

5 Groundwater Elevations

5.1 Program Description

This section describes Zone 7's Groundwater Elevation Monitoring Program for the 2014 WY (October 1, 2013 through September 30, 2014). This program includes the measurement of groundwater levels in monitoring and production wells to assess groundwater supplies (discussed in *Section 10*) and define management needs to achieve sustainability (discussed in *Section 11*). The program focuses on the Main Basin, where groundwater is pumped for municipal uses. However, water levels are also measured in the fringe basins, as well as the Sunol Basin and the Tracy sub-basin. Some of the data collected is submitted to DWR under their California Statewide Groundwater Elevation Monitoring (CASGEM) program.

5.1.1 Objectives

There were a total of 237 wells in the Zone 7 groundwater elevation monitoring program during the 2014 WY (locations shown on *Figure 5-1*). Each well in the program was monitored to fulfill one or more specific objectives. *Figure 5-2* lists all of the wells in the program, the objective(s) of monitoring each well, and the frequency of monitoring for each objective. The objectives are summarized below. Well construction details for each of the wells in the program are shown in *Figure 5-3*.

Zone 7's Water Level Monitoring – groundwater level measurements are made twice per year during seasonal extremes (i.e., spring highs and fall lows) for storage tracking. Water level measurements are also measured monthly in some wells to track and adjust recharge and pumping operations, and identify seasonal peaks when semi-annual water level measurements should be scheduled.

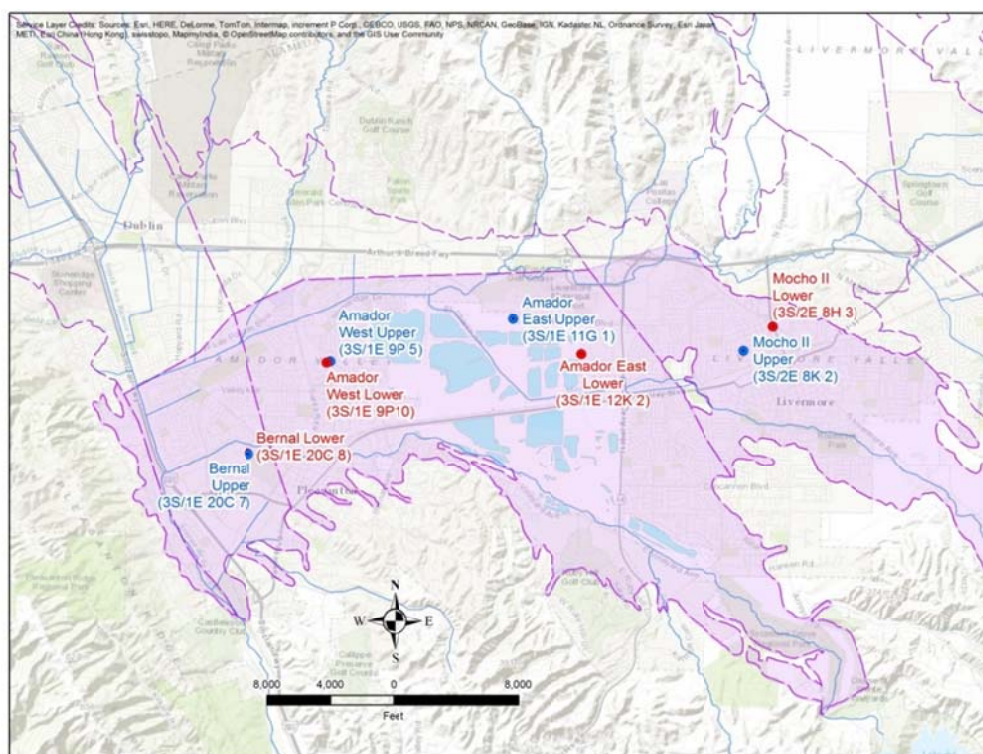
Del Valle Water Rights (WR) – continuous or monthly monitoring of water levels and semi-annual sampling for water quality is required for certain wells to maintain Zone 7's Arroyo Valle water rights (see *Section 6* for discussion of the water quality results.)

