublin High shallow	Dublin	L	SA		A					
2S/1W 36F 2	Dublin High mid	Dublin	L	SA		A					
2S/1W 36F 3	Dublin High deep	Dublin	L	SA		A					
2S/2E 27C 2	Dagnino Rd	Spring	U	SA							
2S/2E 27P 2	hartford ave east	Spring	U	SA		A					
2S/2E 28D 2	May School	May	U	SA		A				T-MAY-1	
2S/2E 28J 2	FCC Well	May	L	SA		A					
2S/2E 28Q 1	hartford ave	May	U	SA		A				T-MAY-2	
2S/2E 32K 2	jenson's N liv. Ave	Cayetano	U	SA		A					
2S/2E 34E 1	mud city	May	U	SA		A				T-MAY-3	
2S/2E 34Q 2	Hollyhock & Crocus	Spring	U	SA		A				T-SPR-2	
3S/1E 1F 2	Constitution Dr	Mocho II	U	SA		A				T-AIR-1	
3S/1E 1H 3	Collier Canyon g1	Mocho II	U	SA		Q				1H3	
3S/1E 1J 3	Triad Vineyard	Mocho II	L	SA							
3S/1E 1L 1	Kitty Hawk	Camp	U	SA		A				T-AIR-2	
3S/1E 1P 2	airport gas g5	Amador	U	SA		A				T-AIR-3	
3S/1E 1P 3	New airport well	Amador	L	SA		Q					
3S/1E 1R 2	Kittyhawk and Airway	Mocho II	U	SA		Q					
3S/1E 2J 2	Maint. Bldg	Camp	U	SA		A				T-GLF-2	
3S/1E 2J 3	Doolan Rd East	Camp	U	SA		A				T-GLF-1	
3S/1E 2K 2	Doolan Rd West	Camp	U	SA		A				2K2	
3S/1E 2M 3	Friesman Rd North	Camp	U	SA		A				T-FRI-1	
3S/1E 2N 2	Friesman Rd Mid	Camp	U	SA		A				T-FRI-2	
3S/1E 2N 6	Friesman Rd South	Amador	U	SA		A				T-FRI-3	
3S/1E 2P 3	Crosswinds Church	Camp	L	SA		A					
3S/1E 2Q 1	LPGC #1	Amador	U	SA		A				T-GLF-3	
3S/1E 2R 1	Beebs	Amador	U	SA		Q					
3S/1E 3G 2	fallon rd	Camp	U	SA		A					
3S/1E 4A 1	SMP-DUB-2	Camp	U	SA		A				T-DUB-2	
3S/1E 4J 5	Pimlico shallow	Camp	U	SA		A				T-DUB-3	
3S/1E 4J 6	Pimlico deep	Camp	U	SA		A				T-DUB-4	
3S/1E 4Q 2	gulfstream	Amador	U	SA		A					
3S/1E 5K 6	Rosewood shallow	Camp	U	SA		A					
3S/1E 5K 7	Rosewood deep	Camp	L	SA		A					
3S/1E 5L 3	Oracle	Camp	U	SA		A				T-HAC-3	
3S/1E 5P 6	Owens Park	Camp	U	SA		A				T-HAC-4	
3S/1E 6F 3	Dublin Ct	Dublin	U	SA		A				6F3	

Aq = Aquifer: U = Upper; L = Lower; D = Deep Freq = Frequency: R = Recorder; M = Monthly; Q = Quarterly; SA = Semiannually; A = Annually
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Table 3.2-1
Zone 7 Water Agency - Groundwater Monitoring Program
Program Wells with Measurement Frequency
2009 Water Year

SITE INFORMATION				Levels		Quality			Levels and Quality		
State Name	Well Name	Subbasin	Aq	Freq	WR	Freq	Mu	WR	Key	SMP	Oth
3S/1E 6G 5	Nissan Repair	Dublin	L	SA							
3S/1E 6N 2	DSRSD MW-3	Dublin	U	SA		A					
3S/1E 6N 3	DSRSD MW-4	Dublin	U	SA		A					
3S/1E 6N 6	DSRSD NE-76	Dublin	U	SA		A					
3S/1E 7B 2	Hopyard rd	Dublin	L	SA		A					
3S/1E 7B12	Hacienda Arch	Dublin	U	SA		A				T-CHA-1	
3S/1E 7D 1	DSRSD SW-75	Dublin	U	SA		A					
3S/1E 7D 3	DSRSD SE-70	Dublin	U	SA		A					√
3S/1E 7D 4	DSRSD SE-35	Dublin	U								√
3S/1E 7G 7	Chabot Well	Dublin	U	SA		A				T-CHA-2	
3S/1E 7J 5	Thomas Hart School	Dublin	U	SA		A				T-CHA-3	√
3S/1E 7M 2	DSRSD Sub	Dublin	U	SA		A				7M2	
3S/1E 7R 8	Mocho Canal North at Willow	Bernal	U	SA		A				T-CHA-4	√
3S/1E 8B 1	Lizard Well	Amador	U	SA		A				T-HAC-5	
3S/1E 8G 4	Apache	Amador	U	SA		A				T-HAC-6	
3S/1E 8H 9	Mocho 4 Nested Shallow	Amador	L	M		A					
3S/1E 8H10	Mocho 4 Nested Middle	Amador	L	M		A					
3S/1E 8H11	Mocho 4 Nested deep	Amador	D	M		A					
3S/1E 8H13	Mocho 3 mon	Amador	D	M		A					
3S/1E 8H18	Mocho 4	Amador	L	R		Q	√				
3S/1E 8K 1	sutter gate	Amador	U	SA		A					
3S/1E 8N 1	sports park	Bernal	U	SA		A					
3S/1E 9B 1	Stoneridge	Amador	L	R		Q	√				
3S/1E 9G 1	3775 trenery - Kamp	Amador	U	SA		A					
3S/1E 9H10	NW Lake I Shallow	Amador	U	SA							
3S/1E 9H11	NW Lake I Deep	Amador	L	SA							
3S/1E 9J 7	SW Lake I Shallow	Amador	U	Q		A					
3S/1E 9J 8	SW Lake I Middle	Amador	L	Q		A					
3S/1E 9J 9	SW Lake I Deep	Amador	L	Q		A					
3S/1E 9M 2	Mocho 1	Amador	L			Q	√				
3S/1E 9M 3	Mocho 2	Amador	L	M		Q	√				
3S/1E 9M 4	Mocho 3	Amador	L	R		Q	√				
3S/1E 9P 5	Key_AmW_U (Mohr Key)	Amador	U	M		A			√		
3S/1E 9P 9	Mohr Ave Shallow	Amador	L	M		A					
3S/1E 9P10	Key_AmW_L	Amador	L	M		A			√		
3S/1E 9P11	Mohr Ave Deep	Amador	L	M		A					
3S/1E 10A 1	Rancho El Charro	Amador	L	SA							
3S/1E 10A 2	El C harro Rd	Amador	U	SA		A					
3S/1E 10B 8	Kaiser Rd Shallow	Amador	L	Q		A					
3S/1E 10B 9	Kaiser Rd Middle 1	Amador	L	Q		A					
3S/1E 10B10	Kaiser Rd Middle 2	Amador	L	Q		A					
3S/1E 10B11	Kaiser Rd Deep	Amador	D	Q		A					
3S/1E 10D 2	Stoneridge Shallow	Amador	L	SA		A					
3S/1E 10D 3	Stoneridge Middle 1	Amador	L	SA		A					
3S/1E 10D 4	Stoneridge Middle 2	Amador	L	SA		A					
3S/1E 10D 5	Stoneridge Deep	Amador	D	SA		A					

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Table 3.2-1
Zone 7 Water Agency - Groundwater Monitoring Program
Program Wells with Measurement Frequency
2009 Water Year

SITE INFORMATION				Levels		Quality			Levels and Quality		
State Name	Well Name	Subbasin	Aq	Freq	WR	Freq	Mu	WR	Key	SMP	Oth
3S/1E 10D 7	North Lake I Shallow	Amador	U	SA							
3S/1E 10D 8	North Lake I Cluster 2	Amador	L	SA							
3S/1E 10K 2	NorthWest Cope Lake	Amador	L	SA		A					
3S/1E 10K 3	COL 1	Amador	L	SA		A					
3S/1E 10N 2	South Lake I Shallow	Amador	U	SA							
3S/1E 10N 3	South Lake I Deep	Amador	L	SA							
3S/1E 11B 1	Airport West	Amador	U	SA		Q				11B1	
3S/1E 11C 3	LAVWMA ROW	Amador	U	SA		A				T-GLF-4	
3S/1E 11G 1	Rancho Charrow Shallow	Amador	U	M		A					
3S/1E 11G 2	Rancho Charro Middle 1	Amador	L	M		A					
3S/1E 11G 3	Rancho Charro Middle 2	Amador	L	M		A					
3S/1E 11G 4	Rancho Charro Deep	Amador	D	M		A					
3S/1E 11M 2	COL2 Monitoring	Amador	L	SA		A					
3S/1E 11M 3	COL 2	Amador	L	SA		A					
3S/1E 11P 6	New Jamieson Residence	Amador	L	SA		A					
3S/1E 12A 2	Airport South	Amador	U	SA		Q				12A2	
3S/1E 12D 2	LWRP G6	Amador	U			Q					
3S/1E 12G 1	Oaks Park Shallow	Amador	U	M		Q			√		
3S/1E 12H 4	LWRP Shallow	Amador	L	SA		A					
3S/1E 12H 5	LWRP Middle 1	Amador	L	SA		A					
3S/1E 12H 6	LWRP Middle 2	Amador	L	SA		A					
3S/1E 12H 7	LWRP Deep	Amador	D	SA		A					
3S/1E 12K 2	Oaks Park Shallow	Amador	L	R		A			√		
3S/1E 12K 3	Key_AmE_L	Amador	L	M		A					
3S/1E 12K 4	Oaks Park Deep	Amador	D	M		A					
3S/1E 13P 1	cal rock	Amador	L	SA		A					
3S/1E 14B 1	Industrial Asphalt	Amador	L	SA		A					
3S/1E 14D 2	South Cope Lake	Amador	L	SA		A					
3S/1E 14K 2	lone star ind	Amador	L	SA							
3S/1E 15F 3	kaiser #8	Amador	L	SA							
3S/1E 15J 3	shadow cliff	Amador	L	SA		A					
3S/1E 15M 3	Bush/Valley South	Amador	L	SA		A					
3S/1E 16A 2	Pleas 8	AmWest	L	M		A	√				
3S/1E 16A 4	Bush/Valley Mid	Amador	L	SA		A					
3S/1E 16B 1	Bush/Valley North	Amador	D	SA		A					
3S/1E 16C 2	Santa Rita Valley Shallow	Amador	L	Q		A					
3S/1E 16C 3	Santa Rita Valley Middle	Amador	L	Q		A					
3S/1E 16C 4	Santa Rita Valley Deep	Amador	L	Q		A					
3S/1E 16E 4	black ave - cultural	Amador	U	SA		A					
3S/1E 16L 2	Pleas 3 - MW	Amador	U	M		A					
3S/1E 16L 5	Pleas 5	Amador	L	M		A	√				
3S/1E 16L 7	Pleas 6	Amador	L	M		A	√				
3S/1E 16P 5	Vervais Monitor	Amador	U	R	x	SA		x			
3S/1E 16R 1	Stanley Berry Farm	Amador	L	SA							
3S/1E 17B 4	Casterson	Amador	L	SA		A					
3S/1E 17D 3	Hopyard Nested Shallow	Bernal	L	M		A					

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Table 3.2-1
Zone 7 Water Agency - Groundwater Monitoring Program
Program Wells with Measurement Frequency
2009 Water Year

SITE INFORMATION				Levels		Quality			Levels and Quality		
State Name	Well Name	Subbasin	Aq	Freq	WR	Freq	Mu	WR	Key	SMP	Oth
3S/1E 17D 4	Hopyard Nested Middle 1	Bernal	L	M		A			√		
3S/1E 17D 5	Hopyard Nested Middle 2	Bernal	L	M		A					
3S/1E 17D 6	Hopyard Nested Middle 3	Bernal	L	M		A					
3S/1E 17D 7	Hopyard Nested Deep	Bernal	D	M		A					
3S/1E 17D10	Hopyard 7	Bernal	L	SA							
3S/1E 17D11	Hopyard 9 Monitoring Well	Bernal	L	SA		A					
3S/1E 17D12	Hopyard 9	Bernal	L	R		Q	√				
3S/1E 18A 5	Pleas 7	Bernal	L	M		A	√				
3S/1E 18A 6	Hopyard 6	Bernal	L	R		Q	√				
3S/1E 18E 4	Valley Trails II	Bernal	U	SA		A					
3S/1E 18J 2	camino segura	Bernal	U	SA		A					
3S/1E 18N 1	merritt	Bernal	L	SA							
3S/1E 19A10	SFWD South (B)	Bernal	L			A	√				
3S/1E 19A11	SFWD North (A)	Bernal	L	SA		A	√				
3S/1E 19C 4	del valle & laguna	Bernal	U	SA		A					
3S/1E 19K 1	680/bernal	Bernal	U	SA		A					
3S/1E 20B 2	Fairgrounds Potable	Bernal	L	SA		A	√				
3S/1E 20C 3	Fairgrounds Potable Backup	Bernal	L	SA		A	√				
3S/1E 20C 7	Key_Bern_U	Bernal	U	R	x	SA		x	√		
3S/1E 20C 8	Key_Bern_L	Bernal	L	M		A					
3S/1E 20C 9	Fair Nested Deep	Bernal		M		A					
3S/1E 20J 4	civic center	Bernal	U	SA		A					
3S/1E 20M11	S.F "M"LINE	Bernal	U	SA		A					
3S/1E 20Q 2	20Q2	Bernal	U	SA		A				T-PL-3	
3S/1E 22D 2	vineyard trailer	Amador	U	SA		A				T-BER-3	
3S/1E 23J 1	1627 vineyard trailer	Amador	U	SA		A					
3S/1E 24Q 1	Ruby Hills	Amador	L	SA							
3S/1E 25C 3	Katz Winery Mansion	Amador	U	SA		A					
3S/1E 29M 4	f.c. channel	Castle	U	M	x	A					
3S/1E 29P 2	castlewood dr	Bernal	U	SA		A					
3S/1W 1B 9	DSRSD Shallow	Dublin	L	SA		A					
3S/1W 1B10	DSRSD Middle	Dublin	L	SA		A					
3S/1W 1B11	DSRSD Deep	Dublin	L	SA		A				1B11	
3S/1W 1J 1	DSRSD MW-1	Dublin	U	SA		A					
3S/1W 1J 4	1J 4	Dublin	U								
3S/1W 1J 5	1J 5	Dublin	U								
3S/1W 1J 6	1J 6	Dublin	U								
3S/1W 2A 2	McNamara's	Dublin	U	SA		A				2A2	
3S/1W 12A 9	DSRSD NW-75	Dublin	U	SA		A					
3S/1W 12B 2	Stoneridge Mall Rd	Dublin	U	SA		A					
3S/1W 12J 1	DSRSD South	Dublin	U	SA		A					
3S/1W 13J 1	muirwood dr	Castle	U	SA		A					
3S/2E 1F 2	Brisa at Circuit City	Spring	U	SA		A					
3S/2E 2B 2	south front rd	Spring	U	SA		A					
3S/2E 3A 1	Bluebell	Spring	U	SA		A				T-SPR-1	
3S/2E 3K 3	first & S. front rd	Mocho I	U	SA		A				3K3	

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Zone 7 Water Agency - Groundwater Monitoring Program
Program Wells with Measurement Frequency
2009 Water Year

SITE INFORMATION				Levels		Quality			Levels and Quality		
State Name	Well Name	Subbasin	Aq	Freq	WR	Freq	Mu	WR	Key	SMP	Oth
3S/2E 5N 1	1037 portola - trailer	Mocho II	L	SA		A					
3S/2E 7C 2	york way - jaws - G4	Mocho II	U	SA		Q					
3S/2E 7H 2	dakota	Mocho II	U	SA		A					
3S/2E 7N 1	kittyhawk south	Amador	U	SA		A					
3S/2E 7P 3	CWS STA 24	Amador	L	M		A	√				
3S/2E 7R 2	CWS STA 31 Monitoring	Mocho II	D	M							
3S/2E 7R 3	CWS STA 31	Mocho II	L	M		A	√				
3S/2E 8F 1	CWS STA 10	Mocho II	L	M		A	√				
3S/2E 8G 1	CWS STA 19; Key_Mo2_L	Mocho II	L	M		A	√				
3S/2E 8H 2	North k	Mocho II	U	SA		A					
3S/2E 8H 3	N Liv Ave Mid	Mocho II	L	O		O					
3S/2E 8H 4	N Liv Ave Deep	Mocho II	L	M		A					
3S/2E 8K 2	Key_Mo2_U (Livermore Key)	Mocho II	U	R		A			√		
3S/2E 8N 2	CWS STA 14	Mocho II	L	M		A	√				
3S/2E 8P 1	CWS STA 8	Mocho II	L	M		A	√				
3S/2E 8Q14	CMT-1 Z7	Mocho II	U	SA		A					
3S/2E 9L 1	CWS STA 17	Mocho II	L	M					√		
3S/2E 9P 1	CWS STA 12	Mocho II	L	M		A	√				
3S/2E 9Q 1	CWS STA 9	Mocho II	L	M		A	√				
3S/2E 9Q 4	school st	Mocho II	U	SA		A					
3S/2E 10F 3	hexcel	Mocho I	U	SA		A					
3S/2E 10Q 1	almond	Mocho II	U	SA		A					
3S/2E 10Q 2	LLNL P-703	Mocho II	L	SA		A					
3S/2E 11C 1	joan way	Mocho I	U	SA		A				11C1	
3S/2E 12C 4	LLNL W-486	Spring	U	SA		A					
3S/2E 12J 3	LLNL W-017A	Spring	L	SA		A					
3S/2E 14A 3	S. vasco @east ave	Mocho I	U	SA		A					
3S/2E 14B 1	5763 east ave	Mocho I	L	SA		SA					
3S/2E 14C 3	14C3	Mocho I	L			A				14C3	
3S/2E 14D 1	Big Tree Well - New Went	Mocho I	L			A					
3S/2E 15E 2	Retzlaff Winery	Mocho II	L	SA		A					
3S/2E 15Q 6	Concannon	Mocho II	L	SA		A					
3S/2E 15R17	Buena Vista Shallow	Mocho II	U	SA		A					
3S/2E 15R18	Buena Vista Deep	Mocho II	L	SA		A					
3S/2E 16A 3	Memory Gardens	Mocho II	L	SA		A					
3S/2E 16B 1	CWS STA 5	Mocho II	L	M		A	√				
3S/2E 16C 1	CWS STA 15	Mocho II	L	M		A	√				
3S/2E 16E 4	pepper tree	Mocho II	U	SA		A					
3S/2E 17E 2	Mocho Street	Mocho II	U	SA		A					
3S/2E 18B 1	CWS STA 20	Amador	L	M		A	√				
3S/2E 18E 1	E. stanley	Amador	U	SA		A					
3S/2E 19D 7	Isabel Shallow	Amador	L	SA		A					
3S/2E 19D 8	Isabel Middle 1	Amador	L	SA		A					
3S/2E 19D 9	Isabel Middle 2	Amador	L	SA		A					
3S/2E 19D10	Isabel Deep	Amador	L	SA		A					
3S/2E 20M 1	Alden Lane	Amador	L	SA		A					

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Table 3.2-1
Zone 7 Water Agency - Groundwater Monitoring Program
Program Wells with Measurement Frequency
2009 Water Year

SITE INFORMATION				Levels		Quality			Levels and Quality		
State Name	Well Name	Subbasin	Aq	Freq	WR	Freq	Mu	WR	Key	SMP	Oth
3S/2E 22B 1	grapes	Mocho II	U	SA		A					
3S/2E 23E 1	Mines Nested Shallow	Mocho II	U	SA		A					
3S/2E 23E 2	Mines Nested Deep	Mocho II	L	SA		A					
3S/2E 24A 1	S. greenville	Mocho I	U	SA		A				24A1	
3S/2E 26J 2	mines rd	Mocho II	U	SA		A					
3S/2E 29F 4	usgs wetmore	Amador	U	M	x	SA		x			
3S/2E 30D 2	vineyard	Amador	U	R	x	A				T-VIN-3	
3S/2E 30G 1	genesis farms	Amador	L	SA							
3S/2E 33G 1	crohare	Amador	U	M	x	SA		x			
3S/3E 7D 2	7D 2	Spring	U	SA		A					
3S/3E 7M 2	lupin way	Spring	L	SA							
TOTALS:	All Wells: 241	In Program: 237		232	6	217	26	4	8	51	4

Salt Management Plan (SMP) Designations

T-AIR = Airport Transect
T-BER = Bernal Transect
T-CHA = Chabot Transect
T-DUB = East Dublin Transect
T-FRI = Friesman Transect

T-HAC = Hacienda Transect
T-HV = Happy Valley Transect
T-LIV = South Livermore Transect
T-MAY = May Transect
T-PLE = Pleasanton Transect

T-RH = Ruby Hill Transect
T-SPR = Springtown Transect
T-VIN = Vineyard Transect
T-WEN = Wente Transect

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Table 3.2-2
Zone 7 Water Agency - Groundwater Monitoring Program
Well Construction Details - 2009 Water Year

<i>Site</i>	<i>Type</i>	<i>Other Name</i>	<i>Owner</i>	<i>Basin</i>	<i>Aquifer</i>	<i>RP</i>	<i>Dp</i>	<i>Di</i>	<i>Perf</i>
2S/1E 32E 1	monitor	End of Arnold Rd	ZONE 7	Camp	Upper	392.56	70	2	55 - 70
2S/1E 32N 1	monitor	Camp Parks	ZONE 7	Camp	Upper	360.79	44	2.5	35 - 41
2S/1E 32Q 1	monitor	Summer Glen Dr	ZONE 7	Camp	Upper	367.55	45	2	30 - 45
2S/1E 33L 1	monitor	Gleason Dr @ Tassajara	ZONE 7	Camp	Upper	389.46	80	2	65 - 80
2S/1E 33P 2	monitor	Central Pkwy at Emerald Glen	ZONE 7	Camp	Upper	370.05	55	2	45 - 55
2S/1E 33R 1	monitor	Central Pkwy @ Grafton	ZONE 7	Camp	Upper	358	60	2	40 - 60
2S/1W 15F 1	monitor	BOLLINGER	ZONE 7	Bishop	Upper	439.44	60	2.5	50.3 - 55.3
2S/1W 26C 2	monitor	PINE VALLEY	ZONE 7	Dublin	Upper	406.22	50	2.5	40 - 45
2S/1W 36E 3	monitor	Kolb Park	ZONE 7	Dublin	Upper	346.51	60	2.5	50 - 55
2S/1W 36F 1	nested	Dublin High shallow	DSRSD	Dublin	Lower	342.71	190	2	140 - 180
2S/1W 36F 2	nested	Dublin High mid	DSRSD	Dublin	Lower	342.71	320	2	270 - 310
2S/1W 36F 3	nested	Dublin High deep	DSRSD	Dublin	Lower	342.71	520	2	440 - 510
2S/2E 27C 2	supply	Dagnino Rd	JACK PIECEFIELD	Spring	Upper	542.14	108	8	41 - 56
2S/2E 27P 2	monitor	hartford ave east	ZONE 7	Spring	Upper	505.43	68	4	35 - 63
2S/2E 28D 2	monitor	May School	ZONE 7	May	Upper	555.15	55	2.5	45 - 50
2S/2E 28J 2	supply	FCC Well	FCC	May	Lower	518.84	230	6	50 - 230
2S/2E 28Q 1	monitor	hartford ave	ZONE 7	May	Upper	513.04	28	2.5	17.6 - 22.6
2S/2E 32K 2	monitor	jenson's N liv. Ave	ZONE 7	Cayetano	Upper	507.43	43	2.5	33 - 38
2S/2E 34E 1	monitor	mud city	ZONE 7	May	Upper	499.73	49	2.5	40 - 45
2S/2E 34Q 2	monitor	Hollyhock & Crocus	ZONE 7	Spring	Upper	507.24	50	2	25 - 50
3S/1E 1F 2	monitor	Constitution Dr	ZONE 7	Mocho II	Upper	428.44	40	2	25 - 40
3S/1E 1H 3	monitor	Collier Canyon g1	ZONE 7	Mocho II	Upper	422.8	80	2.5	70 - 75
3S/1E 1J 3	irrigation	Triad Vineyard	TKG INTERNATIONAL	Mocho II	Lower	417.88	300	9	270 - 290
3S/1E 1L 1	monitor	Kitty Hawk	ZONE 7	Camp	Upper	403.04	70	2	60 - 70
3S/1E 1P 2	monitor	airport gas g5	ZONE 7	Amador	Upper	389.64	50	2.5	40 - 45
3S/1E 1P 3	muni	New airport well	CITY OF LIVERMORE	Amador	Lower	394.44	480	12	245 - 460
3S/1E 1R 2	monitor	Kittyhawk and Airway	ZONE 7	Mocho II	Upper	398.59	56	8	49 - 55
3S/1E 2J 2	monitor	Maint. Bldg	ZONE 7	Camp	Upper	380.89	41	2	31 - 41
3S/1E 2J 3	monitor	Doolan Rd East	ZONE 7	Camp	Upper	406.35	65	2	55 - 65
3S/1E 2K 2	monitor	Doolan Rd West	ZONE 7	Camp	Upper	397.04	46	2.5	36.5 - 41.5
3S/1E 2M 3	monitor	Friesman Rd North	ZONE 7	Camp	Upper	365.04	50	2	35 - 50
3S/1E 2N 2	supply	Friesman Rd Mid	Crosswinds Church	Camp	Upper	363.24	80	6	0 - 0
3S/1E 2N 6	monitor	Friesman Rd South	ZONE 7	Amador	Upper	366.14	55	2	40 - 55
3S/1E 2P 3	potable	Crosswinds Church	Crosswinds Church	Camp	Lower	371.73	380	10	340 - 372
3S/1E 2Q 1	monitor	LPGC #1	ZONE 7	Amador	Upper	369.92	45	2	35 - 45
3S/1E 2R 1	monitor	Beebs	ZONE 7	Amador	Upper	376.29	33	2.5	21 - 26
3S/1E 3G 2	monitor	fallon rd	ZONE 7	Camp	Upper	354.24	50	2.5	40 - 45
3S/1E 4A 1	monitor	SMP-DUB-2	ZONE 7	Camp	Upper	350.67	49.5	2	29.5 - 49.5
3S/1E 4J 5	monitor	Pimlico shallow	ZONE 7	Camp	Upper	345.2	47	2	22 - 47
3S/1E 4J 6	monitor	Pimlico deep	ZONE 7	Camp	Upper	345.55	110	2	68 - 110
3S/1E 4Q 2	monitor	gulfstream	ZONE 7	Amador	Upper	345.42	90	2.5	80 - 85
3S/1E 5K 6	monitor	Rosewood shallow	ZONE 7	Camp	Upper	346.05	75	4	40 - 70
3S/1E 5K 7	monitor	Rosewood deep	ZONE 7	Camp	Lower	346.19	150	4	134 - 144
3S/1E 5L 3	monitor	Oracle	ZONE 7	Camp	Upper	339.43	40	2	15 - 40
3S/1E 5P 6	monitor	Owens Park	ZONE 7	Camp	Upper	336.65	35	2	25 - 35
3S/1E 6F 3	monitor	Dublin Ct	ZONE 7	Dublin	Upper	329.82	36	2.5	27 - 32
3S/1E 6G 5	supply	Nissan Repair	VALLEY NISSAN/VOLVO	Dublin	Lower	332.22	200	8	103 - 178
3S/1E 6N 2	monitor	DSRSD MW-3	DSRSD	Dublin	Upper	335.2	67	4	42 - 67
3S/1E 6N 3	monitor	DSRSD MW-4	DSRSD	Dublin	Upper	340.74	72		49 - 72

Table 3.2-2
Zone 7 Water Agency - Groundwater Monitoring Program
Well Construction Details - 2009 Water Year

<i>Site</i>	<i>Type</i>	<i>Other Name</i>	<i>Owner</i>	<i>Basin</i>	<i>Aquifer</i>	<i>RP</i>	<i>Dp</i>	<i>Di</i>	<i>Perf</i>
3S/1E 6N 6	monitor	DSRSD NE-76	DSRSD	Dublin	Upper	333.58	75	2	50 - 70
3S/1E 7B 2	monitor	Hopyard rd	ZONE 7	Dublin	Lower	327.77	152	4	143 - 149
3S/1E 7B12	monitor	Hacienda Arch	ZONE 7	Dublin	Upper	327.82	70	2	50 - 70
3S/1E 7D 1	monitor	DSRSD SW-75	DSRSD	Dublin	Upper	330.09	75	2	54 - 74
3S/1E 7D 3	monitor	DSRSD SE-70	DSRSD	Dublin	Upper	332.28	70	2	45 - 65
3S/1E 7D 4	monitor	DSRSD SE-35	DSRSD	Dublin	Upper	332.55	35	2	20 - 35
3S/1E 7G 7	monitor	Chabot Well	ZONE 7	Dublin	Upper	327.33	55	2	35 - 55
3S/1E 7J 5	monitor	Thomas Hart School	ZONE 7	Dublin	Upper	326.78	50	2	30 - 50
3S/1E 7M 2	monitor	DSRSD Sub	ZONE 7	Dublin	Upper	328.4	88	4	70 - 85
3S/1E 7R 8	monitor	Mocho Canal North at Willow	ZONE 7	Bernal	Upper	326.63	52	2	42 - 52
3S/1E 8B 1	monitor	Lizard Well	ZONE 7	Amador	Upper	338.28	148	4	55 - 82
3S/1E 8G 4	monitor	Apache	ZONE 7	Amador	Upper	341.47	85	2	60 - 85
3S/1E 8H 9	nested	Mocho 4 Nested Shallow	DSRSD	Amador	Lower	340.39	240	2	210 - 230
3S/1E 8H10	nested	Mocho 4 Nested Middle	DSRSD	Amador	Lower	340.19	440	2	290 - 430
3S/1E 8H11	nested	Mocho 4 Nested deep	DSRSD	Amador	Deep	340.13	720	2	520 - 720
3S/1E 8H13	monitor	Mocho 3 mon	ZONE 7	Amador	Deep	338.96	800	2	570 - 790
3S/1E 8H18	muni	Mocho 4	ZONE 7	Amador	Lower	341.94	745	20	515 - 730
3S/1E 8K 1	monitor	sutter gate	ZONE 7	Amador	Upper	332.37	99	2.5	89 - 94
3S/1E 8N 1	monitor	sports park	ZONE 7	Bernal	Upper	323.68	72	2.5	62 - 67
3S/1E 9B 1	muni	Stoneridge	ZONE 7	Amador	Lower	349.23	810	20	250 - 800
3S/1E 9G 1	supply	3775 trenery - Kamp	MRS. KAMP	Amador	Upper	352.36	160	9	77 - 149
3S/1E 9H10	nested	NW Lake I Shallow	ZONE 7	Amador	Upper	352.89	145	2	120 - 140
3S/1E 9H11	nested	NW Lake I Deep	ZONE 7	Amador	Lower	353.04	190	2	165 - 185
3S/1E 9J 7	nested	SW Lake I Shallow	ZONE 7	Amador	Upper	357.36	505	2	120 - 140
3S/1E 9J 8	nested	SW Lake I Middle	ZONE 7	Amador	Lower	357.55	505	2	280 - 300
3S/1E 9J 9	nested	SW Lake I Deep	ZONE 7	Amador	Lower	357.68	505	2	480 - 500
3S/1E 9M 2	muni	Mocho 1	ZONE 7	Amador	Lower	343.95	530	16	150 - 510
3S/1E 9M 3	muni	Mocho 2	ZONE 7	Amador	Lower	347.47	575	18	250 - 570
3S/1E 9M 4	muni	Mocho 3	ZONE 7	Amador	Lower	342.89	498	20	315 - 493
3S/1E 9P 5	monitor	Key_AmW_U (Mohr Key)	ZONE 7	Amador	Upper	349.4	105	2.5	95 - 100
3S/1E 9P 9	nested	Mohr Ave Shallow	ZONE 7	Amador	Lower	349.59	210	2	185 - 205
3S/1E 9P10	nested	Key_AmW_L	ZONE 7	Amador	Lower	349.51	310	2	285 - 305
3S/1E 9P11	nested	Mohr Ave Deep	ZONE 7	Amador	Lower	349.44	425	2	405 - 420
3S/1E 10A 1	supply	Rancho El Charro	JAMIESON COMPANY	Amador	Lower	364.65	253	10	103 - 240
3S/1E 10A 2	monitor	El C harro Rd	ZONE 7	Amador	Upper	364.85	88	4	70 - 80
3S/1E 10B 8	nested	Kaiser Rd Shallow	DSRSD	Amador	Lower	353.6	200	2	100 - 190
3S/1E 10B 9	nested	Kaiser Rd Middle 1	DSRSD	Amador	Lower	353.49	294	2	244 - 284
3S/1E 10B10	nested	Kaiser Rd Middle 2	DSRSD	Amador	Lower	353.52	600	2	400 - 590
3S/1E 10B11	nested	Kaiser Rd Deep	DSRSD	Amador	Deep	353.52	810	2	660 - 800
3S/1E 10D 2	nested	Stoneridge Shallow	DSRSD	Amador	Lower	348.74	212	2	182 - 212
3S/1E 10D 3	nested	Stoneridge Middle 1	DSRSD	Amador	Lower	348.61	322	2	262 - 312
3S/1E 10D 4	nested	Stoneridge Middle 2	DSRSD	Amador	Lower	348.63	616	2	366 - 606
3S/1E 10D 5	nested	Stoneridge Deep	DSRSD	Amador	Deep	348.63	790	2	710 - 780
3S/1E 10D 7	nested	North Lake I Shallow	ZONE 7	Amador	Upper	361.06	215	2	118 - 138
3S/1E 10D 8	nested	North Lake I Cluster 2	ZONE 7	Amador	Lower	361.02	215	2	190 - 210
3S/1E 10K 2	monitor	NorthWest Cope Lake	ZONE 7	Amador	Lower	358.68	590.6	4	195.5 - 585.6
3S/1E 10K 3	muni	COL 1	ZONE 7	Amador	Lower	354	530	18	205 - 530
3S/1E 10N 2	nested	South Lake I Shallow	ZONE 7	Amador	Upper	360.31	195	2	125 - 145
3S/1E 10N 3	nested	South Lake I Deep	ZONE 7	Amador	Lower	360.18	195	2	170 - 190

Table 3.2-2
Zone 7 Water Agency - Groundwater Monitoring Program
Well Construction Details - 2009 Water Year

<i>Site</i>	<i>Type</i>	<i>Other Name</i>	<i>Owner</i>	<i>Basin</i>	<i>Aquifer</i>	<i>RP</i>	<i>Dp</i>	<i>Di</i>	<i>Perf</i>
3S/1E 11B 1	monitor	Airport West	ZONE 7	Amador	Upper	369.35	43	2.5	33 - 38
3S/1E 11C 3	monitor	LAVWMA ROW	ZONE 7	Amador	Upper	364.82	55	2	35 - 55
3S/1E 11G 1	nested	Rancho Charrow Shallow	DSRSD	Amador	Upper	371.62	120	2	100 - 110
3S/1E 11G 2	nested	Rancho Charro Middle 1	DSRSD	Amador	Lower	371.61	350	2	230 - 340
3S/1E 11G 3	nested	Rancho Charro Middle 2	DSRSD	Amador	Lower	371.64	590	2	380 - 580
3S/1E 11G 4	nested	Rancho Charro Deep	DSRSD	Amador	Deep	371.68	790	2	620 - 780
3S/1E 11M 2	monitor	COL2 Monitoring	ZONE 7	Amador	Lower	365.96	700	4.5	199 - 699
3S/1E 11M 3	muni	COL 2	ZONE 7	Amador	Lower	364	684	18	345 - 684
3S/1E 11P 6	potable	New Jamieson Residence	DOUG JAMIESON	Amador	Lower	376.67	400	5	240 - 380
3S/1E 12A 2	monitor	Airport South	ZONE 7	Amador	Upper	401.35	69	2.5	63.7 - 68.7
3S/1E 12D 2	monitor	LWRP G6	ZONE 7	Amador	Upper	384.45	44.6		36 - 41
3S/1E 12G 1	monitor	Oaks Park Shallow	ZONE 7	Amador	Upper	404.47	73	2.5	63 - 68
3S/1E 12H 4	nested	LWRP Shallow	CITY OF LIVERMORE	Amador	Lower	407.75	270	2	185 - 260
3S/1E 12H 5	nested	LWRP Middle 1	CITY OF LIVERMORE	Amador	Lower	407.78	400	2	360 - 390
3S/1E 12H 6	nested	LWRP Middle 2	CITY OF LIVERMORE	Amador	Lower	407.75	480	2	410 - 468
3S/1E 12H 7	nested	LWRP Deep	CITY OF LIVERMORE	Amador	Deep	407.67	684	2	609 - 674
3S/1E 12K 2	nested	Oaks Park Shallow	ZONE 7	Amador	Lower	406.29	300	2	210 - 295
3S/1E 12K 3	nested	Key_AmE_L	ZONE 7	Amador	Lower	406.83	475	2	355 - 470
3S/1E 12K 4	nested	Oaks Park Deep	ZONE 7	Amador	Deep	406.71	475	2	550 - 570
3S/1E 13P 1	supply	cal rock	JAIMESON COMPANY	Amador	Lower	399.98	652	14	0 - 652
3S/1E 14B 1	industrial	Industrial Asphalt	VULCAN MATERIALS	Amador	Lower	384.2	435	8	200 - 410
3S/1E 14D 2	monitor	South Cope Lake	ZONE 7	Amador	Lower	371.83	740	16	170 - 740
3S/1E 14K 2	supply	lone star ind	LONESTAR	Amador	Lower	391.73	508	16	120 - 480
3S/1E 15F 3	supply	kaiser #8	KAISER	Amador	Lower	368.99	640	14	195 - 615
3S/1E 15J 3	supply	shadow cliff	EAST BAY REGIONAL PARK	Amador	Lower	344.59	196	8	154 - 184
3S/1E 15M 3	monitor	Bush/Valley South	ZONE 7	Amador	Lower	362.88	600	2	280 - 590
3S/1E 16A 2	muni	Pleas 8	CITY OF PLEASANTON	AmWest	Lower	358.2	510	20	200 - 495
3S/1E 16A 4	monitor	Bush/Valley Mid	ZONE 7	Amador	Lower	359.36	603	2	260 - 580
3S/1E 16B 1	monitor	Bush/Valley North	ZONE 7	Amador	Deep	355.81	805	2	605 - 800
3S/1E 16C 2	nested	Santa Rita Valley Shallow	ZONE 7	Amador	Lower	344.38	190	2	165 - 185
3S/1E 16C 3	nested	Santa Rita Valley Middle	ZONE 7	Amador	Lower	344.27	305	2	280 - 300
3S/1E 16C 4	nested	Santa Rita Valley Deep	ZONE 7	Amador	Lower	344.16	375	2	355 - 370
3S/1E 16E 4	monitor	black ave - cultural	ZONE 7	Amador	Upper	351.69	105	2.5	95 - 100
3S/1E 16L 2	monitor	Pleas 3 - MW	CITY OF PLEASANTON	Amador	Upper	355.86	151	12	56 - 136
3S/1E 16L 5	muni	Pleas 5	CITY OF PLEASANTON	Amador	Lower	358.05	685	18	149 - 650
3S/1E 16L 7	muni	Pleas 6	CITY OF PLEASANTON	Amador	Lower	354.47	647	18	165 - 647
3S/1E 16P 5	monitor	Vervais Monitor	ZONE 7	Amador	Upper	354.51	75	2.5	64 - 69
3S/1E 16R 1	supply	Stanley Berry Farm	R.L. IRBY	Amador	Lower	362.5	239	10	70 - 226
3S/1E 17B 4	supply	Casterson	LLOYD HAINES	Amador	Lower	337.69	248	8	0 - 248
3S/1E 17D 3	nested	Hopyard Nested Shallow	ZONE 7	Bernal	Lower	325.13	108	4	92 - 98
3S/1E 17D 4	nested	Hopyard Nested Middle 1	ZONE 7	Bernal	Lower	325.14	236	4	206 - 226
3S/1E 17D 5	nested	Hopyard Nested Middle 2	ZONE 7	Bernal	Lower	325.13	308	4	266 - 286
3S/1E 17D 6	nested	Hopyard Nested Middle 3	ZONE 7	Bernal	Lower	325.12	408	4	378 - 398
3S/1E 17D 7	nested	Hopyard Nested Deep	ZONE 7	Bernal	Deep	325.13	684	4	654 - 674
3S/1E 17D10	monitor	Hopyard 7	ZONE 7	Bernal	Lower	328.13	425	24	185 - 415
3S/1E 17D11	monitor	Hopyard 9 Monitoring Well	ZONE 7	Bernal	Lower	324.84	603	2	340 - 505
3S/1E 17D12	muni	Hopyard 9	ZONE 7	Bernal	Lower	327.9	315	18	235 - 310
3S/1E 18A 5	muni	Pleas 7	CITY OF PLEASANTON	Bernal	Lower	329.05	454	18	120 - 440
3S/1E 18A 6	muni	Hopyard 6	ZONE 7	Bernal	Lower	326.74	500	18	158 - 490

Table 3.2-2
Zone 7 Water Agency - Groundwater Monitoring Program
Well Construction Details - 2009 Water Year

<i>Site</i>	<i>Type</i>	<i>Other Name</i>	<i>Owner</i>	<i>Basin</i>	<i>Aquifer</i>	<i>RP</i>	<i>Dp</i>	<i>Di</i>	<i>Perf</i>
3S/1E 18E 4	monitor	Valley Trails II	ZONE 7	Bernal	Upper	320.21	83	4	69 - 79
3S/1E 18J 2	monitor	camino segura	ZONE 7	Bernal	Upper	322.81	71	2.5	61 - 66
3S/1E 18N 1	supply	merritt	RALPH MERRITT	Bernal	Lower	319.43	708	12	229 - 610
3S/1E 19A10	muni	SFWD South (B)	SFWD	Bernal	Lower	337.02	331		189 - 327
3S/1E 19A11	muni	SFWD North (A)	SFWD	Bernal	Lower	334.27	330	18	196 - 320
3S/1E 19C 4	monitor	del valle & laguna	ZONE 7	Bernal	Upper	322.23	78	4	68 - 73
3S/1E 19K 1	monitor	680/bernal	ZONE 7	Bernal	Upper	321.54	57.6	2.5	47.6 - 52.6
3S/1E 20B 2	muni	Fairgrounds Potable	ALAMEDA COUNTY	Bernal	Lower	342.62	500	12	218 - 500
3S/1E 20C 3	muni	Fairgrounds Potable Backup	ALAMEDA FAIRGROUNDS	Bernal	Lower	340.31	110		74 - 107
3S/1E 20C 7	monitor	Key_Bern_U	ZONE 7	Bernal	Upper	338.66	153	2	65 - 145
3S/1E 20C 8	monitor	Key_Bern_L	ZONE 7	Bernal	Lower	338.67	315	2	295 - 315
3S/1E 20C 9	nested	Fair Nested Deep	ZONE 7	Bernal		338.78	515	2	495 - 515
3S/1E 20J 4	monitor	civic center	ZONE 7	Bernal	Upper	331.62	72	2.5	62 - 67
3S/1E 20M11	monitor	S.F "M"LINE	ZONE 7	Bernal	Upper	325.73	71	2.5	61 - 66
3S/1E 20Q 2	monitor	20Q2	CITY OF PLEASANTON	Bernal	Upper	325.82	65	10	45 - 53
3S/1E 22D 2	monitor	vineyard trailer	ZONE 7	Amador	Upper	368.05	72	2.5	62 - 67
3S/1E 23J 1	monitor	1627 vineyard trailer	D. SAFRENO	Amador	Upper	428.2	120	8	0 - 120
3S/1E 24Q 1	supply	Ruby Hills	RUBY HILLS	Amador	Lower	427.5	440	14	200 - 400
3S/1E 25C 3	monitor	Katz Winery Mansion	RUBY HILLS	Amador	Upper	454.16	146	2	70 - 140
3S/1E 29M 4	monitor	f.c. channel	ZONE 7	Castle	Upper	310.94	57	2.5	47 - 52
3S/1E 29P 2	monitor	castlewood dr	ZONE 7	Bernal	Upper	302.82	42	2.5	32 - 37
3S/1W 1B 9	nested	DSRSD Shallow	DSRSD	Dublin	Lower	334.57	162	2	122 - 152
3S/1W 1B10	nested	DSRSD Middle	DSRSD	Dublin	Lower	334.58	414	2	274 - 404
3S/1W 1B11	nested	DSRSD Deep	DSRSD	Dublin	Lower	334.24	560	2	480 - 550
3S/1W 1J 1	monitor	DSRSD MW-1	DSRSD	Dublin	Upper	334.36	70		44 - 64
3S/1W 1J 4	piezometer	1J 4	PAUL ZAMPIERIN	Dublin	Upper	327.12	15	1	4.5 - 15
3S/1W 1J 5	piezometer	1J 5	PAUL ZAMPIERIN	Dublin	Upper	328.53	15	1	4.5 - 15
3S/1W 1J 6	piezometer	1J 6	PAUL ZAMPIERIN	Dublin	Upper	329.1	15	1	4.5 - 15
3S/1W 2A 2	monitor	McNamara's	ZONE 7	Dublin	Upper	369.4	47	2.5	37 - 42
3S/1W 12A 9	monitor	DSRSD NW-75	DSRSD	Dublin	Upper	332.14	74	2	49 - 69
3S/1W 12B 2	monitor	Stoneridge Mall Rd	ZONE 7	Dublin	Upper	342.89	39.5	4	20 - 50
3S/1W 12J 1	monitor	DSRSD South	ZONE 7	Dublin	Upper	329.31	62	2.5	52 - 57
3S/1W 13J 1	monitor	muirwood dr	ZONE 7	Castle	Upper	343.94	48	2.5	39 - 44
3S/2E 1F 2	monitor	Brisa at Circuit City	ZONE 7	Spring	Upper	572.99	68.6	2.5	59 - 64
3S/2E 2B 2	monitor	south front rd	ZONE 7	Spring	Upper	539.45	46	2.5	36.9 - 41.9
3S/2E 3A 1	monitor	Bluebell	ZONE 7	Spring	Upper	517.63	54	2.5	44 - 49
3S/2E 3K 3	monitor	first & S. front rd	ZONE 7	Mocho I	Upper	522.83	60	2.5	50 - 55
3S/2E 5N 1	supply	1037 portola - trailer	TRAILER RANCH	Mocho II	Lower	440	210	10	0 - 210
3S/2E 7C 2	monitor	york way - jaws - G4	ZONE 7	Mocho II	Upper	420.84	49	2.5	39 - 44
3S/2E 7H 2	monitor	dakota	CITY OF LIVERMORE	Mocho II	Upper	442.85	54	2	44 - 54
3S/2E 7N 1	monitor	kittyhawk south	ZONE 7	Amador	Upper	421.06	130	4	76 - 130
3S/2E 7P 3	muni	CWS STA 24	CAL WATER SERVICE	Amador	Lower	431.46	510	16	300 - 490
3S/2E 7R 2	monitor	CWS STA 31 Monitoring	CAL WATER SERVICE	Mocho II	Deep	446	805	2	750 - 805
3S/2E 7R 3	muni	CWS STA 31	CAL WATER SERVICE	Mocho II	Lower	446	583	16	410 - 528
3S/2E 8F 1	muni	CWS STA 10	CAL WATER SERVICE	Mocho II	Lower	456.24	576	16	143 - 433
3S/2E 8G 1	muni	CWS STA 19; Key_Mo2_L	CAL WATER SERVICE	Mocho II	Lower	465.05	465	16	120 - 455
3S/2E 8H 2	monitor	North k	ZONE 7	Mocho II	Upper	469.61	46	2.5	36 - 41
3S/2E 8H 3	monitor	N Liv Ave Mid	ZONE 7	Mocho II	Lower	477.25	195	2	170 - 190
3S/2E 8H 4	monitor	N Liv Ave Deep	ZONE 7	Mocho II	Lower	476.97	385	2	360 - 380

Table 3.2-2
Zone 7 Water Agency - Groundwater Monitoring Program
Well Construction Details - 2009 Water Year

<i>Site</i>	<i>Type</i>	<i>Other Name</i>	<i>Owner</i>	<i>Basin</i>	<i>Aquifer</i>	<i>RP</i>	<i>Dp</i>	<i>Di</i>	<i>Perf</i>
3S/2E 8K 2	monitor	Key_Mo2_U (Livermore Key)	ZONE 7	Mocho II	Upper	464.45	74	2.5	64 - 69
3S/2E 8N 2	muni	CWS STA 14	CAL WATER SERVICE	Mocho II	Lower	453.64	526	10	140 - 515
3S/2E 8P 1	muni	CWS STA 8	CAL WATER SERVICE	Mocho II	Lower	468.2	273	10	122 - 263
3S/2E 8Q14	monitor	CMT-1 Z7	B&C GAS	Mocho II	Upper	471.96	147	1.7	142 - 147
3S/2E 9L 1	muni	CWS STA 17	CAL WATER SERVICE	Mocho II	Lower	499.39	516	16	136 - 496
3S/2E 9P 1	muni	CWS STA 12	CAL WATER SERVICE	Mocho II	Lower	501.28	515	16	192 - 492
3S/2E 9Q 1	muni	CWS STA 9	CAL WATER SERVICE	Mocho II	Lower	518.15	572	14	180 - 492
3S/2E 9Q 4	monitor	school st	ZONE 7	Mocho II	Upper	504.35	80	2.5	70 - 75
3S/2E 10F 3	monitor	hexcel	ZONE 7	Mocho I	Upper	534.84	45	2.5	35 - 40
3S/2E 10Q 1	monitor	almond	ZONE 7	Mocho II	Upper	555.36	43.5	2.5	33.5 - 33.8
3S/2E 10Q 2	monitor	LLNL P-703	LLNL	Mocho II	Lower	549.33	325	4.5	298 - 325
3S/2E 11C 1	monitor	joan way	ZONE 7	Mocho I	Upper	557.1	66.2	2.5	56.2 - 61.2
3S/2E 12C 4	monitor	LLNL W-486	LLNL	Spring	Upper	591.46	108	4.5	100 - 108
3S/2E 12J 3	monitor	LLNL W-017A	LLNL	Spring	Lower	628.84	160	5	127 - 157
3S/2E 14A 3	monitor	S. vasco @east ave	ZONE 7	Mocho I	Upper	601.87	110	2.5	100 - 105
3S/2E 14B 1	domestic	5763 east ave	LAS POSITAS SWIM CLUB	Mocho I	Lower	593.36	300	9	146 - 234
3S/2E 14C 3	irrigation	14C3	WENTE VINEYARDS	Mocho I	Lower	586.83	405	12	160 - 388
3S/2E 14D 1	irrigation	Big Tree Well - New Wente	WENTE VINEYARDS	Mocho I	Lower	577.8	500	12	170 - 486
3S/2E 15E 2	irrigation	Retzlaff Winery	BOB TAYLOR	Mocho II	Lower	549.69	192	8	104 - 189
3S/2E 15Q 6	irrigation	Concannon	CONCANNON	Mocho II	Lower	577.26	301	12	220 - 301
3S/2E 15R17	nested	Buena Vista Shallow	ZONE 7	Mocho II	Upper	592.41	63	2	38 - 58
3S/2E 15R18	nested	Buena Vista Deep	ZONE 7	Mocho II	Lower	592.47	138	2	113 - 133
3S/2E 16A 3	irrigation	Memory Gardens	MEMORY GARDENS	Mocho II	Lower	527.06	240	10	91 - 240
3S/2E 16B 1	muni	CWS STA 5	CAL WATER SERVICE	Mocho II	Lower	520.22	410	14	140 - 390
3S/2E 16C 1	muni	CWS STA 15	CAL WATER SERVICE	Mocho II	Lower	510.97	584	16	150 - 523
3S/2E 16E 4	monitor	pepper tree	ZONE 7	Mocho II	Upper	506.26	45	2.5	35 - 40
3S/2E 17E 2	supply	Mocho Street	JOHN & BARBARA STEIGE	Mocho II	Upper	467.71	94	6	0 - 94
3S/2E 18B 1	muni	CWS STA 20	CAL WATER SERVICE	Amador	Lower	438.56	497	16	190 - 465
3S/2E 18E 1	monitor	E. stanley	ZONE 7	Amador	Upper	423.86	133.8	2.5	123.8 - 128.8
3S/2E 19D 7	nested	Isabel Shallow	ZONE 7	Amador	Lower	415.07	180	2	100 - 180
3S/2E 19D 8	nested	Isabel Middle 1	ZONE 7	Amador	Lower	415.04	260	2	210 - 260
3S/2E 19D 9	nested	Isabel Middle 2	ZONE 7	Amador	Lower	414.98	390	2	280 - 390
3S/2E 19D10	nested	Isabel Deep	ZONE 7	Amador	Lower	414.89	470	2	420 - 470
3S/2E 20M 1	supply	Alden Lane	ALDEN LANE NURSERY	Amador	Lower	478.79	184	12	0 - 184
3S/2E 22B 1	monitor	grapes	ZONE 7	Mocho II	Upper	585.88	31.9	2.5	21.9 - 26.9
3S/2E 23E 1	nested	Mines Nested Shallow	ZONE 7	Mocho II	Upper	613.36	40	2	20 - 35
3S/2E 23E 2	nested	Mines Nested Deep	ZONE 7	Mocho II	Lower	613.23	110	2	95 - 105
3S/2E 24A 1	monitor	S. greenville	ZONE 7	Mocho I	Upper	717.7	46.3	2.5	36.3 - 41.3
3S/2E 26J 2	monitor	mines rd	ZONE 7	Mocho II	Upper	689.92	44	2.5	34 - 39
3S/2E 29F 4	monitor	usgs wetmore	ZONE 7	Amador	Upper	457.5	36	2.5	26 - 31
3S/2E 30D 2	monitor	vineyard	ZONE 7	Amador	Upper	431.6	44	4	24 - 39
3S/2E 30G 1	domestic	genesis farms	GENISIS FARMS	Amador	Lower	453.69	390	12	150 - 370
3S/2E 33G 1	monitor	crohare	ZONE 7	Amador	Upper	511.52	17	2.5	9 - 14
3S/3E 7D 2	monitor	7D 2	ZONE 7	Spring	Upper	622.84	74	2.5	64 - 69
3S/3E 7M 2	supply	lupin way	LEON MOORE	Spring	Lower	628.64	199	6	171 - 188

RP = Reference Point Elevation (in feet above MSL)

Dp = Depth of well (in feet below ground surface)

Di = Diameter of well casing (in inches)

Perf = Preferred interval (in feet below ground surface)

TABLE 3.2-3

**Groundwater Monitoring Program
Semi-Annual Groundwater Levels in Feet
Spring and Fall 2009 Measurements**

Well Number	Well Depth	Aquifer	Sub-Basin	Fall 2008		Spring 2009		Fall 2009		Change in Elevation		
				Depth to Water	GW Elev	Depth to Water	GW Elev	Depth to Water	GW Elev	Seasonal		Annual
										Fall 08 to Spring 09	Spring 09 to Fall 09	
2S/1E 32E 1	70	U	Camp	33.5	359.1	33.1	359.5	34.6	358.0	0.4	-1.5	-1.1
2S/1E 32N 1	44	U	Camp	16.1	344.7	15.9	344.9	17.3	343.5	0.1	-1.4	-1.2
2S/1E 32Q 1	45	U	Camp	23.7	343.9	23.9	343.6	24.9	342.6	-0.3	-1.0	-1.3
2S/1E 33L 1	80	U	Camp	47.2	342.3	48.0	341.5	49.2	340.3	-0.9	-1.2	-2.1
2S/1E 33P 2	55	U	Camp	29.0	341.1	29.7	340.3	30.7	339.3	-0.7	-1.0	-1.7
2S/1E 33R 1	60	U	Camp	17.9	340.1	18.9	339.1	19.3	338.7	-1.0	-0.4	-1.4
2S/1W 15F 1	60	U	Bishop	10.3	429.1	9.8	429.7	10.5	428.9	0.6	-0.8	-0.2
2S/1W 26C 2	50	U	Dublin	25.4	380.9	23.4	382.8	25.5	380.7	2.0	-2.1	-0.2
2S/1W 36E 3	60	U	Dublin	4.6	341.9	3.2	343.3	4.9	341.6	1.4	-1.7	-0.3
2S/1W 36F 1	190	L	Dublin	23.0	319.7	14.5	328.3	24.4	318.3	8.5	-9.9	-1.4
2S/1W 36F 2	320	L	Dublin	37.7	305.1	29.6	313.1	37.5	305.2	8.0	-7.9	0.1
2S/1W 36F 3	520	L	Dublin	69.9	272.8	57.4	285.3	67.6	275.1	12.5	-10.2	2.3
2S/2E 27C 2	108	U	Spring	14.9	527.3	15.3	526.8	15.9	526.2	-0.4	-0.6	-1.0
2S/2E 27P 2	68	U	Spring	3.2	502.3	1.8	503.7	3.3	502.2	1.4	-1.5	-0.1
2S/2E 28D 2	55	U	May	27.1	528.1	27.5	527.7	28.0	527.2	-0.4	-0.4	-0.8
2S/2E 28J 2	230	L	May	4.2	514.7	3.2	515.6	4.4	514.5	0.9	-1.2	-0.2
2S/2E 28Q 1	28	U	May	7.6	505.4	4.3	508.7	6.6	506.5	3.3	-2.3	1.0
2S/2E 32K 2	43	U	Cayetano	9.5	497.9	8.3	499.2	8.9	498.6	1.2	-0.6	0.7
2S/2E 34E 1	49	U	May	5.9	493.9	3.9	495.8	5.9	493.9	2.0	-2.0	0.0
2S/2E 34Q 2	50	U	Spring	2.9	504.4	2.4	504.9	3.4	503.9	0.5	-1.0	-0.5
3S/1E 1F 2	40	U	Mocho II	19.7	408.8	19.7	408.8	19.7	408.8	0.0	0.0	0.0
3S/1E 1H 3	80	U	Mocho II	28.1	394.7	25.9	396.9	29.9	392.9	2.2	-4.0	-1.8
3S/1E 1J 3	300	L	Mocho II	NM	-	19.0	398.9	47.4	370.5	-	-28.5	-
3S/1E 1L 1	70	U	Camp	49.2	353.9	50.3	352.7	54.1	348.9	-1.1	-3.8	-4.9
3S/1E 1P 2	50	U	Amador	22.1	367.6	21.2	368.5	22.3	367.3	0.9	-1.1	-0.3
3S/1E 1P 3	480	L	Amador	102.1	292.4	90.2	304.2	120.5	274.0	11.8	-30.3	-18.4
3S/1E 1R 2	56	U	Mocho II	18.3	380.3	15.9	382.7	19.6	379.0	2.4	-3.7	-1.2
3S/1E 2J 2	41	U	Camp	15.9	365.0	12.0	368.9	16.2	364.7	3.9	-4.2	-0.3
3S/1E 2J 3	65	U	Camp	30.2	376.2	27.9	378.5	28.2	378.2	2.3	-0.3	2.0
3S/1E 2K 2	46	U	Camp	28.6	368.5	26.9	370.1	28.9	368.1	1.6	-2.0	-0.4
3S/1E 2M 3	50	U	Camp	19.3	345.7	18.6	346.5	19.8	345.3	0.8	-1.2	-0.4
3S/1E 2N 2	80	U	Camp	20.1	343.1	19.1	344.1	20.5	342.7	1.0	-1.4	-0.4
3S/1E 2N 6	55	U	Amador	31.8	334.4	31.1	335.0	32.0	334.2	0.7	-0.9	-0.2
3S/1E 2P 3	380	L	Camp	85.0	286.7	70.8	300.9	102.0	269.8	14.2	-31.2	-17.0
3S/1E 2Q 1	45	U	Amador	20.5	349.5	18.3	351.6	20.3	349.6	2.2	-2.0	0.2
3S/1E 2R 1	33	U	Amador	19.4	356.9	16.0	360.3	20.2	356.1	3.4	-4.1	-0.8
3S/1E 3G 2	50	U	Camp	16.3	338.0	14.7	339.6	16.1	338.1	1.6	-1.4	0.1
3S/1E 4A 1	50	U	Camp	16.5	334.2	16.3	334.4	17.0	333.7	0.2	-0.7	-0.5
3S/1E 4J 5	47	U	Camp	14.7	330.6	14.3	330.9	15.6	329.6	0.4	-1.3	-0.9
3S/1E 4J 6	110	U	Camp	16.9	328.6	16.7	328.8	18.5	327.0	0.2	-1.8	-1.6
3S/1E 4Q 2	90	U	Amador	43.1	302.4	43.1	302.3	49.5	295.9	0.0	-6.4	-6.4
3S/1E 5K 6	75	U	Camp	13.0	333.1	12.2	333.9	13.6	332.5	0.8	-1.4	-0.6
3S/1E 5K 7	150	L	Camp	16.1	330.1	15.6	330.6	18.8	327.4	0.4	-3.2	-2.8
3S/1E 5L 3	40	U	Camp	13.2	326.3	12.6	326.8	12.7	326.7	0.5	-0.1	0.5
3S/1E 5P 6	35	U	Camp	10.6	326.0	10.0	326.7	11.1	325.5	0.7	-1.2	-0.5
3S/1E 6F 3	36	U	Dublin	5.1	324.8	4.4	325.4	5.2	324.6	0.7	-0.8	-0.1
3S/1E 6G 5	200	L	Dublin	10.2	322.0	8.5	323.7	10.4	321.8	1.8	-1.9	-0.2
3S/1E 6N 2	67	U	Dublin	NM	-	12.3	322.9	13.6	321.6	-	-1.2	-
3S/1E 7B 2	152	L	Dublin	9.7	318.1	8.4	319.4	9.9	317.9	1.3	-1.5	-0.2
3S/1E 7B12	70	U	Dublin	11.2	316.6	10.2	317.6	11.7	316.1	1.0	-1.5	-0.5
3S/1E 7G 7	55	U	Dublin	12.4	314.9	11.4	316.0	13.1	314.2	1.0	-1.8	-0.7
3S/1E 7J 5	50	U	Dublin	14.6	312.2	13.7	313.1	14.9	311.9	0.9	-1.2	-0.3
3S/1E 7M 2	88	U	Dublin	17.6	310.8	14.9	313.5	17.9	310.5	2.8	-3.0	-0.3
3S/1E 7R 8	52	U	Bernal	34.3	292.4	26.8	299.8	38.1	288.5	7.5	-11.3	-3.9
3S/1E 8B 1	148	U	Amador	41.2	297.1	37.8	300.5	46.8	291.5	3.4	-9.0	-5.6
3S/1E 8G 4	85	U	Amador	44.0	297.5	40.9	300.5	49.9	291.6	3.1	-8.9	-5.9
3S/1E 8H 9	240	L	Amador	49.9	289.2	NM	-	NM	-	-	-	-
3S/1E 8H10	440	L	Amador	47.2	292.0	NM	-	80.8	259.6	-	-	-32.4
3S/1E 8H11	720	D	Amador	63.8	275.3	NM	-	126.1	214.0	-	-	-61.3
3S/1E 8H13	800	D	Amador	85.4	253.6	39.4	299.6	119.0	219.9	46.0	-79.6	-33.7
3S/1E 8H18	745	L	Amador	69.3	272.6	44.0	298.0	NM	-	25.4	-	-
3S/1E 8K 1	99	U	Amador	40.1	292.3	33.0	299.4	49.6	282.8	7.1	-16.6	-9.5
3S/1E 8N 1	72	U	Bernal	32.7	291.0	24.0	299.7	35.8	287.9	8.8	-11.9	-3.1
3S/1E 9B 1	810	L	Amador	NM	-	51.0	298.2	NM	-	-	-	-
3S/1E 9G 1	160	U	Amador	51.9	300.4	51.5	300.9	59.6	292.8	0.5	-8.1	-7.6
3S/1E 9H10	145	U	Amador	51.2	301.7	51.5	301.4	58.6	294.3	-0.3	-7.1	-7.5
3S/1E 9H11	190	L	Amador	54.6	298.4	52.5	300.5	68.9	284.2	2.1	-16.3	-14.2
3S/1E 9J 7	505	U	Amador	56.1	301.3	56.1	301.3	64.1	293.2	0.0	-8.0	-8.0
3S/1E 9J 8	505	L	Amador	63.7	293.8	59.3	298.3	82.9	274.7	4.4	-23.6	-19.2
3S/1E 9J 9	505	L	Amador	74.6	283.1	62.7	295.0	101.1	256.5	11.9	-38.5	-26.6
3S/1E 9M 2	530	L	Amador	NM	-	NM	-	NM	-	-	-	-
3S/1E 9M 3	575	L	Amador	58.1	289.4	49.9	297.6	NM	-	8.2	-	-

TABLE 3.2-3

**Groundwater Monitoring Program
Semi-Annual Groundwater Levels in Feet
Spring and Fall 2009 Measurements**

Well Number	Well Depth	Aquifer	Sub-Basin	Fall 2008		Spring 2009		Fall 2009		Change in Elevation		
				Depth	GW Elev	Depth to Water	GW Elev	Depth to Water	GW Elev	Seasonal		Annual
				to Water						Fall 08 to Spring 09	Spring 09 to Fall 09	Fall 08 to Fall 09
2S/1E 32E 1	70	U	Camp	33.5	359.1	33.1	359.5	34.6	358.0	0.4	-1.5	-1.1
2S/1E 32N 1	44	U	Camp	16.1	344.7	15.9	344.9	17.3	343.5	0.1	-1.4	-1.2
3S/1E 9M 4	498	L	Amador	55.8	287.1	46.1	296.8	85.9	257.0	9.7	-39.9	-30.2
3S/1E 9P 5	105	U	Amador	51.1	298.3	49.0	300.4	60.1	289.3	2.2	-11.2	-9.0
3S/1E 9P 9	210	L	Amador	53.1	296.5	49.5	300.1	67.0	282.6	3.6	-17.5	-13.9
3S/1E 9P10	310	L	Amador	56.8	292.7	51.7	297.9	78.6	271.0	5.2	-26.9	-21.8
3S/1E 9P11	425	L	Amador	64.9	284.5	51.9	297.5	94.0	255.4	13.0	-42.1	-29.1
3S/1E 10A 1	253	L	Amador	NM	-	56.4	308.3	67.5	297.2	-	-11.1	-
3S/1E 10A 2	88	U	Amador	54.1	310.8	55.0	309.9	56.1	308.8	-0.9	-1.1	-2.0
3S/1E 10B 8	200	L	Amador	53.4	300.2	51.6	302.0	66.0	287.6	1.8	-14.4	-12.6
3S/1E 10B 9	294	L	Amador	57.8	295.7	53.3	300.2	75.2	278.3	4.5	-21.9	-17.4
3S/1E 10B10	600	L	Amador	67.6	285.9	57.1	296.4	93.1	260.4	10.5	-36.0	-25.5
3S/1E 10B11	810	D	Amador	83.6	270.0	53.7	299.9	111.3	242.3	29.9	-57.6	-27.7
3S/1E 10D 2	212	L	Amador	50.2	298.5	47.6	301.2	65.1	283.7	2.7	-17.5	-14.9
3S/1E 10D 3	322	L	Amador	54.8	293.8	49.2	299.4	74.5	274.1	5.6	-25.3	-19.7
3S/1E 10D 4	616	L	Amador	61.6	287.1	50.1	298.6	87.5	261.2	11.5	-37.4	-25.9
3S/1E 10D 5	790	D	Amador	83.6	265.1	49.0	299.7	112.1	236.5	34.6	-63.2	-28.6
3S/1E 10D 7	215	U	Amador	58.4	302.6	59.4	301.7	65.0	296.1	-0.9	-5.6	-6.6
3S/1E 10D 8	215	L	Amador	62.6	298.5	60.0	301.0	76.7	284.3	2.6	-16.7	-14.1
3S/1E 10K 2	591	L	Amador	64.5	294.2	NM	-	81.8	276.9	-	-	-17.3
3S/1E 10N 2	195	U	Amador	58.1	302.2	58.8	301.5	65.7	294.6	-0.7	-6.9	-7.6
3S/1E 10N 3	195	L	Amador	61.5	298.7	59.1	301.1	74.1	286.1	2.4	-15.0	-12.6
3S/1E 11B 1	43	U	Amador	31.3	338.0	29.5	339.9	32.7	336.7	1.8	-3.2	-1.4
3S/1E 11C 3	55	U	Amador	31.2	333.6	30.2	334.6	31.8	333.0	1.1	-1.6	-0.6
3S/1E 11G 1	120	U	Amador	54.0	317.6	52.9	318.7	63.5	308.2	1.1	-10.5	-9.4
3S/1E 11G 2	350	L	Amador	77.1	294.6	68.0	303.6	91.7	280.0	9.0	-23.6	-14.6
3S/1E 11G 3	590	L	Amador	85.0	286.6	71.3	300.3	108.4	263.3	13.7	-37.1	-23.3
3S/1E 11G 4	790	D	Amador	94.7	277.0	74.0	297.7	127.6	244.1	20.8	-53.7	-32.9
3S/1E 11M 2	700	L	Amador	69.8	296.2	63.1	302.9	85.9	280.1	6.7	-22.8	-16.1
3S/1E 11P 6	400	L	Amador	82.9	293.8	73.6	303.1	99.3	277.4	9.4	-25.7	-16.3
3S/1E 12A 2	69	U	Amador	37.6	363.7	38.5	362.8	43.0	358.4	-0.9	-4.5	-5.3
3S/1E 12G 1	73	U	Amador	58.3	346.2	60.3	344.2	63.5	341.0	-2.1	-3.2	-5.3
3S/1E 12H 4	270	L	Amador	112.7	295.1	101.6	306.2	122.3	285.5	11.1	-20.7	-9.6
3S/1E 12H 5	400	L	Amador	125.9	281.9	106.8	301.0	150.9	256.9	19.1	-44.2	-25.1
3S/1E 12H 6	480	L	Amador	127.1	280.7	108.0	299.8	154.6	253.2	19.1	-46.6	-27.5
3S/1E 12H 7	684	D	Amador	169.5	238.2	104.5	303.2	182.1	225.6	65.0	-77.6	-12.6
3S/1E 12K 2	300	L	Amador	110.3	296.0	99.4	306.9	115.7	290.6	10.9	-16.3	-5.4
3S/1E 12K 3	475	L	Amador	119.1	287.7	102.1	304.8	140.6	266.3	17.0	-38.5	-21.5
3S/1E 12K 4	475	D	Amador	133.4	273.3	103.5	303.2	156.4	250.3	29.9	-52.9	-23.0
3S/1E 13P 1	652	L	Amador	91.3	308.6	90.1	309.9	103.2	296.8	1.3	-13.1	-11.8
3S/1E 14B 1	435	L	Amador	97.9	286.3	85.7	298.5	116.0	268.2	12.2	-30.3	-18.1
3S/1E 14D 2	740	L	Amador	81.3	290.6	69.2	302.7	100.4	271.4	12.1	-31.2	-19.1
3S/1E 14K 2	508	L	Amador	99.9	291.8	88.9	302.9	116.4	275.3	11.0	-27.5	-16.5
3S/1E 15F 3	640	L	Amador	88.2	280.8	67.4	301.6	110.4	258.6	20.8	-43.1	-22.3
3S/1E 15J 3	196	L	Amador	59.6	285.0	42.9	301.7	85.8	258.8	16.7	-42.9	-26.2
3S/1E 15M 3	600	L	Amador	91.0	271.9	62.1	300.8	113.8	249.1	29.0	-51.7	-22.7
3S/1E 16A 2	510	L	AmWest	79.6	278.6	NM	-	93.0	265.2	-	-	-13.4
3S/1E 16A 4	603	L	Amador	78.8	280.5	60.1	299.2	114.0	245.3	18.7	-53.9	-35.2
3S/1E 16B 1	805	D	Amador	88.5	267.3	56.2	299.6	115.2	240.6	32.3	-59.0	-26.7
3S/1E 16C 2	190	L	Amador	54.7	289.7	45.3	299.1	74.6	269.8	9.3	-29.3	-20.0
3S/1E 16C 3	305	L	Amador	65.9	278.4	45.4	298.9	95.2	249.1	20.5	-49.8	-29.3
3S/1E 16C 4	375	L	Amador	72.8	271.4	44.4	299.7	104.3	239.9	28.4	-59.9	-31.5
3S/1E 16E 4	105	U	Amador	49.6	302.1	43.0	308.7	59.5	292.2	6.6	-16.5	-9.8
3S/1E 16L 2	151	U	Amador	55.0	300.9	NM	-	71.5	284.4	-	-	-16.5
3S/1E 16L 5	685	L	Amador	57.3	300.7	NM	-	73.8	284.2	-	-	-16.5
3S/1E 16L 7	647	L	Amador	NM	-	NM	-	80.1	274.4	-	-	-
3S/1E 16P 5	75	U	Amador	44.6	309.9	40.0	314.5	49.0	305.5	4.6	-9.0	-4.4
3S/1E 16R 1	239	L	Amador	70.7	291.8	57.5	305.1	92.7	269.8	13.3	-35.2	-22.0
3S/1E 17B 4	248	L	Amador	49.7	288.0	36.4	301.3	NM	-	13.3	-	-
3S/1E 17D 3	108	L	Bernal	41.1	284.1	25.8	299.3	39.3	285.8	15.2	-13.5	1.7
3S/1E 17D 4	236	L	Bernal	44.4	280.8	25.9	299.2	39.4	285.8	18.4	-13.4	5.0
3S/1E 17D 5	308	L	Bernal	43.3	281.9	25.9	299.2	39.2	286.0	17.4	-13.3	4.1
3S/1E 17D 6	408	L	Bernal	39.8	285.4	25.8	299.3	37.7	287.4	13.9	-11.9	2.0
3S/1E 17D 7	684	D	Bernal	22.2	303.0	21.1	304.0	22.8	302.3	1.1	-1.7	-0.7
3S/1E 17D10	425	L	Bernal	46.1	282.1	32.0	296.2	42.0	286.2	14.1	-10.0	4.1
3S/1E 17D11	603	L	Bernal	38.3	286.5	25.6	299.2	37.1	287.8	12.7	-11.5	1.2
3S/1E 17D12	315	L	Bernal	48.9	279.0	29.7	298.2	43.3	284.6	19.2	-13.6	5.6
3S/1E 18A 5	454	L	Bernal	48.8	280.3	NM	-	43.9	285.1	-	-	4.8
3S/1E 18A 6	500	L	Bernal	NM	-	29.0	297.8	42.4	284.4	-	-13.4	-
3S/1E 18E 4	83	U	Bernal	30.1	290.2	21.7	298.5	32.7	287.6	8.3	-10.9	-2.6
3S/1E 18J 2	71	U	Bernal	32.1	290.8	23.3	299.6	34.7	288.1	8.8	-11.5	-2.7
3S/1E 18N 1	708	L	Bernal	33.8	285.6	22.6	296.8	33.9	285.5	11.2	-11.3	-0.1

TABLE 3.2-3

**Groundwater Monitoring Program
Semi-Annual Groundwater Levels in Feet
Spring and Fall 2009 Measurements**

Well Number	Well Depth	Aquifer	Sub-Basin	Fall 2008		Spring 2009		Fall 2009		Change in Elevation		
				Depth to Water	GW Elev	Depth to Water	GW Elev	Depth to Water	GW Elev	Seasonal		Annual
										Fall 08 to Spring 09	Spring 09 to Fall 09	
2S/1E 32E 1	70	U	Camp	33.5	359.1	33.1	359.5	34.6	358.0	0.4	-1.5	-1.1
2S/1E 32N 1	44	U	Camp	16.1	344.7	15.9	344.9	17.3	343.5	0.1	-1.4	-1.2
3S/1E 19A10	331	L	Bernal	50.1	286.9	42.0	295.1	NM	-	8.1	-	-
3S/1E 19A11	330	L	Bernal	45.3	289.0	36.7	297.5	47.1	287.2	8.6	-10.4	-1.8
3S/1E 19C 4	78	U	Bernal	30.9	291.4	21.4	300.9	33.6	288.6	9.5	-12.3	-2.8
3S/1E 19K 1	58	U	Bernal	33.1	288.4	22.5	299.0	35.0	286.5	10.6	-12.5	-1.9
3S/1E 20B 2	500	L	Bernal	NM	-	NM	-	NM	-	-	-	-
3S/1E 20C 3	110	L	Bernal	NM	-	57.5	282.8	NM	-	-	-	-
3S/1E 20C 7	153	U	Bernal	44.5	291.2	38.8	299.8	50.8	287.9	8.7	-12.0	-3.3
3S/1E 20J 4	72	U	Bernal	37.5	294.1	30.8	300.8	40.3	291.3	6.7	-9.5	-2.8
3S/1E 20M11	71	U	Bernal	31.8	293.9	22.7	303.0	34.6	291.1	9.1	-11.9	-2.8
3S/1E 20Q 2	65	U	Bernal	20.2	305.6	17.3	308.6	21.2	304.6	2.9	-4.0	-1.0
3S/1E 22D 2	72	U	Amador	43.1	325.0	39.3	328.8	53.1	315.0	3.8	-13.8	-10.0
3S/1E 23J 1	120	U	Amador	73.1	355.2	74.8	353.5	78.5	349.7	-1.7	-3.7	-5.4
3S/1E 24Q 1	440	L	Amador	102.7	324.9	87.9	339.6	163.8	263.7	14.7	-75.9	-61.2
3S/1E 25C 3	146	U	Amador	80.9	373.3	80.8	373.4	84.1	370.0	0.1	-3.3	-3.2
3S/1E 29M 4	57	U	Castle	21.6	289.3	14.0	296.9	24.5	286.5	7.6	-10.5	-2.9
3S/1E 29P 2	42	U	Bernal	28.0	274.8	26.8	276.1	28.4	274.5	1.3	-1.6	-0.4
3S/1W 1B 9	162	L	Dublin	14.4	320.2	10.4	324.2	14.3	320.3	4.0	-3.9	0.1
3S/1W 1B10	414	L	Dublin	25.0	309.6	21.9	312.7	24.4	310.2	3.1	-2.5	0.5
3S/1W 1B11	560	L	Dublin	49.1	285.1	41.1	293.2	48.3	285.9	8.1	-7.3	0.8
3S/1W 1J 4	15	U	Dublin	NM	-	NM	-	4.8	322.3	-	-	-
3S/1W 1J 5	15	U	Dublin	NM	-	NM	-	3.6	325.0	-	-	-
3S/1W 1J 6	15	U	Dublin	NM	-	NM	-	3.8	325.3	-	-	-
3S/1W 2A 2	47	U	Dublin	26.9	342.6	23.8	345.6	26.9	342.5	3.1	-3.1	0.0
3S/1W 12B 2	40	U	Dublin	21.5	321.4	19.8	323.1	21.6	321.3	1.7	-1.8	-0.1
3S/1W 12J 1	62	U	Dublin	18.5	310.8	15.7	313.6	18.6	310.7	2.8	-2.9	-0.1
3S/1W 13J 1	48	U	Castle	29.5	314.5	23.6	320.3	28.8	315.2	5.8	-5.1	0.7
3S/2E 1F 2	69	U	Spring	21.3	551.7	20.7	552.3	21.4	551.6	0.6	-0.7	-0.1
3S/2E 2B 2	46	U	Spring	9.3	530.2	8.6	530.9	9.6	529.8	0.7	-1.0	-0.3
3S/2E 3A 1	54	U	Spring	4.9	512.7	3.9	513.8	4.6	513.1	1.1	-0.7	0.4
3S/2E 3K 3	60	U	Mocho I	13.3	509.6	12.9	510.0	13.2	509.7	0.4	-0.3	0.1
3S/2E 5N 1	210	L	Mocho II	44.8	395.3	36.5	403.5	46.0	394.0	8.3	-9.5	-1.2
3S/2E 7C 2	49	U	Mocho II	29.9	391.0	27.9	393.0	31.0	389.9	2.0	-3.1	-1.1
3S/2E 7H 2	54	U	Mocho II	37.1	405.8	31.1	411.8	37.5	405.4	6.0	-6.4	-0.4
3S/2E 7N 1	130	U	Amador	118.2	302.9	90.0	331.1	72.8	348.3	28.2	17.2	45.4
3S/2E 7P 3	510	L	Amador	172.0	259.5	NM	-	220.0	211.5	-	-	-48.0
3S/2E 7R 3	583	L	Mocho II	107.0	339.0	NM	-	221.0	225.0	-	-	-114.0
3S/2E 8F 1	576	L	Mocho II	72.0	384.2	69.0	387.2	98.0	358.2	3.0	-29.0	-26.0
3S/2E 8G 1	465	L	Mocho II	70.0	395.1	57.0	408.1	69.0	396.1	13.0	-12.0	1.0
3S/2E 8H 2	46	U	Mocho II	39.9	429.7	38.6	431.0	39.3	430.3	1.3	-0.7	0.6
3S/2E 8H 3	195	L	Mocho II	NM	-	NM	-	85.7	391.6	-	-	-
3S/2E 8H 4	385	L	Mocho II	NM	-	NM	-	172.8	304.1	-	-	-
3S/2E 8K 2	74	U	Mocho II	48.3	416.2	39.6	424.9	48.1	416.3	8.7	-8.5	0.1
3S/2E 8N 2	526	L	Mocho II	NM	-	NM	-	91.0	362.6	-	-	-
3S/2E 8P 1	273	L	Mocho II	59.0	409.2	NM	-	81.0	387.2	-	-	-22.0
3S/2E 9L 1	516	L	Mocho II	73.0	426.4	57.0	442.4	96.0	403.4	16.0	-39.0	-23.0
3S/2E 9P 1	515	L	Mocho II	124.0	377.3	97.0	404.3	128.0	373.3	27.0	-31.0	-4.0
3S/2E 9Q 1	572	L	Mocho II	98.0	420.2	64.0	454.2	NM	-	34.0	-	-
3S/2E 9Q 4	80	U	Mocho II	38.6	465.8	28.7	475.7	39.1	465.3	9.9	-10.4	-0.5
3S/2E 10F 3	45	U	Mocho I	13.7	521.1	13.2	521.7	14.0	520.9	0.6	-0.8	-0.3
3S/2E 10Q 1	44	U	Mocho II	26.7	528.7	25.1	530.3	26.9	528.5	1.6	-1.8	-0.2
3S/2E 10Q 2	325	L	Mocho II	33.4	515.9	29.3	520.0	34.5	514.9	4.1	-5.2	-1.0
3S/2E 11C 1	66	U	Mocho I	24.9	532.2	24.0	533.1	25.6	531.5	0.9	-1.6	-0.7
3S/2E 14B 1	300	L	Mocho I	60.5	532.9	60.1	533.2	61.5	531.9	0.4	-1.4	-1.0
3S/2E 15E 2	192	L	Mocho II	56.8	492.9	43.2	506.5	50.7	499.0	13.6	-7.5	6.1
3S/2E 15Q 6	301	L	Mocho II	68.6	508.7	62.9	514.4	69.3	508.0	5.6	-6.3	-0.7
3S/2E 15R17	63	U	Mocho II	13.4	579.0	9.9	582.5	12.4	580.0	3.5	-2.5	1.0
3S/2E 15R18	138	L	Mocho II	15.6	576.9	13.7	578.8	16.3	576.2	1.9	-2.6	-0.7
3S/2E 16A 3	240	L	Mocho II	49.1	478.0	39.3	487.8	48.9	478.1	9.9	-9.7	0.2
3S/2E 16B 1	410	L	Mocho II	110.0	410.2	71.0	449.2	116.0	404.2	39.0	-45.0	-6.0
3S/2E 16C 1	584	L	Mocho II	132.0	379.0	94.0	417.0	168.0	343.0	38.0	-74.0	-36.0
3S/2E 16E 4	45	U	Mocho II	34.4	471.8	19.0	487.3	18.2	488.1	15.5	0.8	16.3
3S/2E 17E 2	94	U	Mocho II	33.4	434.3	30.1	437.6	18.3	449.4	3.3	11.8	15.1
3S/2E 18B 1	497	L	Amador	170.0	268.6	137.0	301.6	168.0	270.6	33.0	-31.0	2.0
3S/2E 18E 1	134	U	Amador	93.4	330.5	78.8	345.1	51.6	372.3	14.6	27.2	41.8
3S/2E 19D 7	180	L	Amador	77.8	337.3	73.8	341.3	86.9	328.2	4.0	-13.1	-9.1
3S/2E 19D 8	260	L	Amador	78.7	336.3	74.2	340.8	88.0	327.0	4.5	-13.8	-9.3
3S/2E 19D 9	390	L	Amador	137.1	277.9	106.0	309.0	158.3	256.7	31.2	-52.4	-21.2
3S/2E 19D10	470	L	Amador	134.7	280.2	92.6	322.3	145.5	269.4	42.1	-52.9	-10.8
3S/2E 20M 1	184	L	Amador	NM	-	58.3	420.5	64.0	414.8	-	-5.6	-
3S/2E 22B 1	32	U	Mocho II	Dry	-	15.1	570.8	12.9	573.0	-	2.3	-

TABLE 3.2-3

**Groundwater Monitoring Program
Semi-Annual Groundwater Levels in Feet
Spring and Fall 2009 Measurements**

Well Number	Well Depth	Aquifer	Sub-Basin	Fall 2008		Spring 2009		Fall 2009		Change in Elevation		
				Depth to Water	GW Elev	Depth to Water	GW Elev	Depth to Water	GW Elev	Seasonal		Annual
										Fall 08 to Spring 09	Spring 09 to Fall 09	
2S/1E 32E 1	70	U	Camp	33.5	359.1	33.1	359.5	34.6	358.0	0.4	-1.5	-1.1
2S/1E 32N 1	44	U	Camp	16.1	344.7	15.9	344.9	17.3	343.5	0.1	-1.4	-1.2
3S/2E 23E 1	40	U	Mocho II	17.5	595.9	16.9	596.5	17.0	596.3	0.6	-0.1	0.4
3S/2E 23E 2	110	L	Mocho II	16.1	597.1	15.1	598.2	15.3	597.9	1.1	-0.2	0.8
3S/2E 24A 1	46	U	Mocho I	28.0	689.7	28.6	689.2	27.4	690.3	-0.6	1.2	0.6
3S/2E 26J 2	44	U	Mocho II	11.6	678.3	5.8	684.1	10.2	679.8	5.8	-4.4	1.4
3S/2E 29F 4	36	U	Amador	8.7	448.8	8.8	448.8	8.6	448.9	0.0	0.1	0.1
3S/2E 30D 2	44	U	Amador	21.0	410.6	21.1	410.5	20.9	410.7	-0.1	0.2	0.0
3S/2E 30G 1	390	L	Amador	49.5	404.2	NM	-	49.6	404.1	-	-	-0.2
3S/2E 33G 1	17	U	Amador	8.9	502.6	9.0	502.6	8.8	502.7	-0.1	0.2	0.1
3S/3E 7M 2	199	L	Spring	44.7	583.9	44.0	584.7	44.5	584.2	0.8	-0.5	0.3
MA-C 1	0	U	Amador	0.0	374.0	0.0	376.0	0.0	375.8	2.0	-0.2	1.8
MA-K 15	0	U	Amador	0.0	327.0	0.0	329.7	0.0	329.9	2.6	0.2	2.9
MA-K 18	0	U	Amador	0.0	346.0	0.0	345.9	0.0	346.0	-0.1	0.1	0.0
MA-K 28	0	U	Amador	0.0	300.0	0.0	299.8	0.0	293.2	-0.2	-6.6	-6.8
MA-K 37	0	U	Amador	0.0	300.0	0.0	299.8	0.0	293.2	-0.2	-6.6	-6.8
MA-P 10	0	U	Amador	0.0	372.0	0.0	372.5	0.0	372.8	0.5	0.3	0.8
MA-P 11	0	U	Amador	0.0	350.0	0.0	349.6	0.0	349.7	-0.4	0.1	-0.3
MA-P 12	0	U	Amador	0.0	346.0	0.0	346.1	0.0	346.0	0.1	0.0	0.0
MA-P 13	0	U	Amador	0.0	327.0	0.0	329.7	0.0	329.9	2.6	0.2	2.9
MA-P 27	0	U	Amador	0.0	317.0	0.0	314.4	0.0	309.4	-2.6	-5.0	-7.6
MA-P 28	0	U	Amador	0.0	412.0	0.0	409.8	0.0	404.4	-2.2	-5.4	-7.6
MA-P 40	0	U	Amador	0.0	328.0	0.0	328.4	0.0	323.4	0.4	-5.0	-4.6
MA-P 41	0	U	Amador	0.0	382.0	0.0	377.8	0.0	383.8	-4.2	6.0	1.8
MA-P 42	0	U	Amador	0.0	280.0	0.0	276.6	0.0	277.3	-3.4	0.7	-2.7
MA-P 44	0	U	Amador	0.0	323.0	0.0	323.1	0.0	323.8	0.1	0.7	0.8
MA-P 45	0	U	Amador	NM	-	0.0	323.1	0.0	323.8	-	0.7	-
MA-R 3	0	U	Amador	0.0	330.0	0.0	330.0	0.0	329.0	0.0	-1.0	-1.0
MA-R 4	0	U	Amador	0.0	305.0	0.0	306.7	0.0	306.7	1.7	0.0	1.7
MA-R 8	0	U	Amador	NM	-	NM	-	0.0	354.0	-	-	-

U Upper
 L Lower
 NM Not measured
 DRY Well was dry
 OBS Well was obstructed
 - Not applicable
 Key Well

TABLE 3.2-4
ZONE 7 WATER AGENCY
WATER QUALITY RESULTS FOR GROUNDWATER SAMPLES
2009 Water Year

SITE ID	DATE	TEMP. °C	EC umhos/cm	pH	Mineral Constituents (mg/L)									Select Metals (mg/L)				TDS mg/L	Hard mg/L
					Ca	Mg	Na	K	HCO3	SO4	Cl	NO3	SiO2	B	As	Fe	Mn		
2S/1E 32E 1	17-Mar-09	20.0	1566	6.9	172	39	136	1.2	666	30	174	17.98	42.8	0.10	0.0035	<0.05	<0.01	941	590
2S/1E 32Q 1	17-Mar-09	19.5	1524	7.0	125	40	167	1.6	553	66	193	20.64	28.5	0.74	0.0021	<0.05	<0.01	914	476
2S/1E 33L 1	17-Mar-09	19.2	1276	7.3	104	22	152	1.8	463	46	156	19.22	27.4	0.48	0.0022	<0.05	<0.01	757	348
2S/1E 33P 2	17-Mar-09	17.9	2234	7.2	168	81	224	2.2	668	65	386	26.88	23.3	0.95	0.002	<0.05	<0.01	1306	755
2S/1E 33R 1	13-Jan-09	18.9	870	7.5	72	16	73	1.2	283	16	120	20.37	26.7	0.11	0.0018	<0.05	0.056	485	245
2S/1W 15F 1	15-Apr-09	18.2	1612	7.1	164	59	86	1.0	658	40	184	<0.44	21.1	0.24	0.0025	<0.05	2.1	880	654
2S/1W 26C 2	11-Feb-09	17.9	903	6.9	122	26	40	1.9	452	26	39	32.02	30.6	0.11	0.0043	0.6	1.6	540	411
2S/1W 36E 3	10-Feb-09	17.7	1047	7.2	126	19	52	0.6	373	97	82	24.80	37.0	0.12	0.0047	<0.05	0.37	623	396
2S/1W 36F 1	10-Feb-09	17.1	783	7.5	62	19	80	1.0	412	14	38	<0.44	22.0	0.23	0.0078	<0.05	0.23	440	234
2S/1W 36F 2	10-Feb-09	17.3	940	7.7	43	13	144	0.6	401	<1.0	97	<0.44	24.0	0.61	0.15	0.19	0.2	521	160
2S/2E 27P 2	12-May-09	18.9	5217	7.7	88	41	825	1.7	203	<1.0	1495	<0.44	27.4	26	<0.001	1.1	0.071	2579	389
2S/2E 28D 2	11-Feb-09	16.1	1523	7.5	80	40	181	1.9	220	31	252	174.49	29.1	0.78	0.0032	<0.05	<0.01	898	366
2S/2E 28J 2	12-May-09	20.9	1130	8.4	4	3	210	0.4	363	61	85	<0.44	20.0	1.43	<0.001	<0.05	0.012	571	25
2S/2E 28Q 1	12-May-09	19.0	1185	8.2	38	31	118	1.5	276	64	139	0.84	27.6	0.52	0.0052	0.2	0.54	560	225
2S/2E 32K 2	12-May-09	19.9	1367	7.7	49	37	144	1.6	356	69	156	10.98	39.8	0.52	0.0059	0.055	0.024	684	274
2S/2E 34E 1	12-May-09	22.1	1652	8.1	15	15	265	0.5	356	88	234	<0.44	27.0	2.18	0.019	0.074	0.13	824	97
2S/2E 34Q 2	12-May-09	21.3	1858	7.5	74	62	204	1.0	268	132	380	4.74	30.8	3.11	0.0028	<0.05	0.065	1021	438
3S/1E 1F 2	12-Nov-08	19.4	1314	6.7	134	31	140	0.4	517	30	159	36.80	45.4	0.22	0.0046	<0.05	<0.01	831	462
3S/1E 1H 3	1-Nov-08		1704		60	36	250	3		80	230		29	1.51				1017	
3S/1E 1H 3	11-Feb-09		1718		60	38	240	3.3		79	245		32.75	1.3				1012	
3S/1E 1H 3	5-May-09		1719		61	38	240	3.4		76	264		35	1.31				1021	
3S/1E 1H 3	10-Aug-09		1954		61	36	230	2.9		84	225		32	1.21				982	
3S/1E 1J 3	28-Oct-08	21.0	722	7.8	53	45	41	2.1	335	40	43	11.47	24.6	0.42	<0.001	<0.05	<0.01	427	318
3S/1E 1L 1	12-Nov-08	20.8	2267	7.3	130	51	317	1.3	527	77	444	34.32	28.2	4.67	0.0042	<0.05	<0.01	1343	533
3S/1E 1P 2	1-Nov-08		1704		60	36	250	3		80	230		29	1.51				1017	
3S/1E 1P 2	10-Feb-09	17.6	1430	7.3	67	38	170	1.6	374	90	221	5.18	20.8	2.6	0.0057	<0.05	<0.01	798	326
3S/1E 1P 2	11-Feb-09		1413		60	42	160	3.7		84	235		23	2.8				822	
3S/1E 1P 2	5-May-09		1422		60	42	170	3.6		82	245		24	2.98				837	
3S/1E 1P 2	10-Aug-09		1638		59	41	170	3		88	224		24	2.3				801	
3S/1E 1R 2	1-Nov-08		1704		60	36	250	3		80	230		29	1.51				1017	
3S/1E 1R 2	11-Feb-09		1099		63	75	69	3.9		55	111		28	1.12				646	
3S/1E 1R 2	5-May-09		1140		68	79	69	3.8		51	124		29	1.14				681	
3S/1E 1R 2	10-Aug-09		1315		63	72	67	3.1		62	125		26	1				690	
3S/1E 2J 2	12-Nov-08	18.8	2853	7.2	140	64	405	1.2	538	180	606	14.75	25.0	4.68	0.0038	<0.05	<0.01	1701	613
3S/1E 2J 3	12-Nov-08	20.3	1412	7.3	63	46	193	2.2	427	19	225	26.13	28.9	0.59	0.0038	<0.05	<0.01	814	348
3S/1E 2K 2	12-Nov-08	19.8	875	7.9	15	12	184	1.0	498	27	14	9.30	21.4	1.13	0.0073	<0.05	<0.01	532	87
3S/1E 2M 3	12-Nov-08	19.5	2267	7.3	86	45	398	1.8	748	84	333	58.90	26.7	2.75	0.0038	<0.05	<0.01	1403	399
3S/1E 2N 2	12-Nov-08	19.0	1926	7.4	82	42	297	1.1	526	115	305	23.74	19.4	2.95	0.003	0.089	0.043	1145	379
3S/1E 2N 6	12-Nov-08	18.0	1492	7.3	67	40	233	1.0	427	89	234	1.02	19.0	3.07	0.0037	<0.05	0.046	895	330
3S/1E 2P 3	12-Nov-08	21.3	757	7.8	48	36	62	1.8	279	39	69	21.61	25.7	0.49	0.0023	<0.05	<0.01	442	267
3S/1E 2Q 1	12-Nov-08	17.3	2081	7.4	94	57	296	1.4	480	170	343	21.83	21.3	3.68	0.004	<0.05	<0.01	1242	467
3S/1E 2R 1	1-Nov-08		1503		71	52	170	3		67	208		18	2.83				883	
3S/1E 2R 1	11-Feb-09		1490		67	53	170	2.7		64	207		28	2.9				860	
3S/1E 2R 1	5-May-09		1520		72	57	170	2.8		63	218		27	2.7				878	
3S/1E 2R 1	10-Aug-09		1721		67	52	160	2.3		70	203		25	2.28				800	
3S/1E 3G 2	12-Nov-08	18.8	1614	7.3	65	35	309	1.1	782	25	169	2.52	22.7	1.54	0.0054	<0.05	0.31	1016	308
3S/1E 4A 1	13-Jan-09	19.1	1290	7.3	107	27	118	1.0	410	46	177	1.20	24.2	0.40	0.0019	<0.05	0.011	704	379
3S/1E 4J 5	13-Jan-09	18.1	4778	7.5	85	113	856	0.9	841	293	1015	60.67	18.0	15.2	0.0074	<0.05	0.36	2858	675
3S/1E 4J 6	13-Jan-09	17.8	1939	7.3	116	41	190	1.9	442	107	337	9.34	24.2	1.75	0.0018	<0.05	0.45	1045	460
3S/1E 4Q 2	18-Mar-09	18.3	2143	7.4	91	62	278	1.2	484	88	396	8.50	22.9	3.8	0.0034	<0.05	0.013	1187	485
3S/1E 5K 6	17-Mar-09	19.8	2273	7.7	158	61	278	1.9	510	230	327	34.63	21.6	1.9	0.0021	<0.05	0.73	1365	648

TABLE 3.2-4
ZONE 7 WATER AGENCY
WATER QUALITY RESULTS FOR GROUNDWATER SAMPLES
2009 Water Year

SITE ID	DATE	TEMP.	EC	pH	Mineral Constituents (mg/L)									Select Metals (mg/L)				TDS	Hard
		°C	umhos/cm		Ca	Mg	Na	K	HCO3	SO4	Cl	NO3	SiO2	B	As	Fe	Mn	mg/L	mg/L
3S/1E 5K 7	17-Mar-09	19.5	1028	7.9	52	24	150	1.1	366	126	67	<0.44	25.3	1.0	0.012	<0.05	0.11	628	229
3S/1E 5L 3	17-Mar-09	20.3	1765	7.6	96	53	242	0.8	503	245	192	2.97	22.0	1.2	0.0034	<0.05	1.1	1103	459
3S/1E 5P 6	17-Mar-09	20.8	3581	7.3	226	142	397	1.2	418	602	687	20.37	27.4	1.7	0.0028	<0.05	0.54	2309	1150
3S/1E 6F 3	10-Feb-09	19.4	4810	7.0	306	119	538	2.7	590	679	947	<0.44	22.9	3.0	0.0048	0.056	5.	2905	1256
3S/1E 6N 2	5-Nov-08		25660	6.7	2032	1154	2430	5.7	329	905	9815	<0.44	16.6	0.62	0.014	0.21	44.2	16520	9830
3S/1E 6N 3	5-Nov-08		9858	7.1	670	280	1030	3.6	212	113	3335	<0.44	18.2	0.59	0.0063	0.087	7.4	5554	2828
3S/1E 6N 6	28-Oct-08		21580	6.8	1496	923	2290	4.8	171	282	8290	<0.44	19.3	0.70	<0.005	0.19	19.9	13389	7540
3S/1E 7B 2	10-Feb-09	18.2	776	8.9	15	4	140	1.5	225	28	99	<0.44	10.9	0.92	0.006	<0.05	0.036	426	54
3S/1E 7B12	10-Feb-09	18.0	13560	7.1	386	327	2260	3.5	330	1520	3850	<0.44	19.6	2.1	0.0084	0.066	6.6	8529	2312
3S/1E 7D 1	28-Oct-08		5517	7.0	544	243	285	3.6	367	119	1675	<0.44	30.2	0.42	0.014	5.6	8.	3081	2360
3S/1E 7D 3	28-Oct-08		16710	6.8	1024	646	2090	5.5	373	632	5795	<0.44	23.8	0.80	0.018	1.9	21.3	10400	5220
3S/1E 7D 3	29-Oct-08	25.5	16990	6.8	1116	680	1980	5.5	378	736	6040	<0.44	24.2	0.75	0.014	1.4	23.5	10768	5590
3S/1E 7D 4	29-Oct-08	20.5	43690	6.7	900	2807	8160	6.3	807	8268	15130	<0.44	13.7	7.17	<0.01	0.11	22.6	35682	13800
3S/1E 7G 7	10-Feb-09	19.4	17450	7.0	413	462	3070	3.6	458	2530	4910	<0.44	18.0	4.2	0.0084	1.05	10.2	11632	2934
3S/1E 7J 5	30-Oct-08				134	107	365	1.84		464	179		23.3	6.24	0.003	<0.008	0.308		780
3S/1E 7J 5	30-Oct-08		2690	7.3	134	107	365	1.84		464	179		23.3	6.24	0.003	<0.008	0.308		780
3S/1E 7J 5	30-Oct-08	19.5	2703	7.2	134	107	365	1.84		464	179		23.3	6.24	0.003	<0.008	0.308		780
3S/1E 7J 5	14-Apr-09	18.8	2519	7.2	130	99	361	1.7	940	442	194	<0.44	26.1	6.06	0.003	<0.05	0.26	1718	732
3S/1E 7M 2	10-Feb-09	20.0	960	8.1	76	21	89	1.5	369	69	65	<0.44	17.8	0.26	0.0057	<0.05	0.22	525	277
3S/1E 7R 8	30-Oct-08	15.5	2933	6.9	225	182	234	2.72	969	599	254	<0.44	26.8	3.28	0.0014	<0.008	0.0462	2011	1300
3S/1E 7R 8	30-Oct-08	15.5	2970	7	225	182	234	2.72	969	599	254	<0.44	26.8	3.28	0.0014	<0.008	0.0462	2011	1300
3S/1E 7R 8	14-Apr-09	18.6	2794	6.9	234	189	219	2.5	1086	587	240	<0.44	7.9	3.24	0.0015	<0.05	0.063	2015	1362
3S/1E 8B 1	18-Mar-09	17.4	1870	7.7	82	63	233	1.2	389	203	294	<0.44	21.8	2.7	0.0028	1.6	0.12	1091	465
3S/1E 8G 4	17-Mar-09	19.8	3313	7.2	165	148	426	2.4	755	610	435	12.98	30.8	5.5	0.0031	<0.05	0.012	2203	1020
3S/1E 8H13	18-Mar-09	19.4	1896	7.4	146	109	102	3.3	656	121	217	26.44	28.7	1.1	0.0017	<0.05	<0.01	1078	814
3S/1E 8H18R	11-Dec-08	19.5	1355	7.7	106	66	90	2.3	484	88	147	21.12	25.9	0.66	0.0024	<0.01	<0.01	787	538
3S/1E 8H18R	15-Jul-09	21.7	1366	7.5	111	67	91	3.0	493	91	155	20.37	26.5	0.57	0.0022	<0.005	<0.01	809	554
3S/1E 8H18R	24-Sep-09	21.1	1239	7.5	98	59	84	2.9	451	95	130	18.87	28.0	0.56	0.0016	<0.005	<0.01	739	488
3S/1E 8K 1	14-Apr-09	16.8	1768	7.4	154	119	89	2.6	775	186	146	26.17	27.0	0.95	0.0016	<0.05	<0.01	1133	875
3S/1E 8N 1	14-Apr-09	17.6	1953	7.2	147	104	144	2.5	760	203	158	11.20	29.1	1.66	0.0012	<0.05	<0.01	1174	796
3S/1E 9B 1	10-Dec-08	20.0	717	7.8	48	38	43	1.2	285	36	53	17.01	24.6	0.40	0.0017	<0.01	<0.01	403	274
3S/1E 9B 1	8-Jun-09	20.7	647	7.9	42	33	47	2.0	263	31	42	14.92	26.1	0.22	0.0014	<0.005	<0.01	369	241
3S/1E 9B 1	24-Sep-09	19.7	713	7.7	48	37	45	1.8	289	35	51	17.85	26.7	0.30	0.0012	<0.005	<0.01	406	274
3S/1E 9G 1	13-Jan-09	18.2	1138	6.9	61	52	95	2.0	369	73	146	5.05	23.1	1.17	<0.001	0.22	0.06	639	364
3S/1E 9J 7	13-Jan-09	19.6	1004	7.3	63	46	70	2.0	329	57	126	1.11	18.4	0.86	<0.001	<0.05	<0.01	546	348
3S/1E 9J 8	13-Jan-09	18.1	779	7.3	76	36	31	1.7	307	43	65	14.30	19.7	0.31	<0.001	<0.05	<0.01	438	338
3S/1E 9J 9	13-Jan-09	18.6	672	7.2	48	44	21	1.6	277	35	53	12.58	25.0	0.23	<0.001	<0.05	<0.01	377	303
3S/1E 9M 2R	10-Dec-08	17.5	1181	7.6	73	63	72	1.7	414	72	128	29.14	25.3	1.11	0.0014	<0.01	<0.01	669	442
3S/1E 9M 2R	10-Jun-09	18.1	1118	7.6	73	64	86	2.7	412	70	124	28.92	26.5	0.90	<0.001	0.011	<0.01	679	446
3S/1E 9M 2R	25-Sep-09	18.1	1128	7.5	70	60	77	2.1	400	68	110	26.66	26.3	0.88	0.001	<0.005	<0.01	638	420
3S/1E 9M 3R	16-Jul-09	17.5	748	7.4	82	42	47	1.6	326	56	86	15.94	21.0	0.36	0.0011	<0.005	<0.01	513	378
3S/1E 9M 3R	25-Sep-09	17.7	938	7.4	84	46	47	1.8	342	61	90	15.59	21.6	0.43	<0.001	<0.005	<0.01	536	398
3S/1E 9M 4R	12-Nov-08	18.9	1405	8.1	94	70	115	2.4	453	100	180	20.46	25.3	0.96	<0.001	<0.01	<0.01	835	524
3S/1E 9M 4R	11-Dec-08	17.3	1492	7.7	102	78	110	2.3	495	111	182	20.50	25.0	1.08	0.0016	<0.01	<0.01	877	577
3S/1E 9M 4R	11-Jun-09	18.4	1562	7.7	114	85	105	1.5	538	116	182	21.83	27.6	1.01	0.0013	<0.005	<0.01	920	632
3S/1E 9M 4R	24-Sep-09	19.5	1523	7.4	110	79	98	2.8	526	109	168	22.19	28.2	1.02	0.0017	0.0067	<0.01	877	601
3S/1E 9P 5	18-Mar-09	17.9	1320	7.0	124	65	65	2.6	458	79	154	19.62	19.3	0.77	<0.001	<0.05	<0.01	754	575
3S/1E 9P 9	18-Mar-09	17.8	812	7.3	65	40	59	1.8	286	67	98	4.65	22.0	0.71	<0.001	<0.05	<0.01	499	327
3S/1E 9P10	18-Mar-09	17.9	760	7.4	69	31	40	1.5	254	51	77	7.44	20.1	0.44	<0.001	<0.05	<0.01	423	301
3S/1E 9P11	18-Mar-09	18.2	755	7.5	52	49	28	1.5	303	38	58	16.70	26.1	0.32	0.0011	<0.05	<0.01	419	332
3S/1E 10A 2	12-May-09	18.2	1846	7.0	85	84	226	2.0	600	122	307	31.49	28.2	2.80	0.001	<0.05	<0.01	1181	559

TABLE 3.2-4
ZONE 7 WATER AGENCY
WATER QUALITY RESULTS FOR GROUNDWATER SAMPLES
2009 Water Year

SITE ID	DATE	TEMP.	EC	pH	Mineral Constituents (mg/L)									Select Metals (mg/L)				TDS	Hard
		°C	umhos/cm		Ca	Mg	Na	K	HCO3	SO4	Cl	NO3	SiO2	B	As	Fe	Mn	mg/L	mg/L
3S/1E 10B 8	14-Jan-09	17.3	1414	7.4	72	71	110	1.9	475	77	152	41.98	28.9	1.72	0.0017	<0.05	<0.01	790	473
3S/1E 10B 9	14-Jan-09	17.8	1079	7.7	66	58	61	2.0	362	58	117	30.42	25.3	0.80	0.0015	<0.05	<0.01	598	403
3S/1E 10B10	14-Jan-09	17.9	778	7.4	50	46	38	1.6	290	41	71	16.70	25.9	0.39	<0.001	<0.05	<0.01	434	312
3S/1E 10B11	14-Jan-09	17.4	710	7.5	45	35	46	1.7	254	38	60	19.97	26.5	0.39	0.002	<0.05	<0.01	398	258
3S/1E 10D 2	14-Jan-09	17.7	1316	7.5	70	59	132	1.8	454	71	153	34.94	26.3	1.60	0.0023	<0.05	0.024	773	419
3S/1E 10D 3	14-Jan-09	18.0	968	7.7	63	52	66	1.8	336	48	103	31.00	24.6	0.58	0.0018	<0.05	<0.01	556	370
3S/1E 10D 4	14-Jan-09	17.9	798	7.6	48	37	61	1.4	295	41	75	13.55	26.3	0.50	0.0017	<0.05	<0.01	449	270
3S/1E 10D 5	14-Jan-09	18.4	664	7.7	43	32	48	1.8	277	33	43	16.08	25.5	0.28	0.0018	<0.05	<0.01	380	239
3S/1E 11B 1	1-Nov-08		1770		64	58	240	3		99	227		22	4.4				1074	
3S/1E 11B 1	11-Feb-09		1744		60	58	230	2.5		100	225		30	3.6				1056	
3S/1E 11B 1	5-May-09		1763		61	59	230	2.6		93	236		29	4.2				1046	
3S/1E 11B 1	10-Aug-09		2144		62	58	230	3		100	229		30	3.75				1032	
3S/1E 11C 3	12-May-09	17.0	2083	7.3	85	62	214	1.2	572	109	249	27.06	22.0	2.97	0.0031	<0.05	0.014	1052	469
3S/1E 11G 1	27-Oct-08	19.2	1264	7.1	72	78	87	2.6	494	66	119	46.50	33.2	0.93	0.001	<0.05	<0.01	748	504
3S/1E 11G 2	27-Oct-08	18.5	778	7.2	50	49	41	1.8	307	40	71	19.80	23.1	0.28	<0.001	<0.05	<0.01	447	326
3S/1E 11G 3	27-Oct-08	18.6	644	7.5	46	42	26	1.7	277	34	46	13.55	26.7	0.24	<0.001	<0.05	<0.01	373	286
3S/1E 11G 4	27-Oct-08	19.1	706	7.5	49	41	44	2.1	317	37	48	15.10	25.3	0.26	<0.001	<0.05	<0.01	418	290
3S/1E 11M 2	14-Jan-09	18.3	901	7.4	59	60	38	2.1	365	46	73	23.21	22.9	0.38	<0.001	<0.05	<0.01	505	396
3S/1E 12A 2	1-Nov-08		1770		64	58	240	3		99	227		22	4.4				1074	
3S/1E 12A 2	11-Feb-09		1193		62	90	56	4.1		63	105		36	0.67				693	
3S/1E 12A 2	5-May-09		1198		65	94	59	4.2		63	116		35	0.64				734	
3S/1E 12A 2	10-Aug-09		1422		62	89	55	3.4		66	106		35	0.5				741	
3S/1E 12D 2	1-Nov-08		1710		90	85	170	5		94	123		30	3.43				1076	
3S/1E 12D 2	11-Feb-09		1673		83	83	170	4.6		91	126		39	3.2				1035	
3S/1E 12D 2	5-May-09		1663		85	86	170	4.9		89	133		38	2.7				1036	
3S/1E 12D 2	10-Aug-09		1847		82	85	160	5.5		89	132		38	2.45				977	
3S/1E 12G 1	1-Nov-08		1180		60	77	69	4		58	117		28	0.76				719	
3S/1E 12G 1	11-Feb-09		1160		58	85	78	8		58	113		37	0.88				695	
3S/1E 12G 1	5-May-09		1091		56	76	69	4.4		53	106		36	0.93				671	
3S/1E 12G 1	10-Aug-09		1205		59	83	70	6.9		60	103		35	0.61				681	
3S/1E 12H 4	27-Oct-08	18.9	784	7.2	50	55	32	1.7	323	41	67	16.96	27.4	0.27	<0.001	<0.05	<0.01	450	352
3S/1E 12H 5	27-Oct-08	19.9	704	7.4	46	48	29	1.8	304	39	49	13.77	30.0	0.27	<0.001	<0.05	<0.01	407	314
3S/1E 12H 6	27-Oct-08	20.2	674	7.6	52	43	35	2.1	333	36	32	10.94	29.1	0.26	<0.001	<0.05	<0.01	405	304
3S/1E 12H 7	27-Oct-08	20.3	470	8.1	7	2	96	0.8	207	16	31	4.92	24.8	0.44	0.025	<0.05	<0.01	287	28
3S/1E 12K 2	27-Oct-08	19.1	637	7.2	41	42	25	1.4	238	38	60	8.19	23.1	0.26	<0.001	<0.05	<0.01	356	276
3S/1E 12K 3	27-Oct-08	19.9	823	7.2	52	56	32	1.7	314	49	72	21.26	24.4	0.33	<0.001	<0.05	<0.01	463	360
3S/1E 12K 4	27-Oct-08	20.2	377	7.6	24	19	24	1.4	166	11	22	12.62	29.1	0.15	<0.001	<0.05	<0.01	225	138
3S/1E 13P 1	14-Jan-09	19.4	686	7.4	51	25	50	1.5	191	50	86	0.80	15.3	0.38	<0.001	<0.05	<0.01	374	230
3S/1E 14B 1	13-Jan-09	17.6	698	7.4	66	28	30	1.5	248	42	65	8.81	19.1	0.33	<0.001	<0.05	<0.01	383	278
3S/1E 14D 2	18-Mar-09	18.6	746	9.2	6	25	43	1.7	105	<1.0	75	<0.44	<1.1	0.45	<0.001	0.13	0.043	218	118
3S/1E 15J 3	11-Feb-09	17.5	1270	7.1	132	58	51	2.3	470	56	154	9.88	18.1	0.48	<0.001	0.1	0.017	713	567
3S/1E 15M 3	18-Mar-09	18.6	718	7.3	56	23	58	1.4	242	38	76	11.65	25.9	0.42	<0.001	<0.05	<0.01	410	236
3S/1E 16A 2	13-Aug-09		680	7.9	69	29	36	1.7	260	45	59	8.5	0.024	0.32	<0.002	<0.1	<0.02	400	290
3S/1E 16A 4	18-Mar-09	18.1	705	7.5	74	24	32	1.6	274	40	52	8.77	21.1	0.39	<0.001	<0.05	<0.01	389	283
3S/1E 16B 1	18-Mar-09	19.0	755	7.5	79	27	34	1.6	265	42	71	11.03	22.3	0.45	<0.001	<0.05	<0.01	419	308
3S/1E 16C 2	17-Mar-09	18.1	757	7.3	70	33	39	1.6	270	52	73	13.24	22.0	0.40	<0.001	<0.05	<0.01	437	311
3S/1E 16C 3	17-Mar-09	18.4	730	7.6	75	30	32	1.8	288	39	57	14.84	25.0	0.30	<0.001	<0.05	<0.01	417	312
3S/1E 16C 4	17-Mar-09	18.8	751	7.6	77	27	33	1.8	271	40	62	13.24	24.4	0.32	<0.001	<0.05	<0.01	413	303
3S/1E 16E 4	14-Apr-09	17.8	996	7.3	92	42	47	1.9	358	64	97	10.98	19.6	0.43	<0.001	<0.05	<0.01	551	403
3S/1E 16L 5	13-Aug-09		990	7.7	98	45	50	2.1	380	60	91	18	0.026	0.39	<0.002	<0.1	<0.02	590	430
3S/1E 16L 7	13-Aug-09		900	7.8	86	41	41	1.9	340	58	86	15	0.026	0.36	<0.002	<0.1	<0.02	510	380

TABLE 3.2-4
ZONE 7 WATER AGENCY
WATER QUALITY RESULTS FOR GROUNDWATER SAMPLES
2009 Water Year

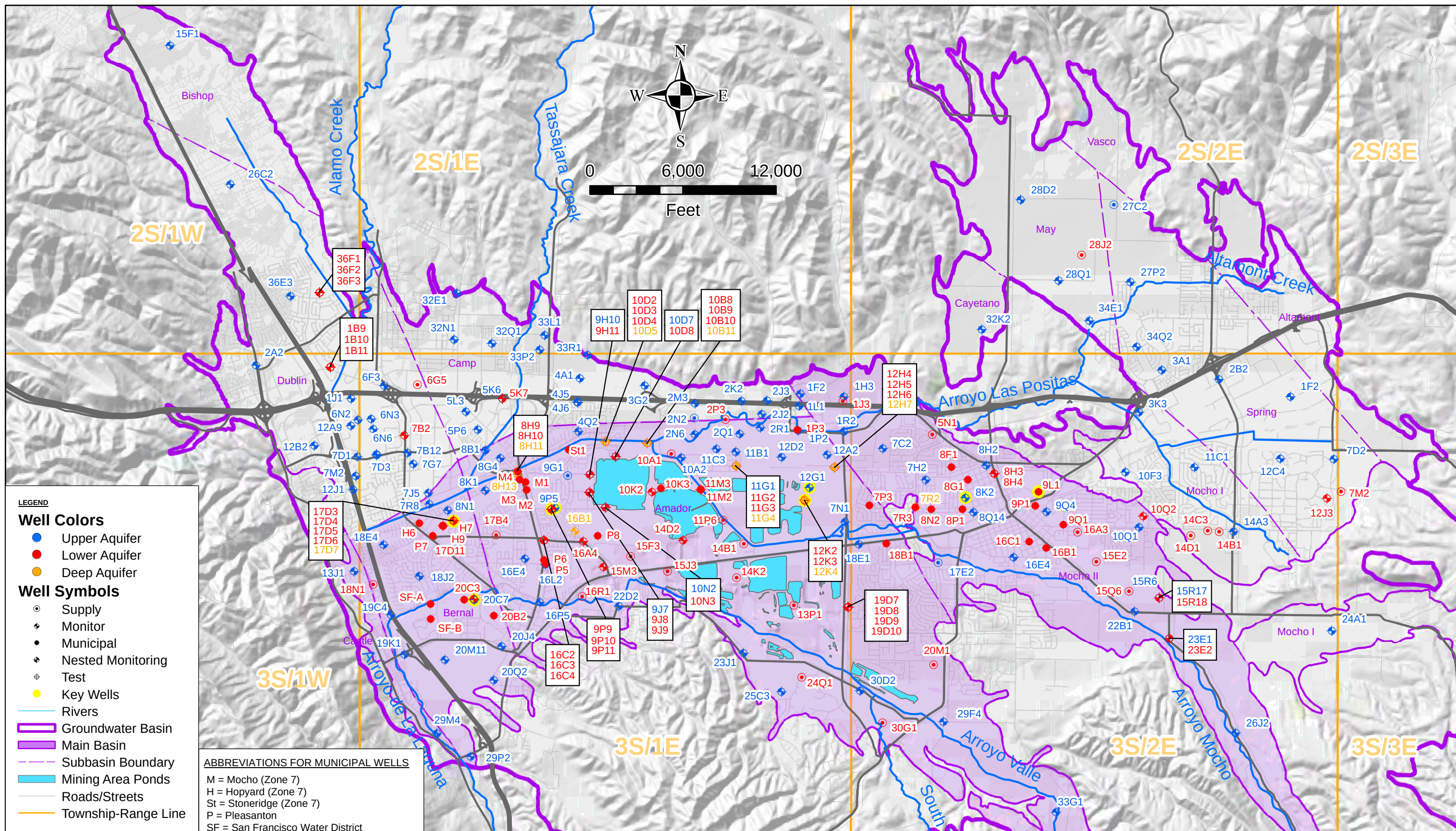
SITE ID	DATE	TEMP.	EC	pH	Mineral Constituents (mg/L)									Select Metals (mg/L)				TDS	Hard
		°C	umhos/cm		Ca	Mg	Na	K	HCO3	SO4	Cl	NO3	SiO2	B	As	Fe	Mn	mg/L	mg/L
3S/1E 16P 5	14-Apr-09	17.0	652	6.9	36	28	51	1.7	196	30	84	0.53	14.5	0.27	<0.001	<0.05	<0.01	342	208
3S/1E 17B 4	14-Apr-09	16.1	1685	7.5	169	90	58	2.4	692	95	157	39.95	20.7	0.58	0.001	<0.05	<0.01	975	794
3S/1E 17D 3	15-Apr-09	16.4	1740	7.0	176	102	68	2.6	690	135	187	30.96	25.7	0.67	0.0014	0.11	0.015	1067	860
3S/1E 17D 4	15-Apr-09	17.6	1157	8.6	13	4	260	0.7	268	21	215	<0.44	17.8	2.57	0.0077	<0.05	0.011	673	48
3S/1E 17D 5	15-Apr-09	17.7	1108	8.5	17	9	249	0.6	262	16	223	<0.44	14.4	2.38	0.059	<0.05	0.12	666	82
3S/1E 17D 6	15-Apr-09	17.9	1394	8.8	9	4	294	0.9	241	11	310	<0.44	17.9	1.49	0.0044	<0.05	0.012	780	41
3S/1E 17D 7	15-Apr-09	17.7	1258	8.5	10	5	260	1.9	83	<1.0	357	0.44	1.7	1.73	0.002	<0.05	0.056	679	46
3S/1E 17D11	15-Apr-09	17.5	1314	8.2	18	4	281	0.8	287	5.2	296	<0.44	22.5	2.46	0.0092	<0.05	0.043	773	61
3S/1E 17D12	17-Jul-09	19.2	793	7.6	71	40	39	1.4	334	44	53	14.35	21.4	0.27	0.0017	<0.005	<0.01	450	340
3S/1E 18A 6	8-Jun-09	18.2	1041	7.8	81	44	80	1.7	403	77	82	13.20	24.4	0.43	0.0015	<0.005	<0.01	604	382
3S/1E 18E 4	15-Apr-09	16.0	729	7.5	60	16	70	0.7	296	60	44	<0.44	24.8	0.47	<0.001	0.19	0.76	422	217
3S/1E 18J 2	15-Apr-09	17.3	3728	7.2	168	226	370	1.9	1051	724	393	<0.44	23.3	1.51	0.016	0.65	7.2	2425	1347
3S/1E 19A10	29-Apr-09		1550	7.6	128	54	54	2.2	423	92	149	10.10	18.1	0.46	<0.001	<0.05	<0.01	717	542
3S/1E 19A11	29-Apr-09		1428	7.5	117	56	48	2.1	443	94	123	11.56	18.6	0.40	<0.001	<0.05	<0.01	690	524
3S/1E 19C 4	14-Apr-09	17.3	1171	7.3	108	59	49	2.1	432	128	77	13.37	22.7	0.35	<0.001	0.16	0.032	673	513
3S/1E 19K 1	14-Apr-09	17.3	1639	7.2	126	72	120	1.3	612	166	130	<0.44	16.4	0.59	0.0037	<0.05	3.1	934	613
3S/1E 20B 2	5-May-09		931	7.5	80	40	50	1.5	344	55	82	15.94	25.5	0.30	<0.001	<0.05	<0.01	520	363
3S/1E 20C 7	14-Apr-09	17.4	948	7.2	75	37	58	2.2	333	57	82	15.99	17.7	0.46	<0.001	<0.05	<0.01	509	340
3S/1E 20C 8	29-Oct-08		1012	7.7	87	48	74	3.4	395	88	92	15.15	32.1	0.45	<0.005	4.	0.27	636	413
3S/1E 20C 9	29-Oct-08		877	7.6	83	38	51	2.7	372	50	69	20.28	22.7	0.33	<0.005	0.59	0.26	521	362
3S/1E 20J 4	14-Apr-09	18.5	1194	6.8	66	38	135	1.0	468	64	102	19.88	30.4	0.59	<0.001	<0.05	<0.01	687	322
3S/1E 20M11	14-Apr-09	17.2	909	7.3	72	38	53	1.8	345	54	72	11.87	21.6	0.42	<0.001	<0.05	<0.01	495	338
3S/1E 20Q 2	14-Apr-09	18.5	1224	6.7	60	53	100	0.8	382	24	168	<0.44	34.0	0.25	<0.001	17.8	1.7	628	368
3S/1E 22D 2	15-Apr-09	21.0	1060	6.7	53	40	114	0.5	307	55	132	47.39	44.3	0.11	<0.001	<0.05	0.027	637	298
3S/1E 23J 1	14-Jan-09	19.4	720	6.7	40	30	47	0.8	165	10	117	34.50	35.5	0.10	<0.001	<0.05	<0.01	396	223
3S/1E 25C 3	14-Jan-09	19.2	713	7.0	47	25	61	1.2	233	27	73	38.13	28.7	0.30	<0.001	<0.05	0.07	416	219
3S/1E 29M 4	15-Apr-09	15.4	1286	7.3	106	49	102	2.7	658	2.8	93	<0.44	30.2	1.35	0.035	2.3	0.18	711	466
3S/1E 29P 2	15-Apr-09	17.2	1690	7.3	94	79	136	3.1	621	40	221	0.58	20.2	1.12	0.0014	0.64	0.99	901	560
3S/1W 1B 9	11-Feb-09	17.7	874	7.8	43	19	123	1.1	335	33	97	<0.44	21.3	0.44	0.0058	<0.05	0.114	504	186
3S/1W 1B10	11-Feb-09	18.5	881	7.8	46	16	134	0.7	386	<1.0	97	<0.44	24.2	0.46	0.13	0.35	0.17	510	181
3S/1W 1B11	11-Feb-09	18.4	969	7.8	29	10	165	0.8	244	<1.0	187	<0.44	24.8	0.52	0.017	0.081	0.048	538	115
3S/1W 1J 1	5-Nov-08		2751	7.3	170	78	441	2.0	989	519	182	<0.44	22.7	1.01	0.055	1.2	2.2	1903	746
3S/1W 2A 2	10-Feb-09	19.0	1645	6.8	198	37	95	0.5	643	71	171	2.92	24.0	0.37	0.0023	<0.05	0.012	916	648
3S/1W 12A 9	28-Oct-08		5166	7.1	464	190	338	3.6	291	70	1605	1.24	29.1	0.60	<0.005	4.	7.3	2844	1940
3S/1W 12B 2	10-Feb-09	19.5	1157	6.9	97	29	66	0.4	317	132	102	15.90	34.0	0.19	0.0012	<0.05	1.16	632	362
3S/1W 12J 1	10-Feb-09	19.5	1802	7.3	125	35	210	0.8	472	269	172	3.54	27.2	0.74	0.0024	<0.05	0.63	1076	458
3S/1W 13J 1	15-Apr-09	17.9	946	6.8	95	39	43	<0.5	302	102	80	16.30	23.8	0.18	<0.001	<0.05	0.02	548	399
3S/2E 1F 2	28-Oct-08	18.9	2819	7.4	123	50	427	1.6	226	202	678	17.63	53.5	8.82	0.0027	<0.05	<0.01	1664	512
3S/2E 2B 2	28-Oct-08	19.5	1632	7.5	107	33	208	1.1	252	96	337	21.52	39.2	2.12	0.0018	<0.05	<0.01	968	404
3S/2E 3A 1	13-Nov-08	20.1	952	7.7	50	28	129	0.9	284	82	101	21.17	34.7	1.59	0.0035	<0.05	<0.01	588	239
3S/2E 3K 3	13-Nov-08	18.7	991	7.8	56	39	108	1.8	292	61	115	38.66	28.7	1.36	0.0019	<0.05	<0.01	594	300
3S/2E 5N 1	18-Mar-09	19.9	899	7.6	53	55	41	1.8	304	42	79	43.67	28.9	0.69	<0.001	<0.05	<0.01	495	358
3S/2E 7C 2	1-Nov-08		1063		58	65	64	3		56	114		16	1.21				622	
3S/2E 7C 2	11-Feb-09		1206		55	91	59	5.3		69	105		41	0.6				713	
3S/2E 7C 2	5-May-09		1212		58	95	61	5.4		67	107		40	0.61				726	
3S/2E 7C 2	10-Aug-09		1434		58	93	60	4.7		75	113		39	0.45				764	
3S/2E 7H 2	11-Feb-09	18.8	1240	7.1	74	66	114	2.6	418	151	84	65.10	31.2	0.69	<0.001	<0.05	0.092	794	456
3S/2E 7N 1	27-Oct-08	18.0	550	7.5	30	31	43	1.6	209	30	52	2.48	18.8	0.18	<0.001	<0.05	0.17	312	202
3S/2E 7P 3	18-Nov-08											17.398							
3S/2E 7R 3	18-Nov-08											22.775							
3S/2E 8F 1	7-Oct-08											36.111							

TABLE 3.2-4
ZONE 7 WATER AGENCY
WATER QUALITY RESULTS FOR GROUNDWATER SAMPLES
2009 Water Year

SITE ID	DATE	TEMP.	EC	pH	Mineral Constituents (mg/L)									Select Metals (mg/L)				TDS	Hard
		°C	umhos/cm		Ca	Mg	Na	K	HCO3	SO4	Cl	NO3	SiO2	B	As	Fe	Mn	mg/L	mg/L
3S/2E 8F 1	14-Oct-08											36.19							
3S/2E 8F 1	20-Oct-08											36.356							
3S/2E 8F 1	28-Oct-08											36.99							
3S/2E 8F 1	5-Nov-08											36.321							
3S/2E 8F 1	12-Nov-08											36.354							
3S/2E 8F 1	18-Nov-08											36.146							
3S/2E 8F 1	24-Nov-08											37.965							
3S/2E 8F 1	2-Dec-08											36.18							
3S/2E 8F 1	9-Dec-08											35.904							
3S/2E 8F 1	16-Dec-08											36.235							
3S/2E 8F 1	22-Dec-08											35.959							
3S/2E 8H 2	13-Nov-08	22.0	1122	7.0	42	83	83	1.0	338	72	135	42.03	36.6	0.36	0.0014	<0.05	0.015	661	445
3S/2E 8H 3	10-Jul-09		1219	7.7	76	74	56	1.9	397	70	124	53.59	28.0	0.33	<0.001	<0.05	0.039	681	495
3S/2E 8H 4	10-Jul-09		1181	8.2	52	47	112	2.0	323	21	183	24.84	24.4	0.37	0.001	<0.05	0.024	630	323
3S/2E 8K 2	13-Nov-08	20.3	1036	7.4	62	74	54	1.8	370	67	98	38.66	30.6	0.38	<0.001	<0.05	<0.01	609	458
3S/2E 8N 2	20-Oct-08											14.83							
3S/2E 8P 1	14-Oct-08											26.79							
3S/2E 9Q 4	13-Nov-08	19.8	1128	7.6	51	84	69	1.2	361	87	125	43.22	36.0	0.66	<0.001	<0.05	<0.01	675	475
3S/2E 10F 3	13-Nov-08	18.4	1471	7.0	80	97	111	0.9	546	87	161	35.34	33.0	1.31	0.0016	<0.05	<0.01	874	597
3S/2E 10Q 1	28-Oct-08	20.0	1589	7.1	76	117	115	1.2	513	102	199	59.79	36.2	1.63	<0.001	<0.05	<0.01	959	674
3S/2E 10Q 2	28-Oct-08	18.5	695	7.8	41	39	51	1.8	245	39	66	20.37	27.4	0.63	<0.001	<0.05	<0.01	408	262
3S/2E 10Q 2	8-Jan-09	17.7	715	7.8	72	38	36	1.6	229	52	74	21.21	28.2	0.68	<0.001	0.14	0.01	437	337
3S/2E 11C 1	13-Nov-08	18.4	1154	7.4	104	40	103	2.3	455	40	117	31.04	33.0	0.63	0.0012	<0.05	<0.01	695	423
3S/2E 12C 4	8-Jan-09	17.3	1227	7.7	69	22	144	1.3	313	95	179	9.34	40.7	3.31	0.0013	0.28	0.01	716	264
3S/2E 12J 3	8-Jan-09	10.0	695	7.2	40	10	67	3.4	46	60	147	1.06	18.1	0.36	0.0012	0.12	<0.01	369	142
3S/2E 14A 3	28-Oct-08	17.8	1028	7.1	97	38	78	2.9	411	41	86	47.39	28.0	0.56	<0.001	<0.05	0.13	621	398
3S/2E 14B 1	11-Feb-09	18.6	888	7.5	64	36	67	1.8	287	40	100	38.93	27.6	0.61	<0.001	<0.05	<0.01	517	310
3S/2E 14C 3	2-Mar-09		1328	7.7	98	77	77	1.8	481	59	157	44.24	30.4	0.88	<0.001	<0.05	0.012	783	564
3S/2E 14D 1	2-Mar-09		1237	7.6	71	55	113	1.8	376	94	152	32.77	29.3	1.9	0.0011	<0.05	<0.01	735	403
3S/2E 15E 2	12-May-09	23.2	1089	7.7	42	68	44	1.5	307	76	84	35.12	22.3	0.38	<0.001	0.052	0.018	525	384
3S/2E 15H 6	28-Oct-08	18.0	1561	7.2	80	84	144	1.3	451	122	200	56.24	32.3	2.06	<0.001	<0.05	<0.01	942	545
3S/2E 15Q 6	12-May-09	21.8	477	9.0	20	11	38	2.4	79	40	50	1.68	10.4	0.14	0.002	<0.05	<0.01	220	96
3S/2E 15R17	28-Oct-08	17.8	937	7.7	46	75	42	1.7	346	58	81	50.49	27.8	0.51	0.0011	<0.05	0.031	554	426
3S/2E 15R18	28-Oct-08	18.5	695	7.6	52	42	35	1.8	318	41	45	3.14	26.7	0.20	<0.001	<0.05	0.39	404	304
3S/2E 16A 3	28-Oct-08	11.4	1054	7.5	49	86	43	1.4	362	82	99	47.39	27.2	0.38	<0.001	<0.05	<0.01	614	477
3S/2E 16B 1	14-Oct-08											13.791							
3S/2E 16E 4	13-Nov-08	19.2	628	7.2	27	40	45	1.9	229	46	57	5.98	17.9	0.29	<0.001	0.066	0.3	354	232
3S/2E 18B 1	20-Oct-08											22.923							
3S/2E 18E 1	14-Jan-09	19.4	651	7.4	46	42	20	1.8	242	38	60	5.18	25.7	0.22	<0.001	<0.05	<0.01	358	289
3S/2E 19D 7	13-Nov-08	19.0	730	7.4	61	38	30	1.8	241	16	92	22.32	23.1	0.19	<0.001	<0.05	<0.01	403	309
3S/2E 19D 8	13-Nov-08	19.4	739	7.4	61	37	32	1.8	246	16	91	23.52	23.8	0.18	<0.001	<0.05	<0.01	408	306
3S/2E 19D 9	13-Nov-08	20.1	466	7.4	42	15	30	1.3	130	6.8	45	50.04	24.8	<0.10	<0.001	<0.05	<0.01	279	164
3S/2E 19D10	13-Nov-08	20.3	740	7.2	60	27	51	1.6	203	27	85	51.37	26.5	0.10	<0.001	<0.05	<0.01	430	262
3S/2E 20M 1	11-Feb-09	13.8	844	7.3	65	35	63	1.5	321	54	75	8.41	22.9	0.29	<0.001	<0.05	0.091	483	304
3S/2E 22B 1	18-Mar-09	18.2	1195	7.4	58	94	62	1.3	375	166	74	52.70	30.4	0.53	<0.001	<0.05	<0.01	724	534
3S/2E 23E 1	28-Oct-08	19.8	767	7.8	42	52	50	2.8	340	33	59	12.05	20.8	0.48	0.0018	<0.05	0.013	441	316
3S/2E 23E 2	28-Oct-08	19.5	1150	7.7	44	61	121	3.4	381	46	166	<0.44	22.9	2.40	0.0022	<0.05	0.65	654	363
3S/2E 24A 1	28-Oct-08	18.0	1622	7.1	127	55	169	2.0	518	95	169	123.11	30.8	1.38	<0.001	<0.05	<0.01	1026	545
3S/2E 26J 2	28-Oct-08	16.9	1157	7.4	57	92	70	3.0	527	68	84	24.76	15.6	0.70	<0.001	<0.05	0.048	675	522
3S/2E 29F 4	14-Jan-09	18.7	708	7.5	69	25	42	1.6	268	49	63	<0.44	18.5	0.34	0.0015	0.21	0.13	401	273
3S/2E 29F 4	11-Feb-09	17.4	689	7.5	59	28	43	1.7	263	50	61	<0.44	18.1	0.30	0.002	0.18	0.12	391	262

TABLE 3.2-4
ZONE 7 WATER AGENCY
WATER QUALITY RESULTS FOR GROUNDWATER SAMPLES
2009 Water Year

SITE ID	DATE	TEMP. °C	EC umhos/cm	pH	Mineral Constituents (mg/L)									Select Metals (mg/L)				TDS mg/L	Hard mg/L
					Ca	Mg	Na	K	HCO3	SO4	Cl	NO3	SiO2	B	As	Fe	Mn		
3S/2E 30D 2	11-Feb-09	19.4	624	7.3	46	24	48	1.8	212	35	74	0.89	14.3	0.27	<0.001	<0.05	0.091	349	214
3S/2E 33G 1	11-Feb-09	13.4	786	7.4	45	24	73	2.4	148	69	129	1.68	14.7	0.28	0.0013	<0.05	<0.01	432	212
3S/3E 7D 2	28-Oct-08	19.3	2108	7.4	106	46	288	2.1	279	229	397	16.70	53.9	6.26	0.0022	<0.05	<0.01	1277	454



ZONE 7 WATER AGENCY
100 North Canyons Parkway
Livermore, CA

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FILE: E:\MONITOR\GM\2009WY\AnnualReport\Fig3.2-01-AllWells2009.mxd

SCALE: 1 in = 6,000 ft

DATE: May 5, 2010

Figure 3.2-1
Zone 7 Groundwater Program
Wells in 2009 Program
Livermore Valley Groundwater Basin

FIGURE 3.2-2
ZONE 7 WATER AGENCY
Key Well Hydrographs - Historical
Western Portion of Main Basin

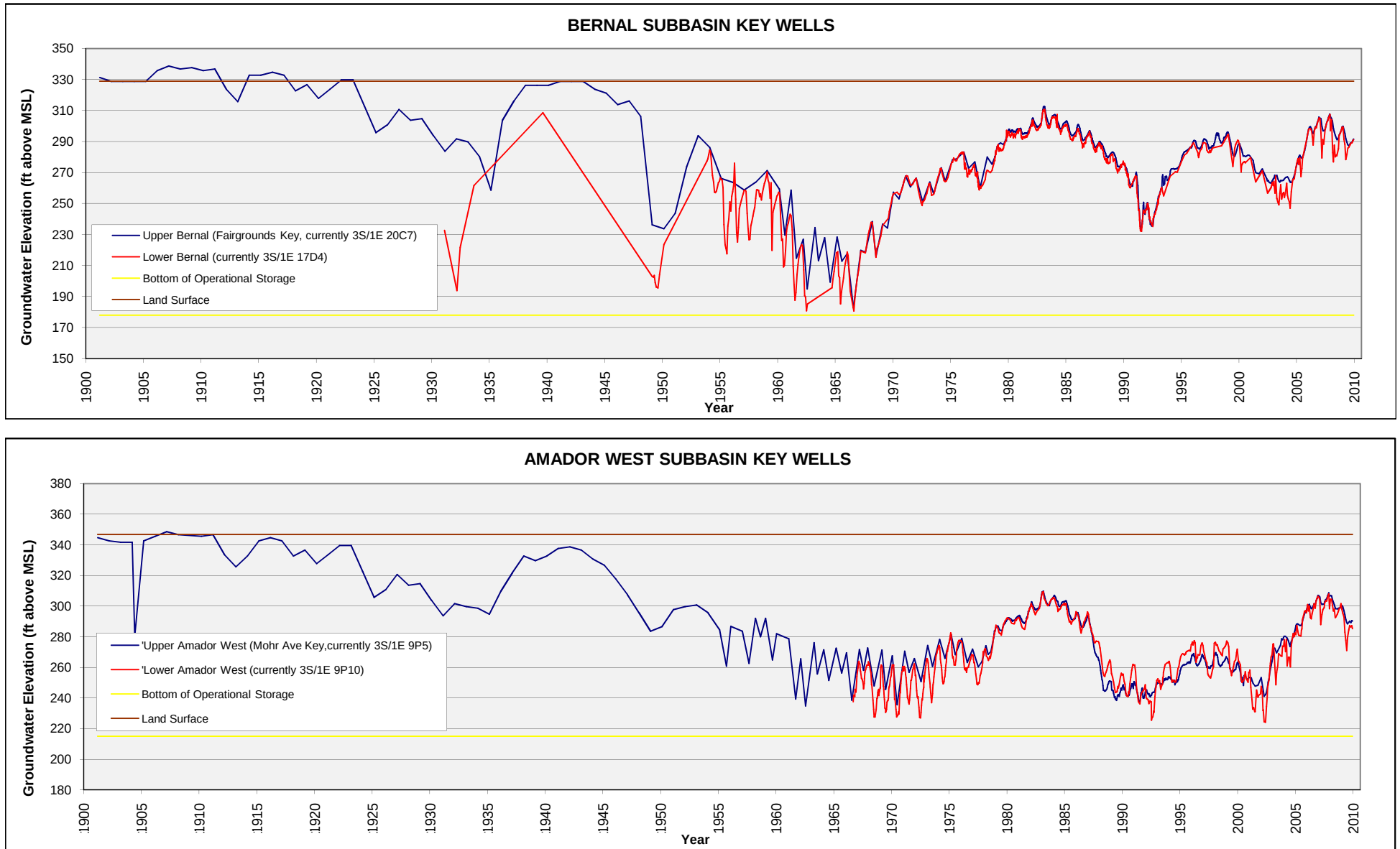


FIGURE 3.2-2
ZONE 7 WATER AGENCY
Key Well Hydrographs - Historical
Eastern Portion of Main Basin

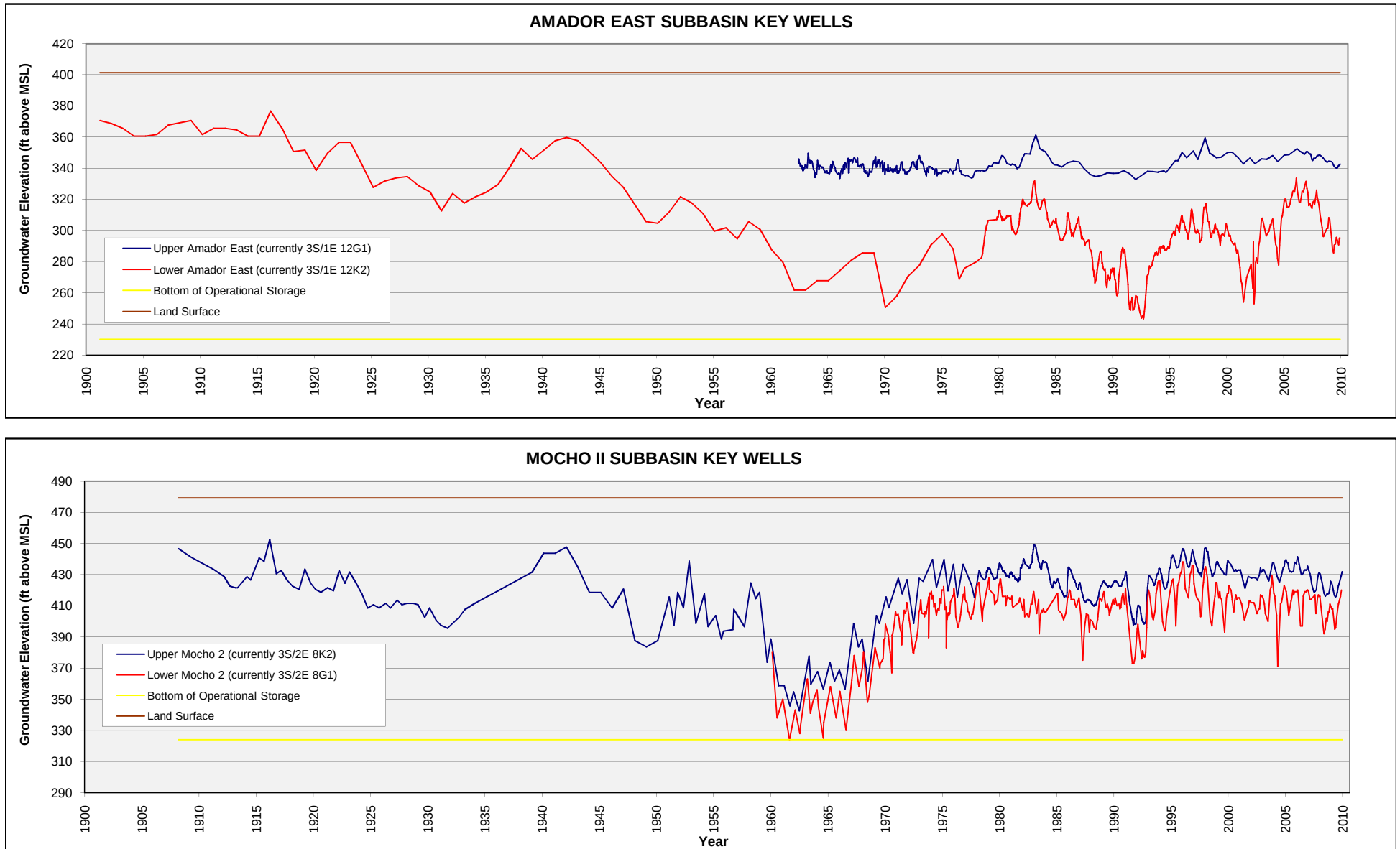


FIGURE 3.2-3
ZONE 7 WATER AGENCY
Key Well Hydrographs - Bernal SubBasin
2008 to 2009 Water Years

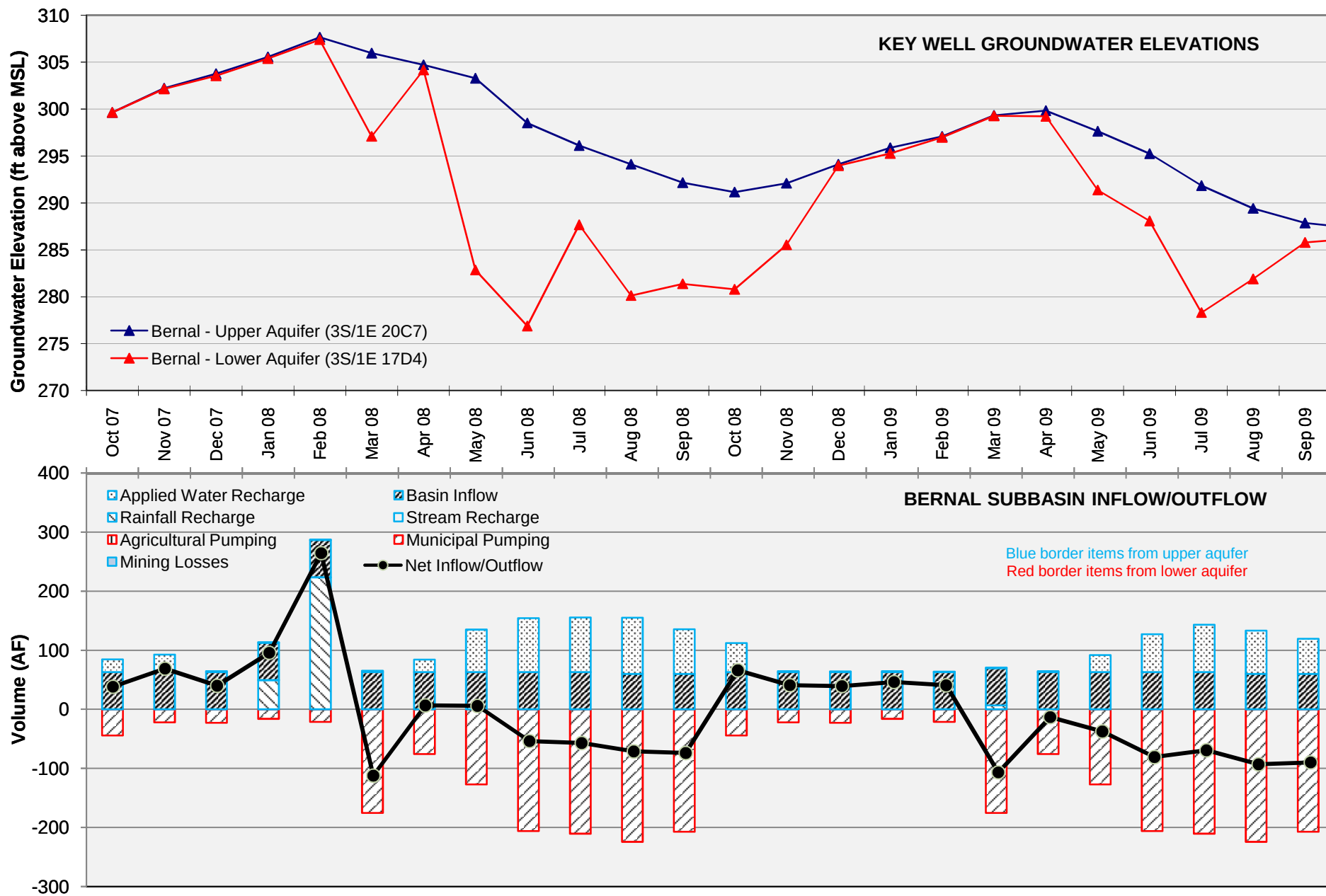


FIGURE 3.2-3
ZONE 7 WATER AGENCY
Key Well Hydrographs - Amador West SubBasin
2008 to 2009 Water Years

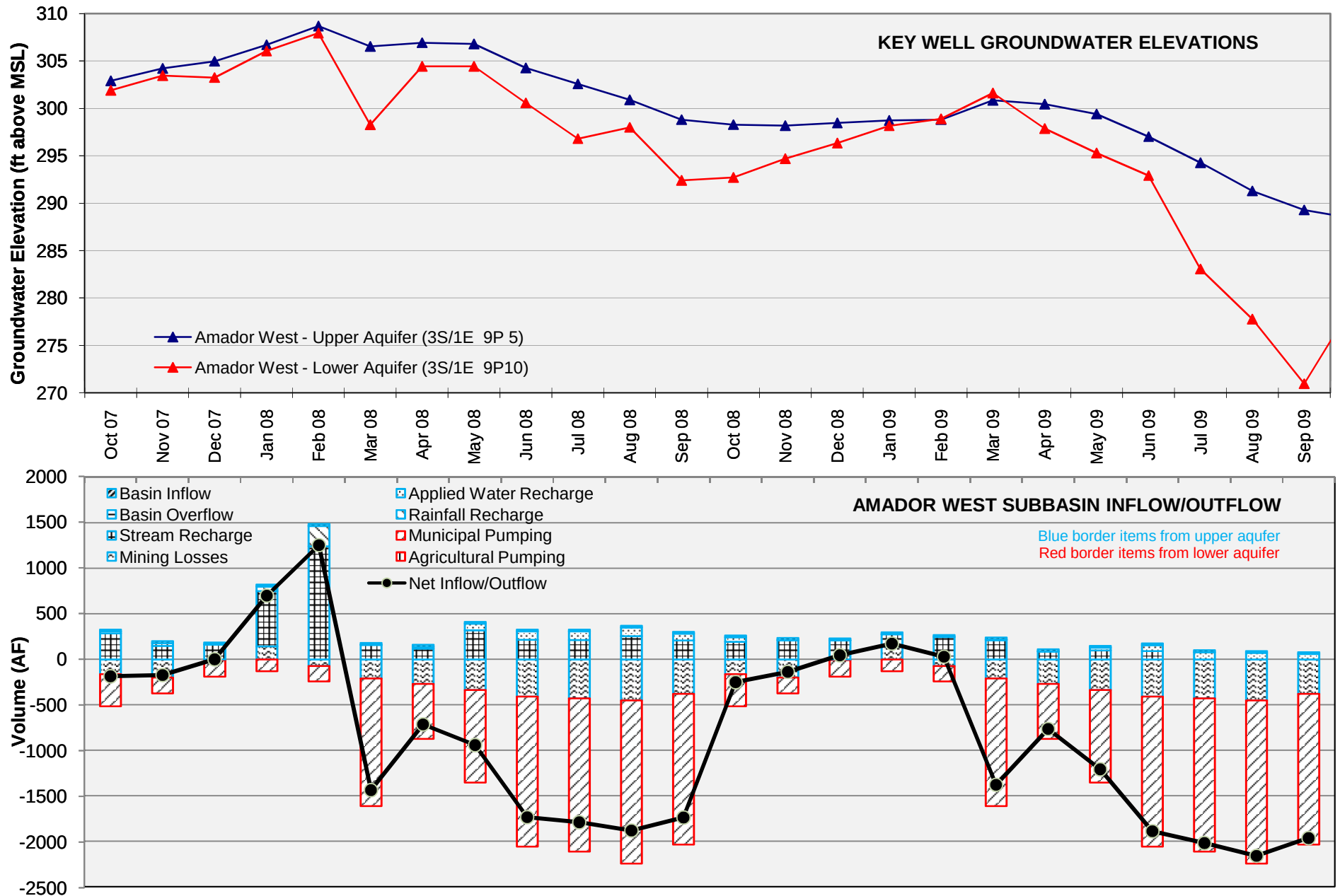


FIGURE 3.2-3
ZONE 7 WATER AGENCY
Key Well Hydrographs - Amador East SubBasin
2008 to 2009 Water Years

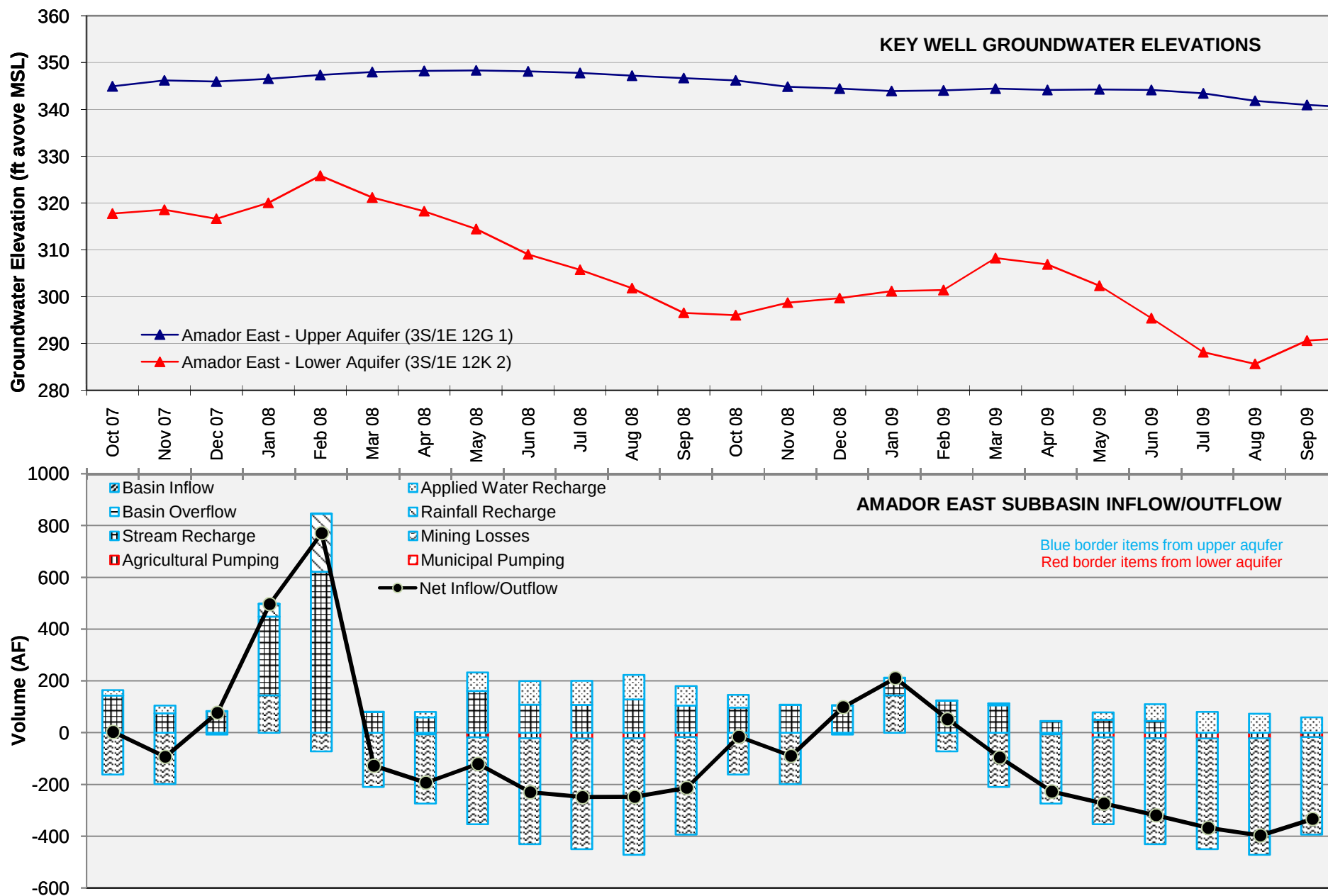
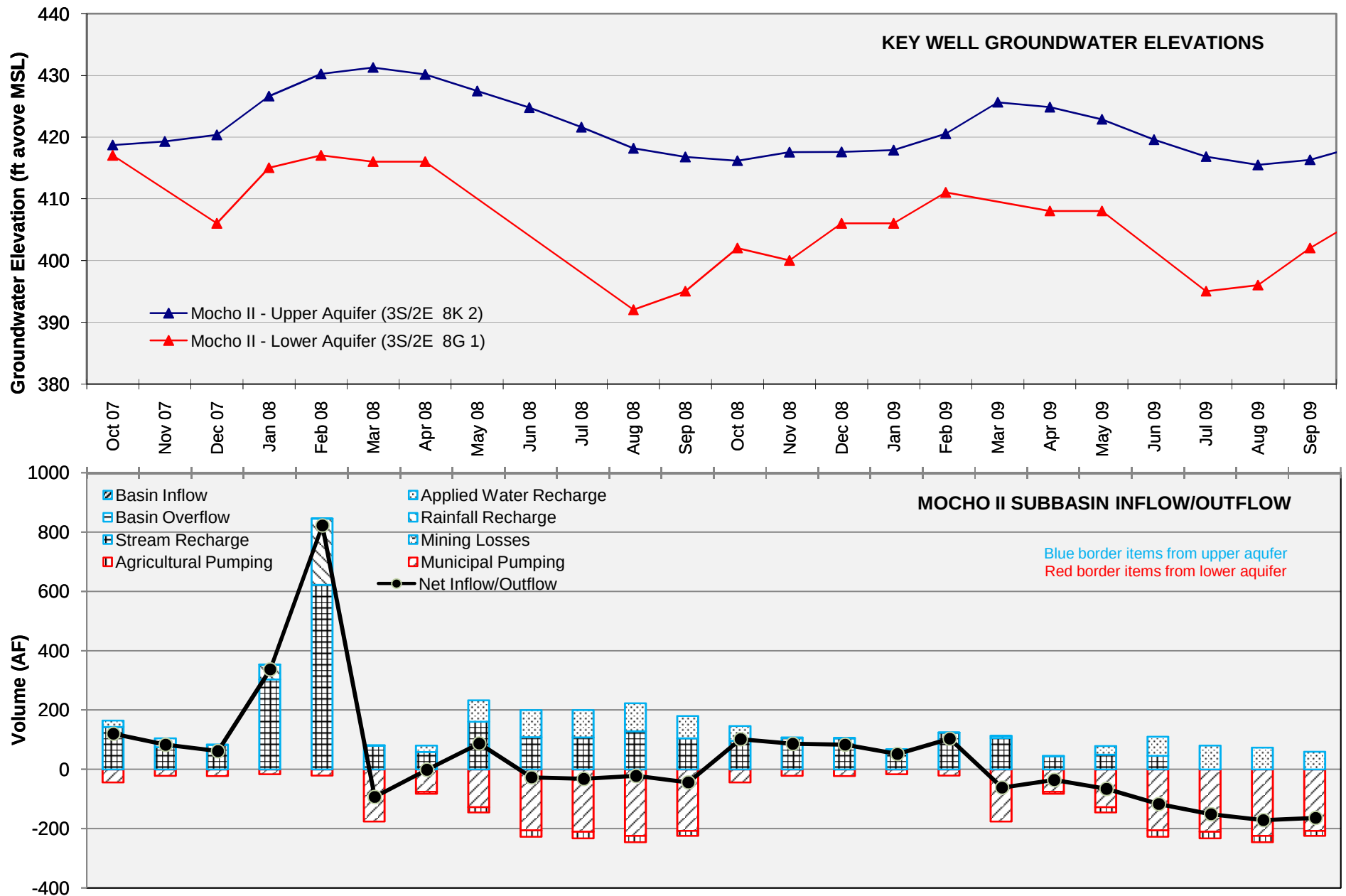
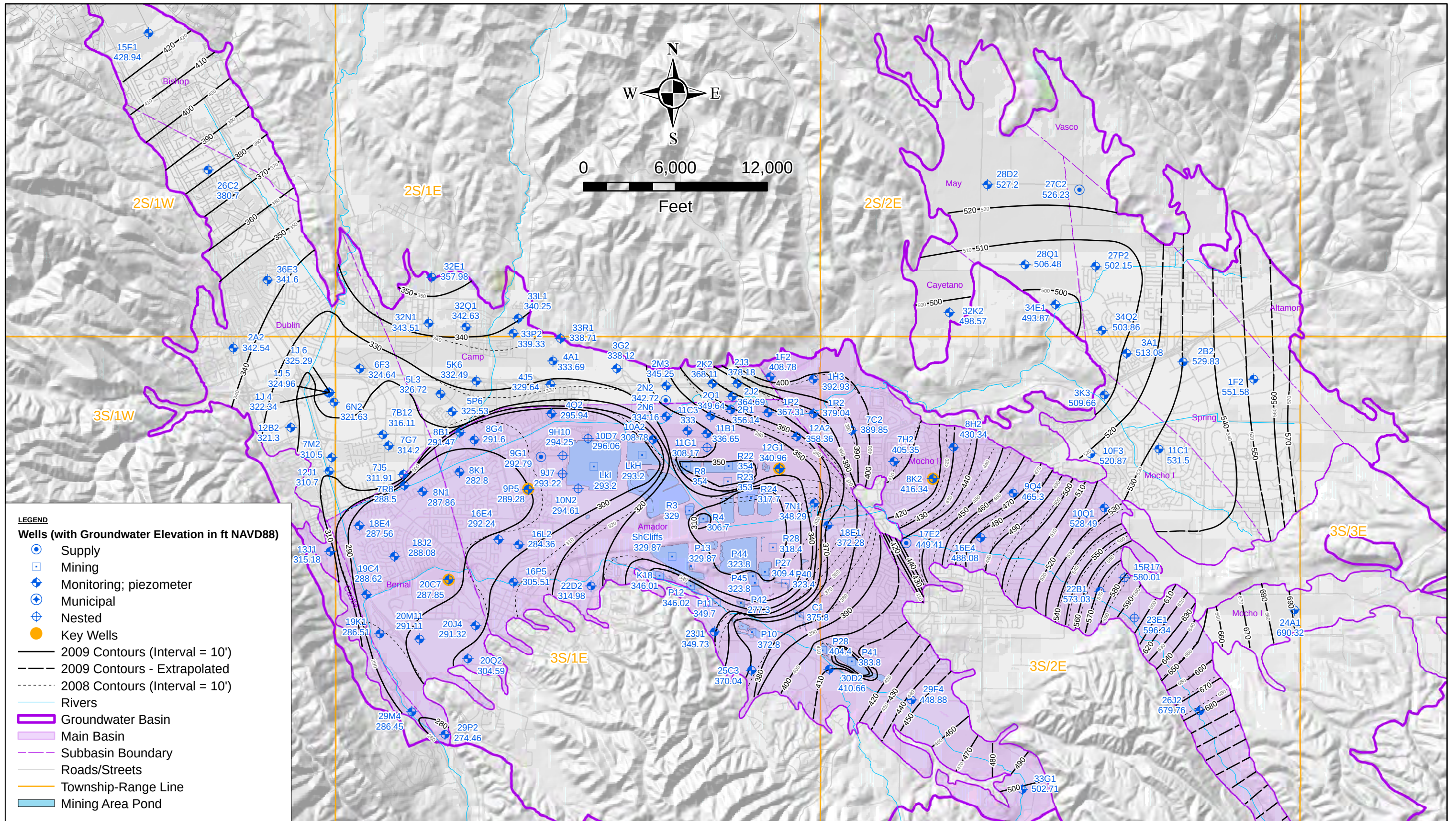


FIGURE 3.2-3
ZONE 7 WATER AGENCY
Key Well Hydrographs - Mocho II SubBasin
2008 to 2009 Water Years





ZONE 7 WATER AGENCY
100 North Canyons Parkway
Livermore, CA

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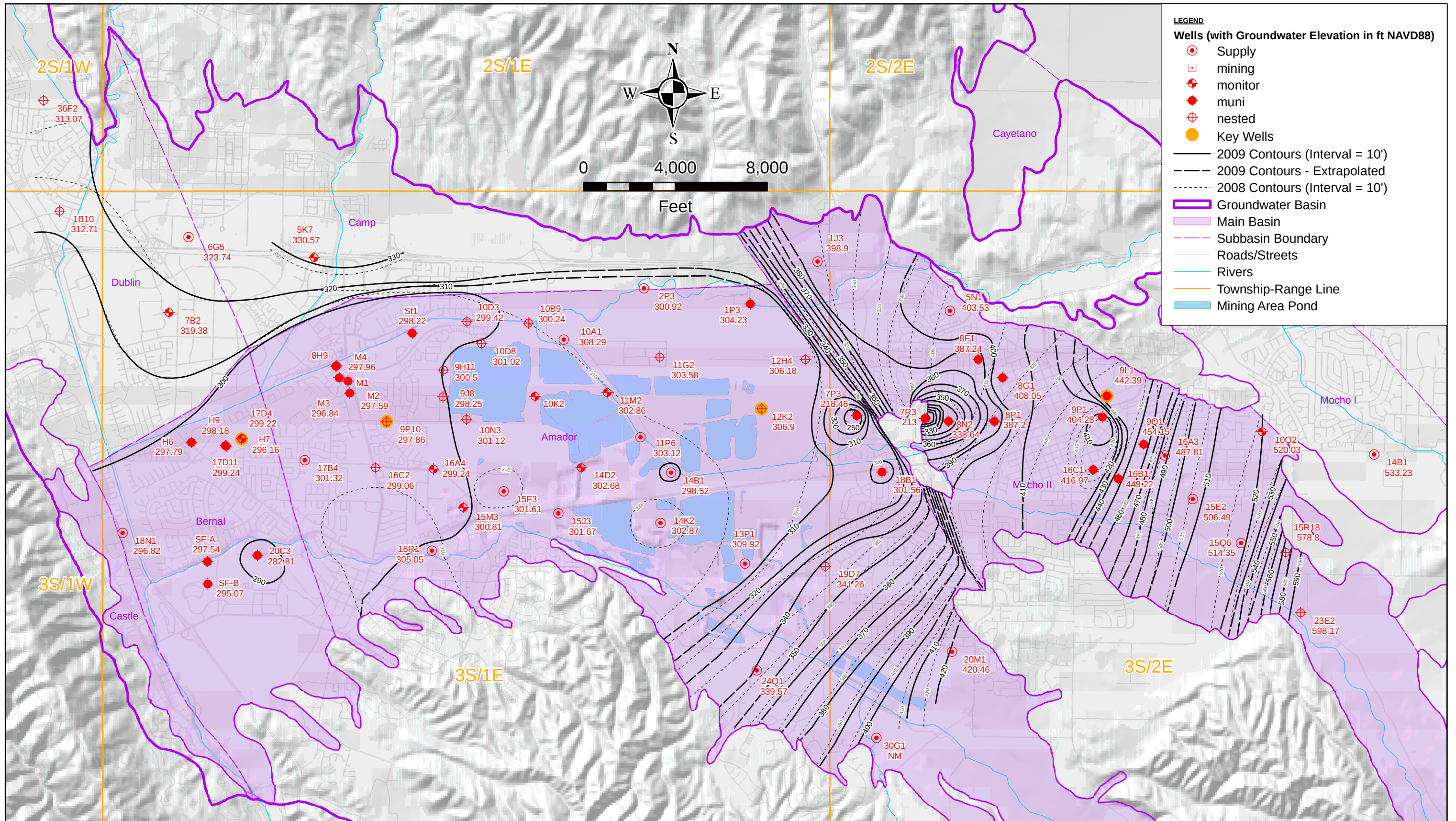
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SCALE: 1 in = 6,000 ft

DATE: May 5, 2010

Figure 3.2-5
Groundwater Gradient Map
Upper Aquifer; Fall 2009 (September)
Livermore Valley Groundwater Basin



ZONE 7 WATER AGENCY
100 North Canyons Parkway
Livermore, CA

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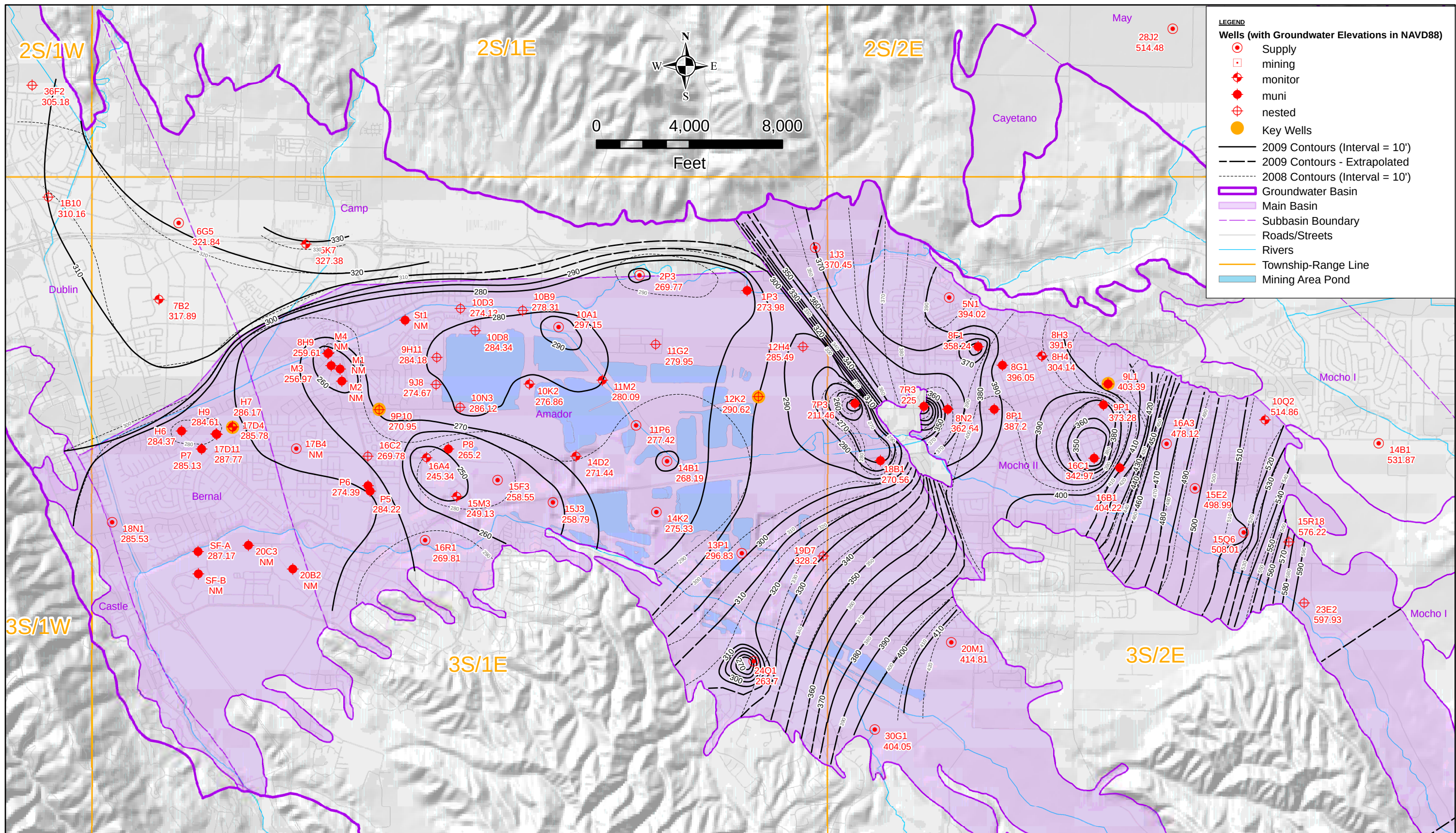
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SCALE: 1 in = 4,000 ft

DATE: May 5, 2010

Figure 3.2-6
Groundwater Gradient Map
Lower Aquifer; Spring 2009 (April)
Livermore Valley Groundwater Basin



ZONE 7 WATER AGENCY
100 North Canyons Parkway
Livermore, CA

DRAWN: TR

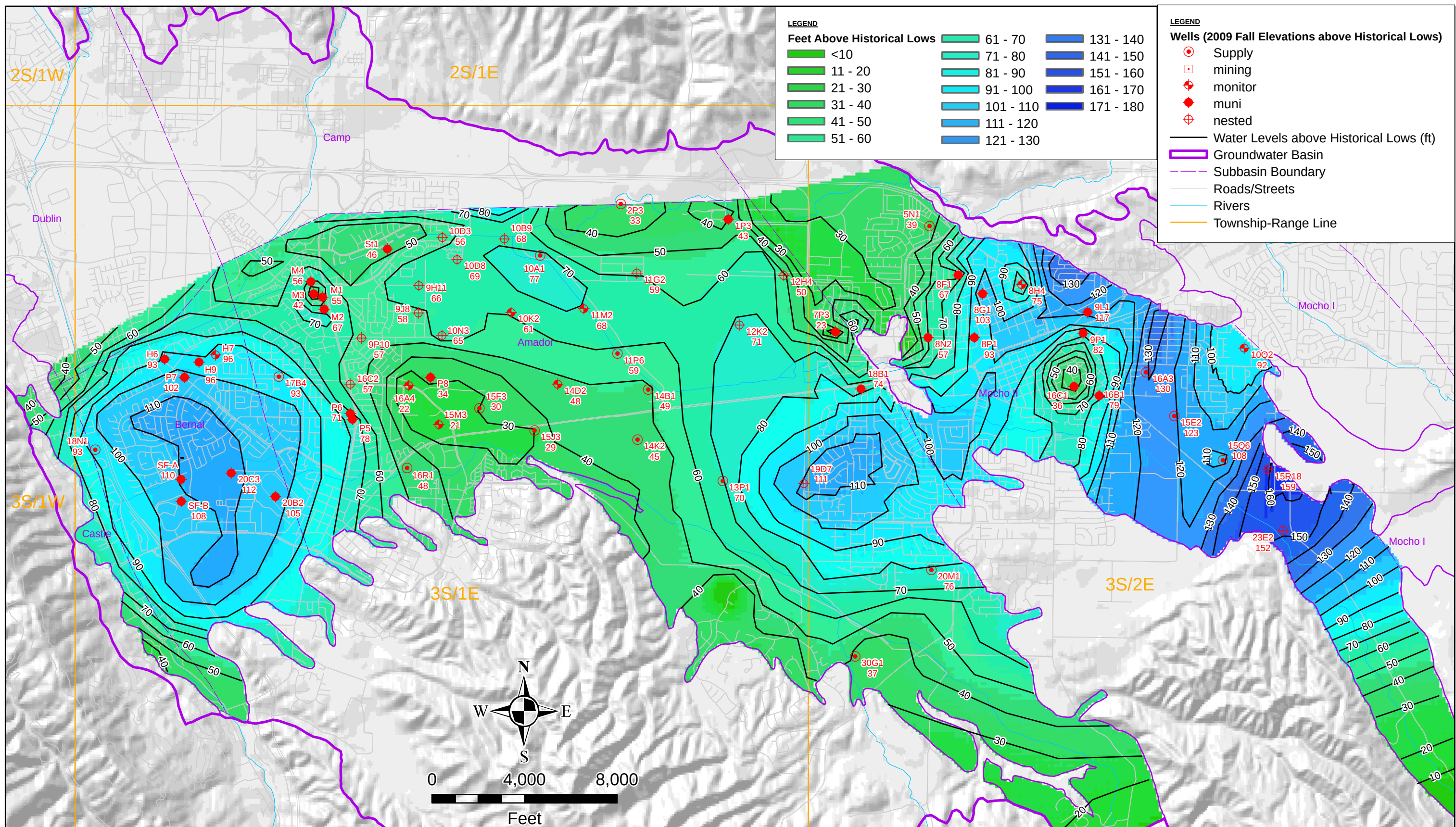
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SCALE: 1 in = 4,000 ft

DATE: May 5, 2010

Figure 3.2-7
Groundwater Gradient Map
Lower Aquifer; Fall 2009 (September)
Livermore Valley Groundwater Basin



ZONE 7 WATER AGENCY
100 North Canyons Parkway
Livermore, CA

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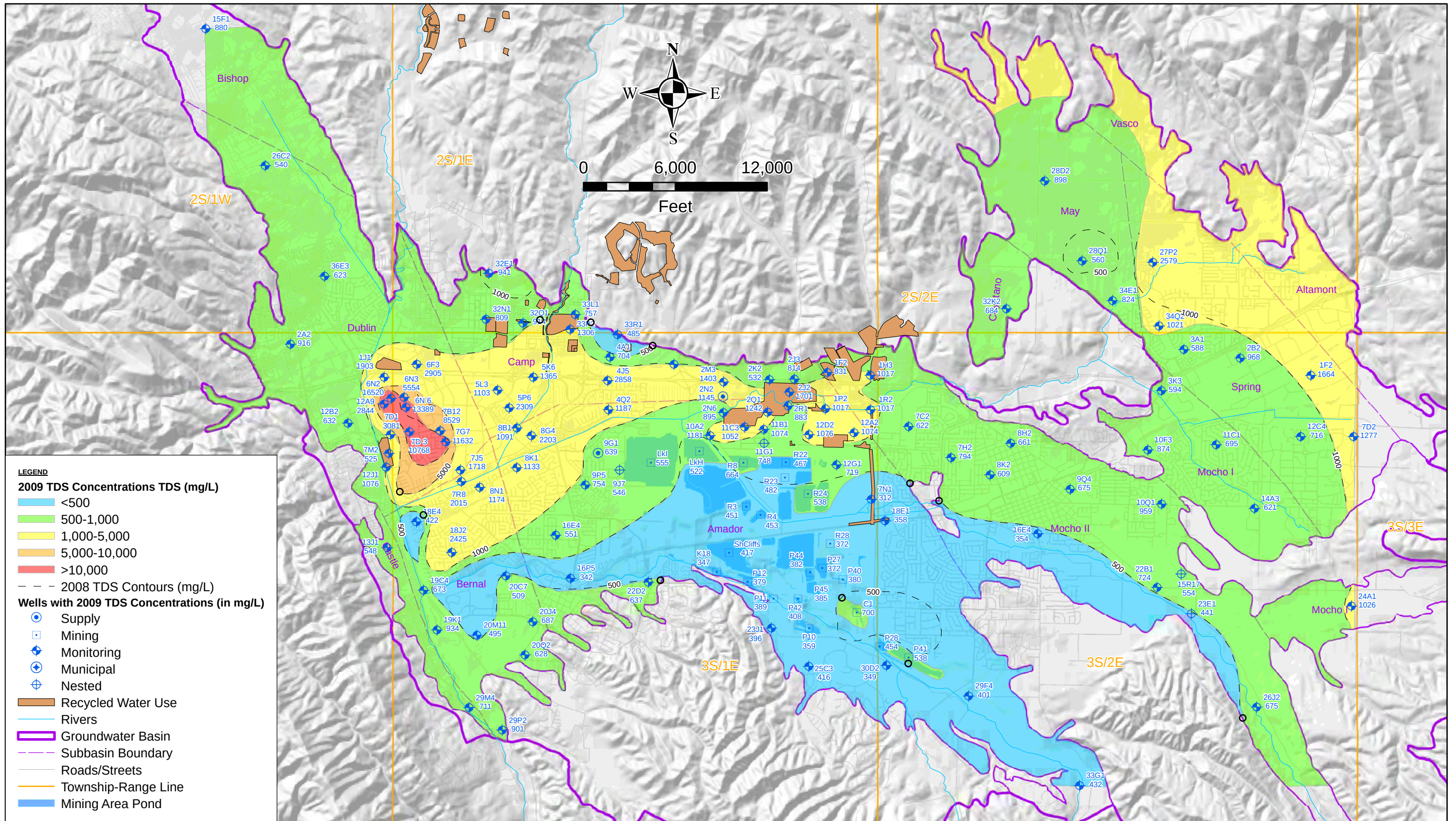
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SCALE: 1 in = 4,000 ft

DATE: May 5, 2010

Figure 3.2-8
Groundwater Levels Above Historical Lows
Lower Aquifer; Fall 2009 (September)
Livermore Valley Groundwater Basin



ZONE 7 WATER AGENCY
100 North Canyons Parkway
Livermore, CA

DRAWN: CW/TR

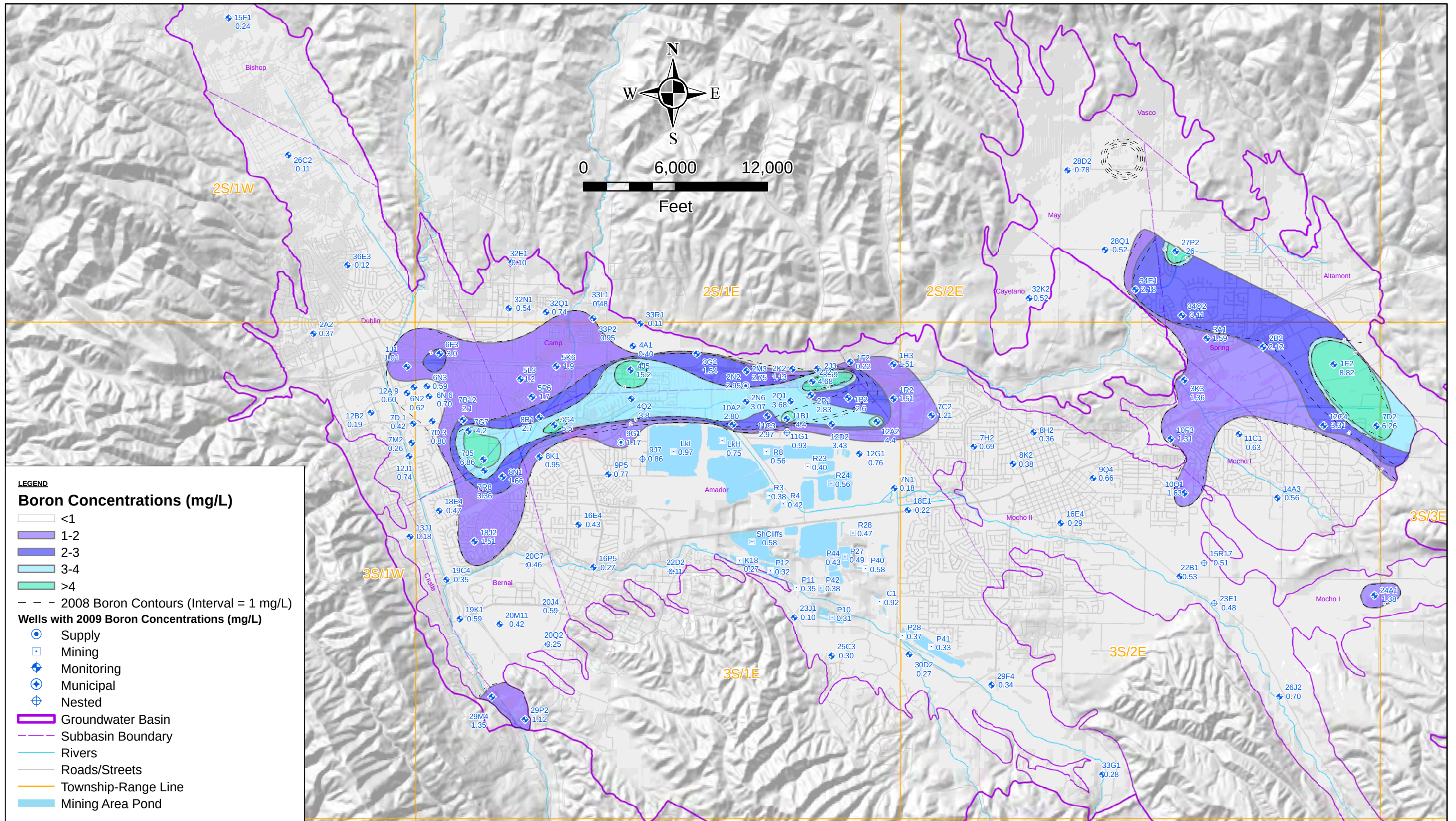
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SCALE: 1 in = 6,000 ft

DATE: May 5, 2010

Figure 3.2-9
TDS Concentrations (mg/L)
Upper Aquifer; 2009 Water Year
Livermore Valley Groundwater Basin



ZONE 7 WATER AGENCY
100 North Canyons Parkway
Livermore, CA

DRAWN: CW/TR

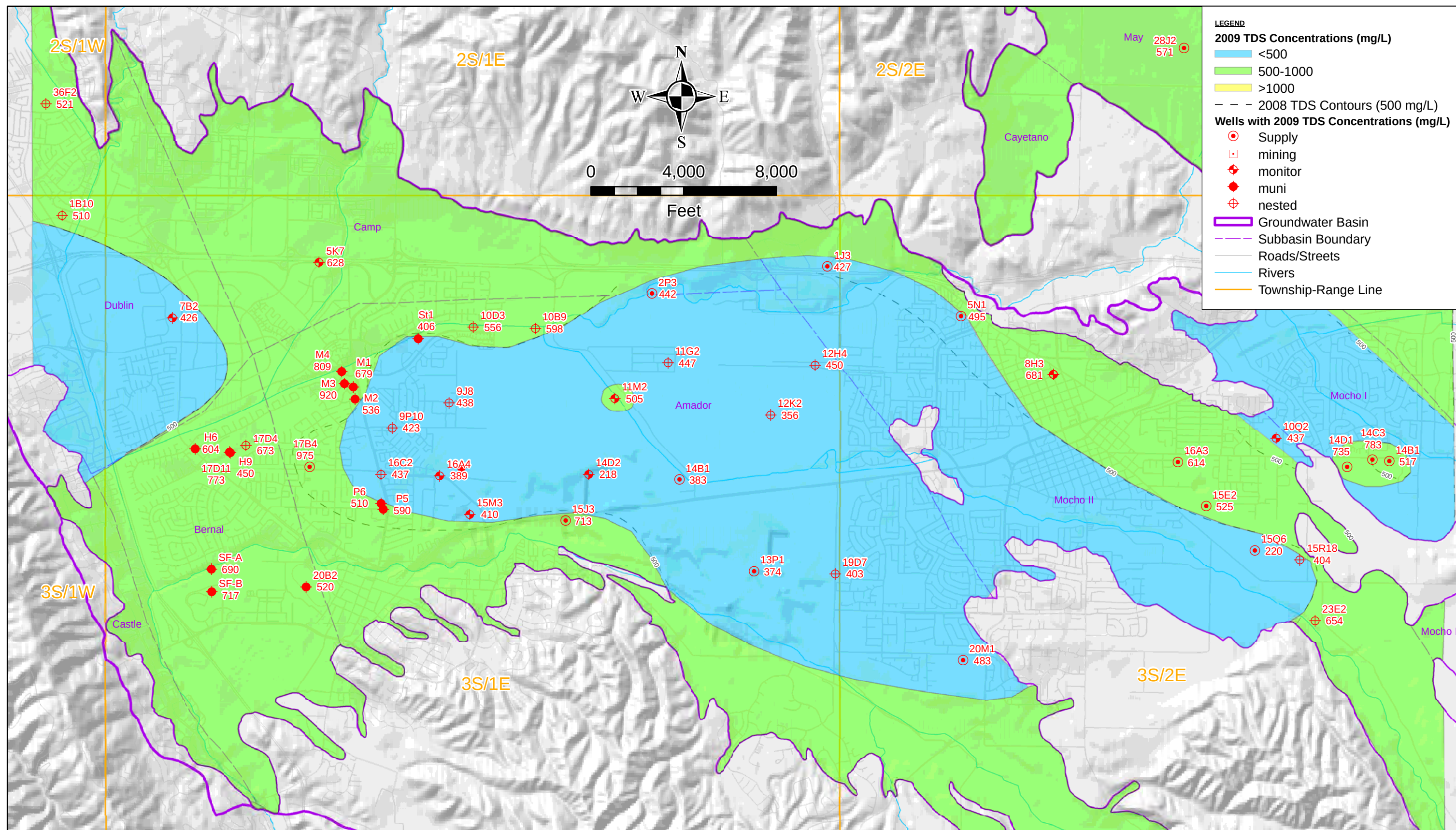
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SCALE: 1 in = 6,000 ft

DATE: May 6, 2010

Figure 3.2-11
Boron Concentrations (mg/L)
Upper Aquifer; 2009 Water Year
Livermore Valley Groundwater Basin



ZONE 7 WATER AGENCY
100 North Canyons Parkway
Livermore, CA

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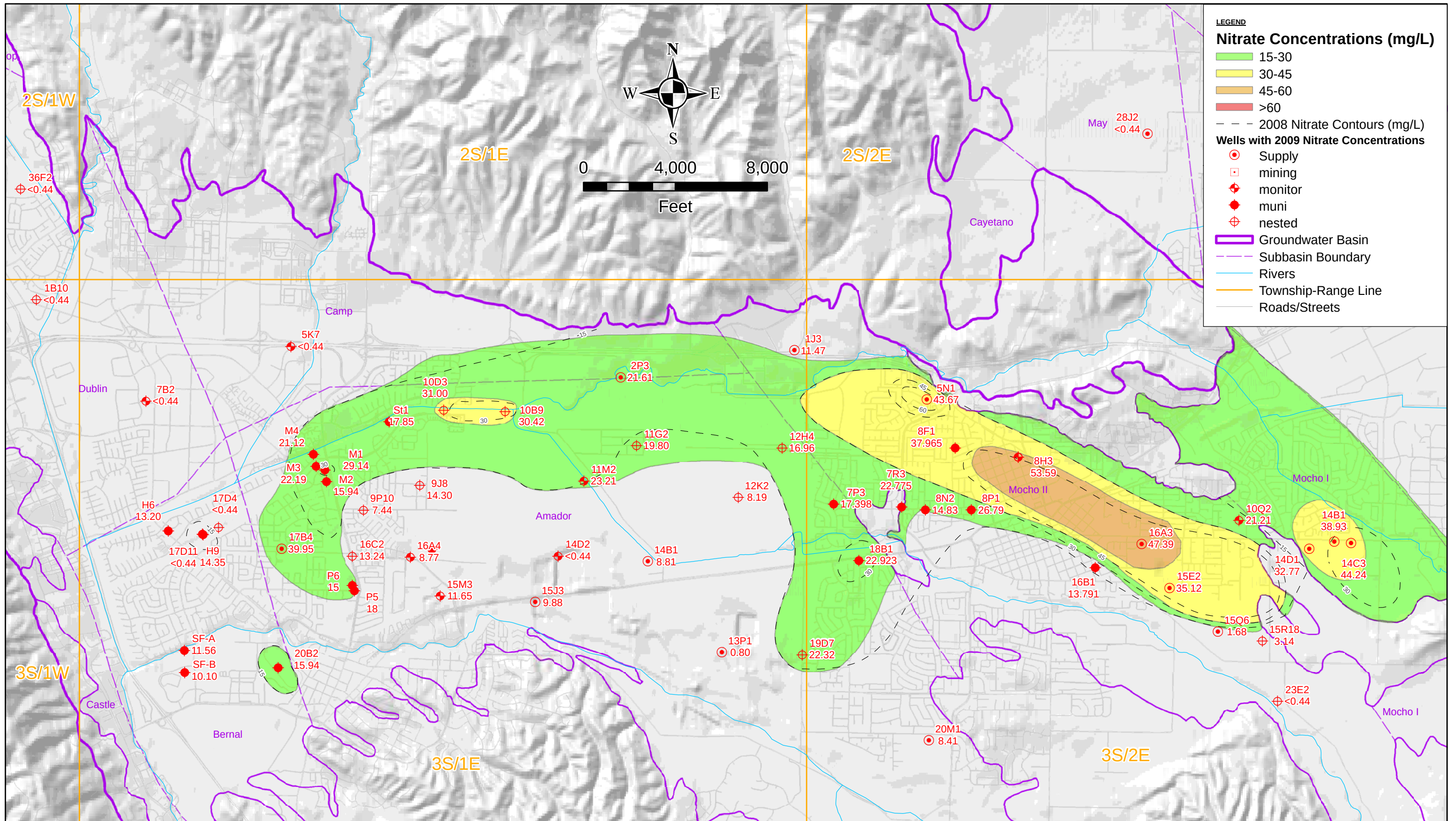
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SCALE: 1 in = 4,000 ft

DATE: May 6, 2010

Figure 3.2-12
TDS Concentrations (mg/L)
Lower Aquifer; 2009 Water Year
Livermore Valley Groundwater Basin



ZONE 7 WATER AGENCY
100 North Canyons Parkway
Livermore, CA

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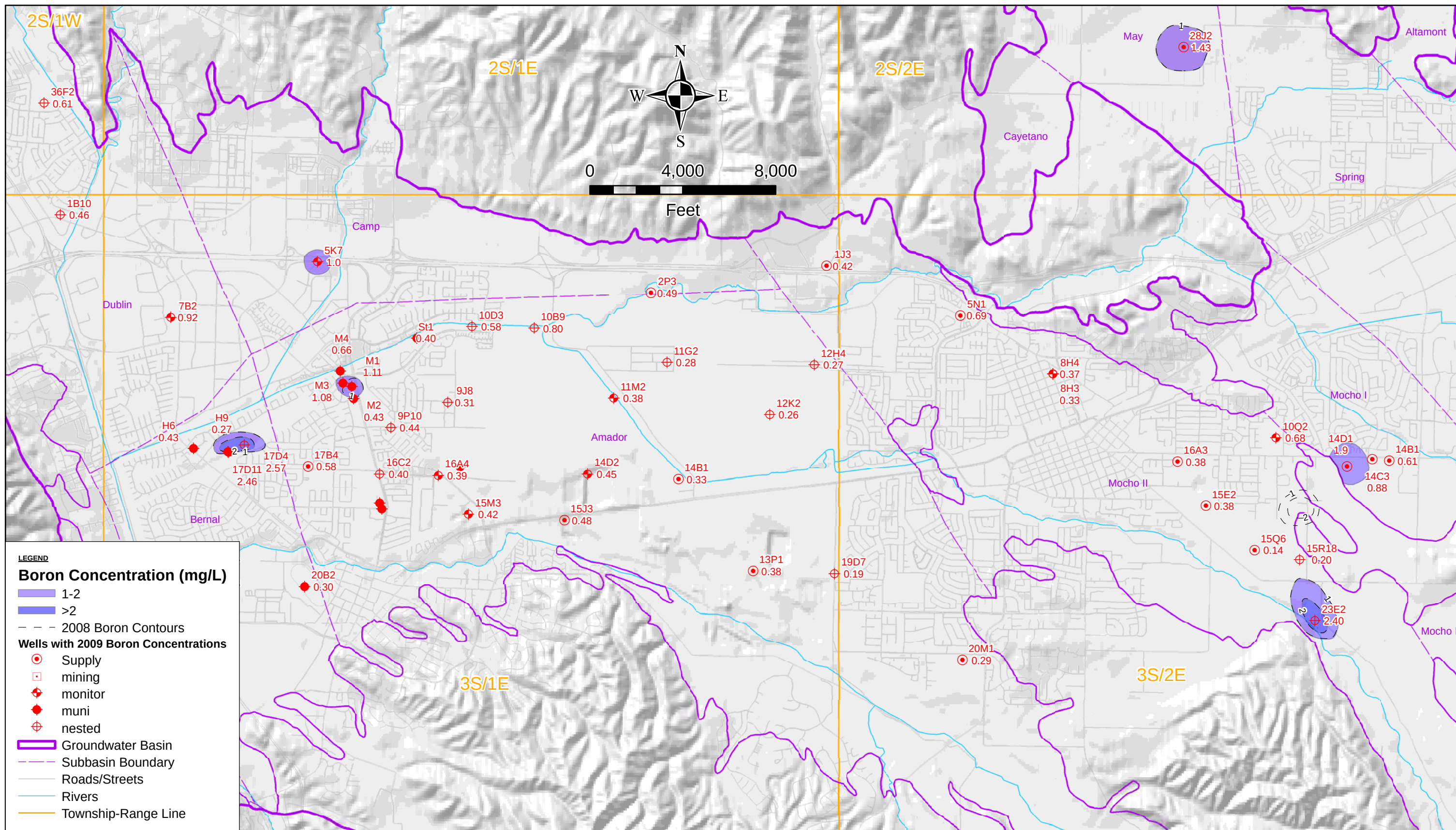
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SCALE: 1 in = 4,000 ft

DATE: May 6, 2010

Figure 3.2-13
Nitrate Concentrations (mg/L)
Lower Aquifer; 2009 Water Year
Livermore Valley Groundwater Basin



ZONE 7 WATER AGENCY
100 North Canyons Parkway
Livermore, CA

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SCALE: 1 in = 4,000 ft

DATE: May 6, 2010

Figure 3.2-14
Boron Concentrations (mg/L)
Lower Aquifer; 2009 Water Year
Livermore Valley Groundwater Basin

Figure 3.2-15
Zone 7 Water Agency
Graph of TDS Concentrations in Western Key Wells

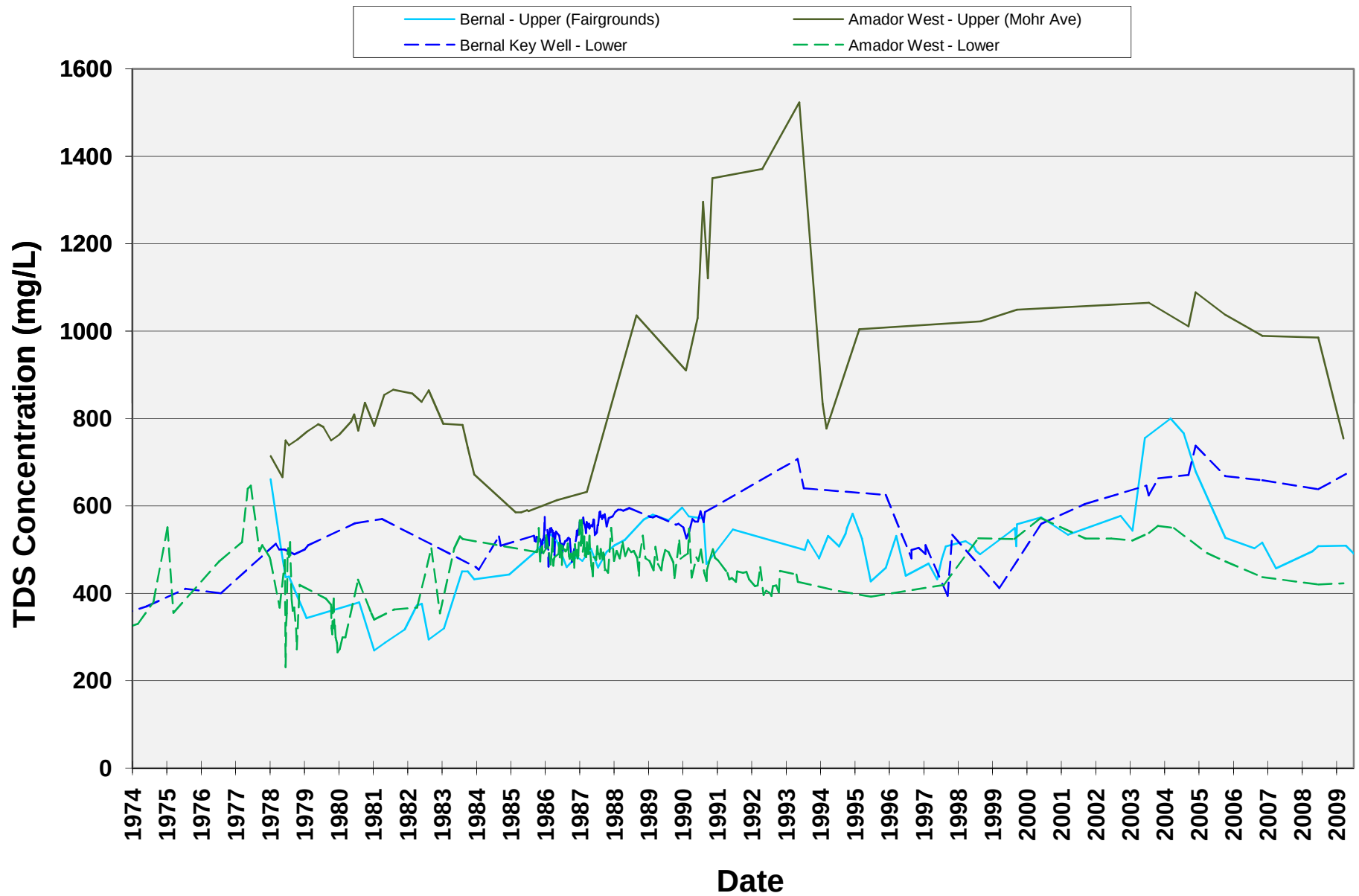


Figure 3.2-16
Zone 7 Water Agency
Graph of TDS Concentrations in Eastern Key Wells

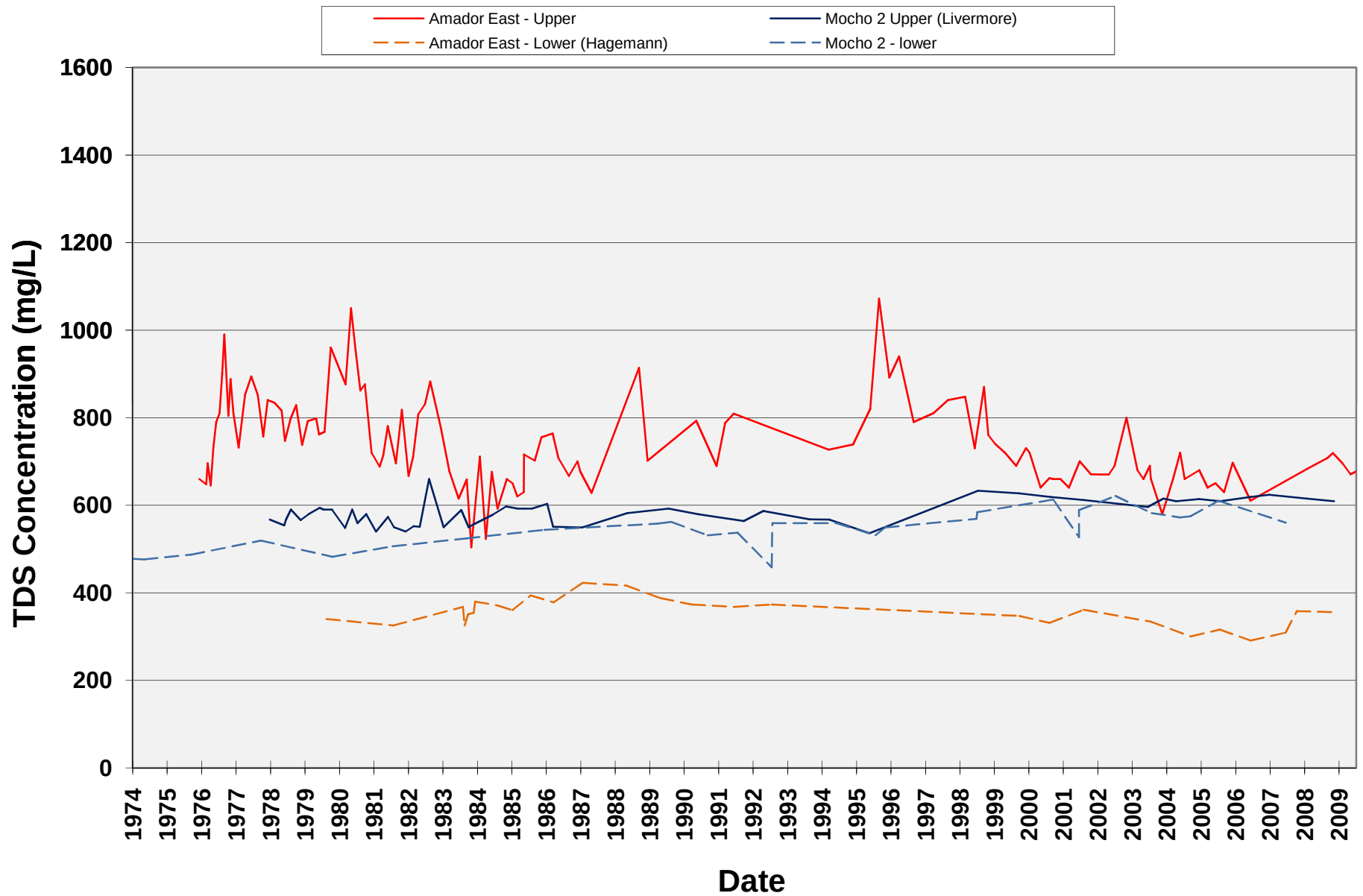
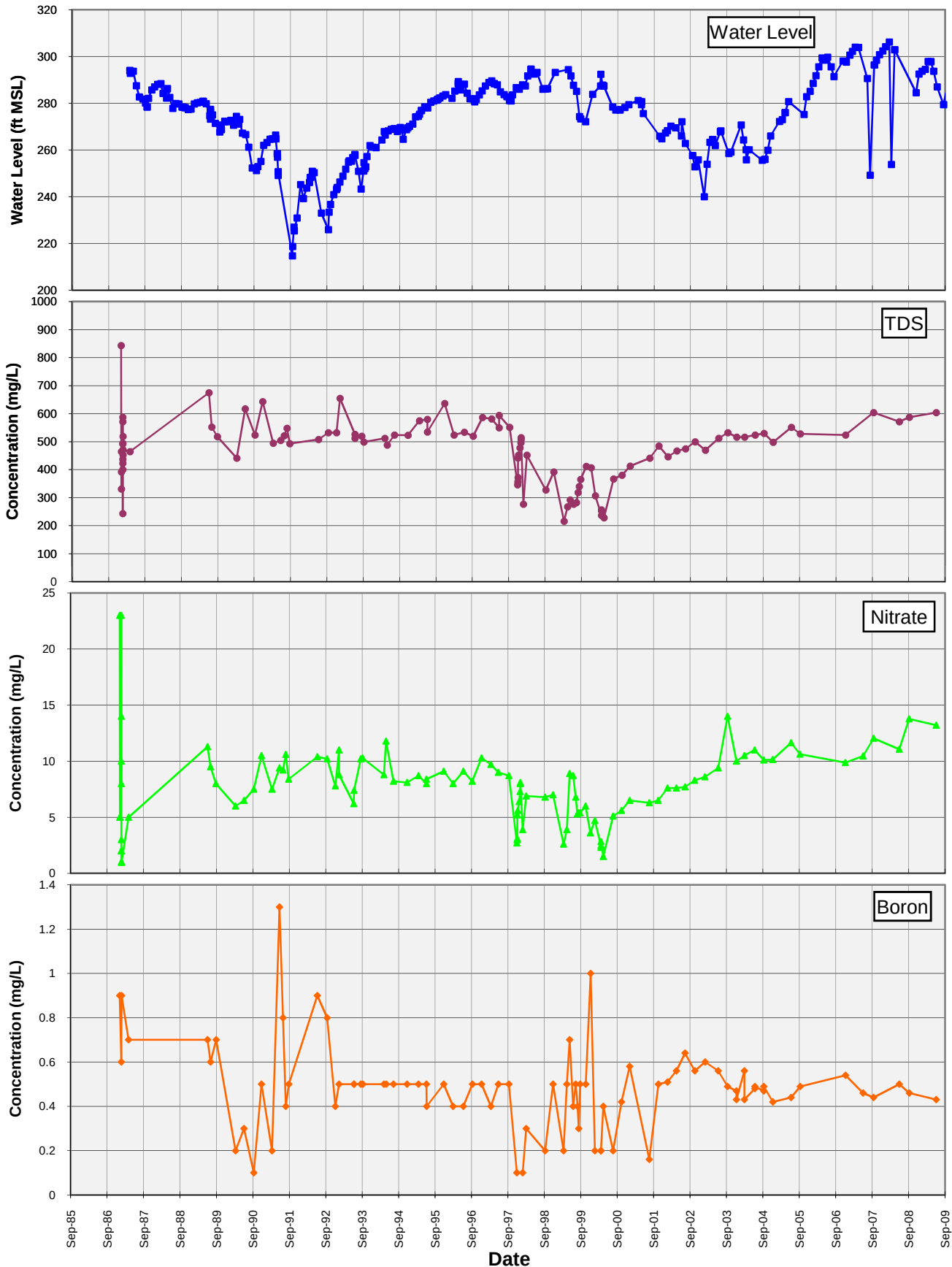


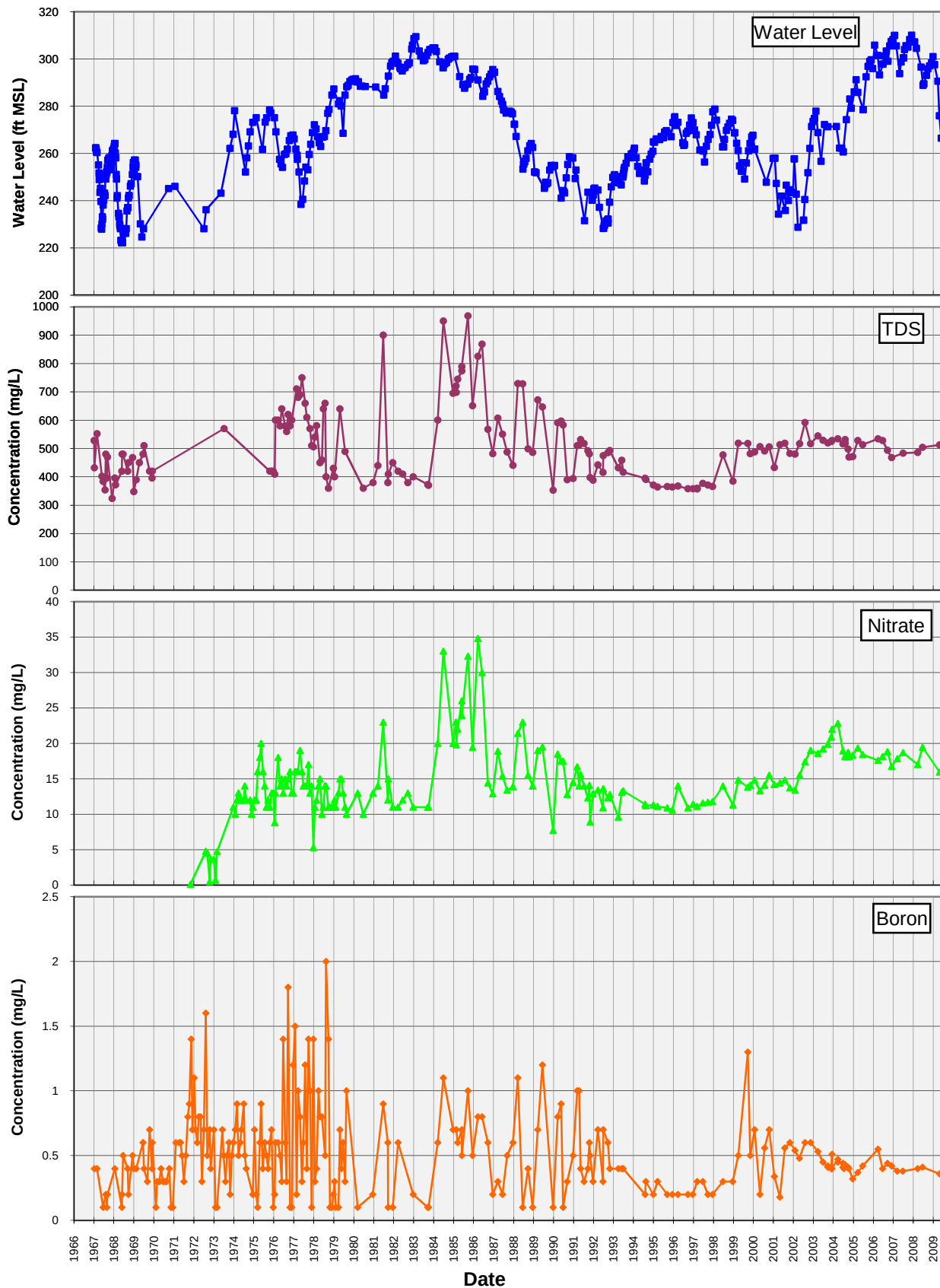
Figure 3.2-17
 Zone 7 Groundwater Program
 Hydro-Chemo Graph for 3S/1E 18A 6 (Hopyard 6)
 Bernal Subbasin - Lower Aquifer



Well Depth = 273'; Wellhead Elevation = 466'; Well Screen Depth: 122 to 263' bgs.
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FIGURE 3.2-17

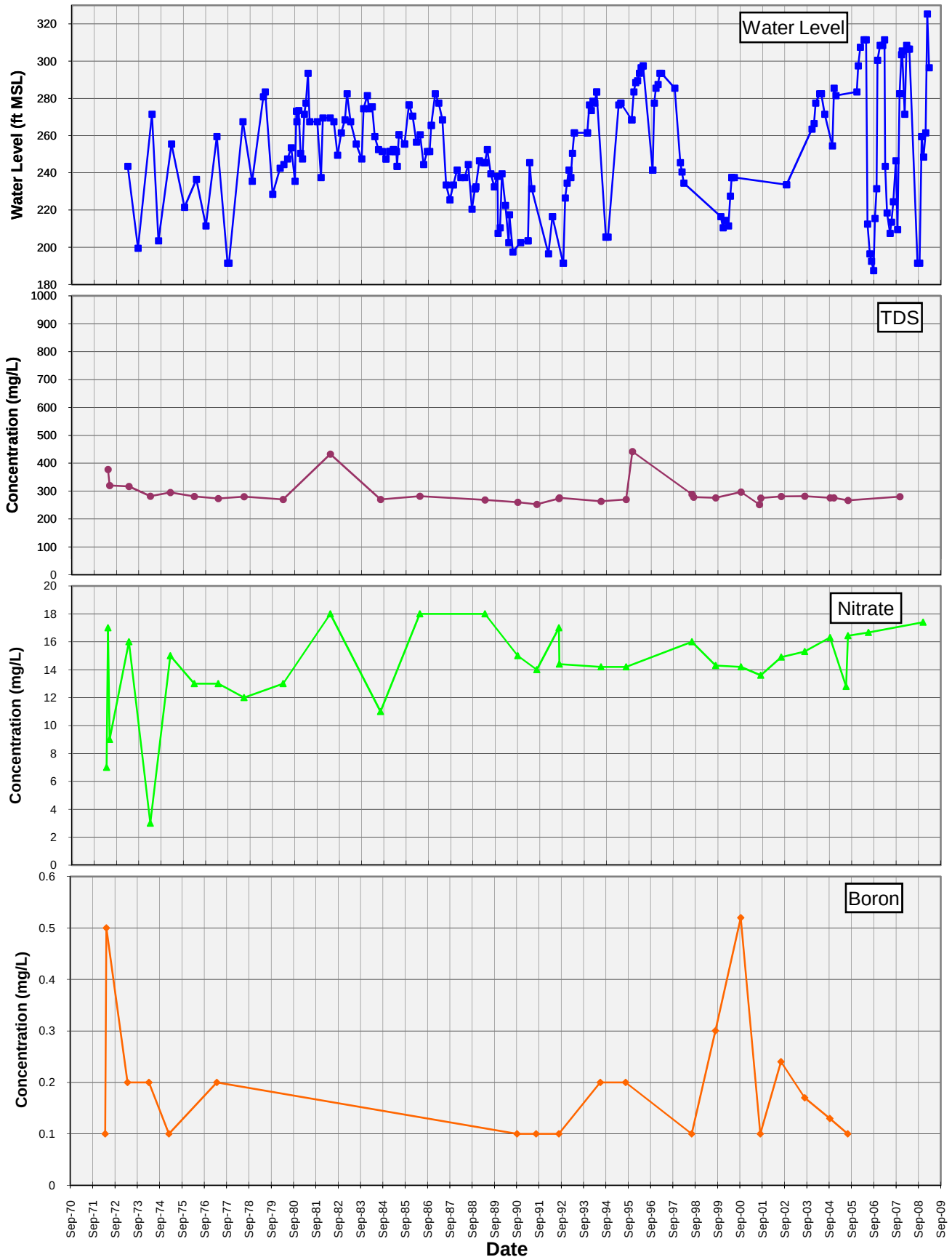
Figure 3.2-18
 Zone 7 Groundwater Program
 Hydro-Chemo Graph for 3S/1E 9M 3 (Mocho 2)
 Amador West Subbasin - Lower Aquifer



Well Depth = 575'; Wellhead Elevation = 344'; Well Screen Depth: 250 to 570' bgs.
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Figure 3.2-18

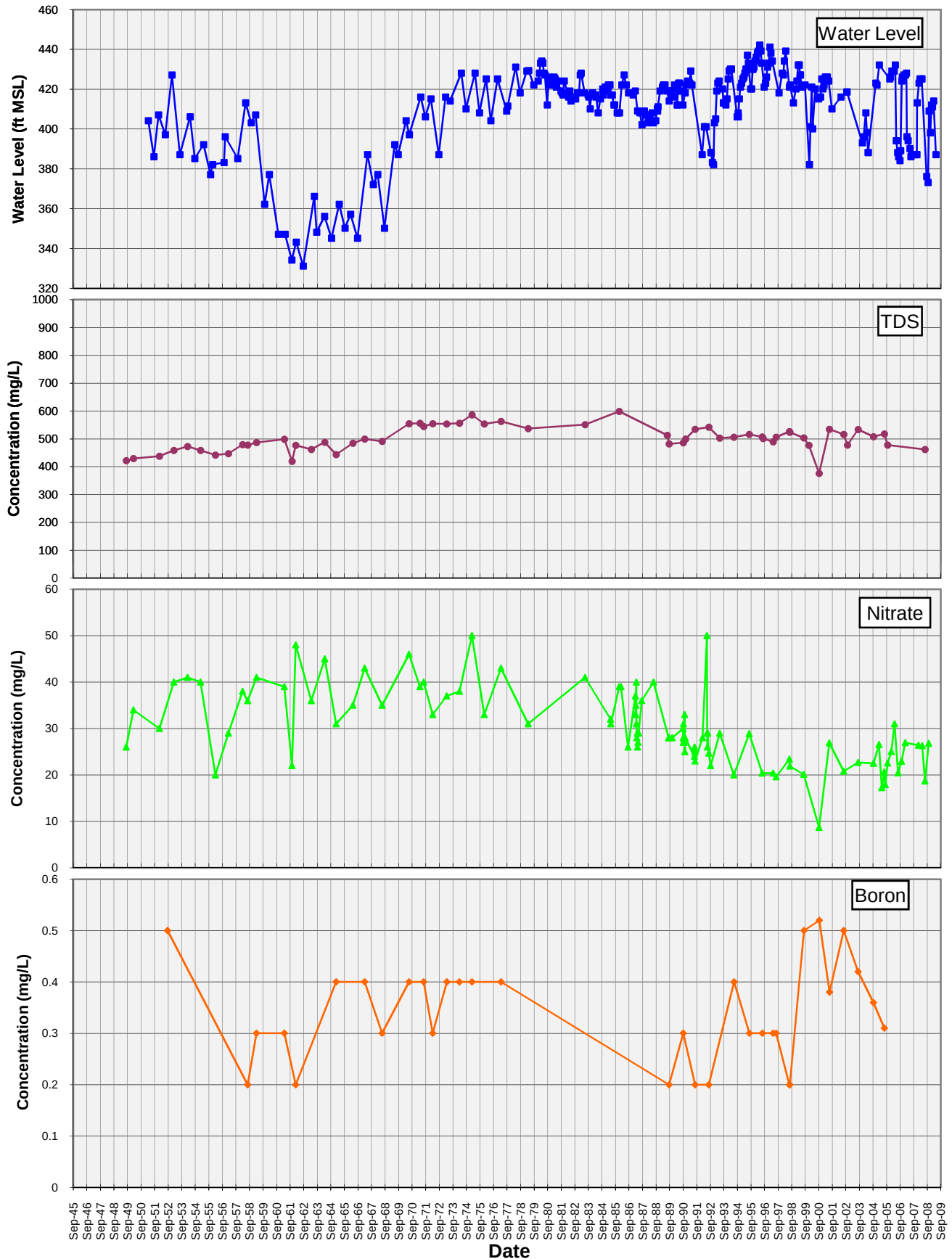
Figure 3.2-19
 Zone 7 Groundwater Program
 Hydro-Chemo Graph for 3S/2E 7P 3
 Amador East Subbasin - Lower Aquifer



Well Depth = 510'; Wellhead Elevation = 429'; Well Screen Depth: 300 to 490' bgs.
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FIGURE 3.2-19

Figure 3.2-20
 Zone 7 Groundwater Program
 Hydro-Chemo Graph for 3S/2E 8P 1
 Mocho II Subbasin - Lower Aquifer



Well Depth = 273'; Wellhead Elevation = 466'; Well Screen Depth: 122 to 263' bgs.
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FIGURE 3.2-20

Figure 3.2-21
Zone 7 Water Agency
Graphs of Hardness and TDS in Mocho Wellfield