Municipal Supply Well (Mu) – continuous or monthly monitoring of water levels and quarterly or annually sampling for water quality and drinking water operating permit compliance is conducted in the municipal supply wells (see *Section 6* discussion of the water quality results.)

Key Wells (Key) – monthly monitoring of water levels in index wells in the three largest subbasins of the Main Basin (Bernal, Amador, and Mocho II). Because the Amador Sub-basin is over twice the size of the other two subbasins, it is split into the Amador West and Amador East Sub-basins. Starting in the 2008 WY, the Key Wells objective was amended to monitor conditions in upper and lower aquifers in each subbasin separately.

The monitoring wells used for the Key Well Program in the 2014 WY are shown on the map below:

Figure 5-A: Map of Key Wells for the 2014 Water Year



Although water levels are measured monthly and plotted in the Key Well hydrographs, some of the Key Wells have pressure transducers and data recorders installed to collect water levels at 15-minute intervals. During the 2014 WY, four additional Key Wells were outfitted with new transducers and recorders, bringing the total number of Key Wells with transducers to seven (see *Figure 5-B* **Error! Reference source not found.** below). Only the Upper Amador East Key Well (3S/1E 11G 1) does not have a transducer.

Figure 5-B: Table of Key Wells for the 2014 Water Year

SubBasin	Key Well Name	Aquifer	Well Number
Bernal	Key_Bern_U	Upper	3S/1E 20C 7*
	Key_Bern_L	Lower	3S/1E 20C 8*†
Amador-West	Key_AmW_U	Upper	3S/1E 9P 5*†
	Key_AmW_L	Lower	3S/1E 9P10*†
Amador-East	Key_AmE_U	Upper	3S/1E 11G 1
	Key_AmE_L	Lower	3S/1E 12K 2*
Mocho II	Key_Mo2_U	Upper	3S/2E 8K 2*
	Key_Mo2_L	Lower	3S/2E 8H 3*†

* 15-minute water level data being recorded

† New recording pressure transducer installed during the 2014 Water Year

CASGEM – In 2012, DWR developed the CASGEM program to track groundwater elevations in California groundwater basins to satisfy the requirements under Water Code §10920, *et seq.* The program requires monitoring entities, such as Zone 7, to submit groundwater level data semiannually to DWR. Working collaboratively with DWR staff, Zone 7 selected the following ten wells (eight Key Wells plus two others) to represent overall groundwater elevations in the groundwater basin. The wells included in the program are:

- 3S/1E 6F 3 (northern portion of Fringe Basin, upper aquifer)
- 3S/1E 9P 5 (Amador West Upper Key Well)
- 3S/1E 9P10 (Amador West Lower Key Well)
- 3S/1E 11G 1 (Amador East Upper Key Well)
- 3S/1E 12K 2 (Amador East Lower Key Well)
- 3S/1E 20C 7 (Bernal Upper Key Well)
- 3S/1E 20C 8 (Bernal Lower Key Well)
- 3S/2E 8H 3 (Mocho II Lower Key Well)
- 3S/2E 8K 2 (Mocho II Upper Key Well)
- 3S/2E 19D 7 (southern portion of Amador, lower aquifer)

The locations of these CASGEM wells are shown in *Figure 5-C* below.

Beginning in the 2014 WY, Zone 7 also became the official CASGEM monitoring entity for the eastern Alameda County portion of the San Joaquin Valley Basin-Tracy Subbasin to maintain its eligibility for future DWR-administered grants. The wells included in this East County program are:

- 1S/4E 31P5
- 2S/3E 1D1

The locations of these two wells are shown in *Figure 5-D* below.

Although the Sunol Groundwater Basin is also within Zone 7's jurisdiction, there is no current CASGEM compliance requirement for this groundwater basin because it has been designated as "very low priority" by DWR. Currently only "high" and "medium" priority groundwater basins are required to participate CASGEM participation.

The 2014 WY CASGEM data for the Livermore Groundwater Basin and the Alameda County portion of the Tracy Subbasin were uploaded to DWR's CASGEM website (www.water.ca.gov/groundwater/casgem/) along with all available historical groundwater level data for the CASGEM wells included in the Zone 7 database.

Figure 5-C: Map of CASGEM Wells in Main Basin for 2014 WY

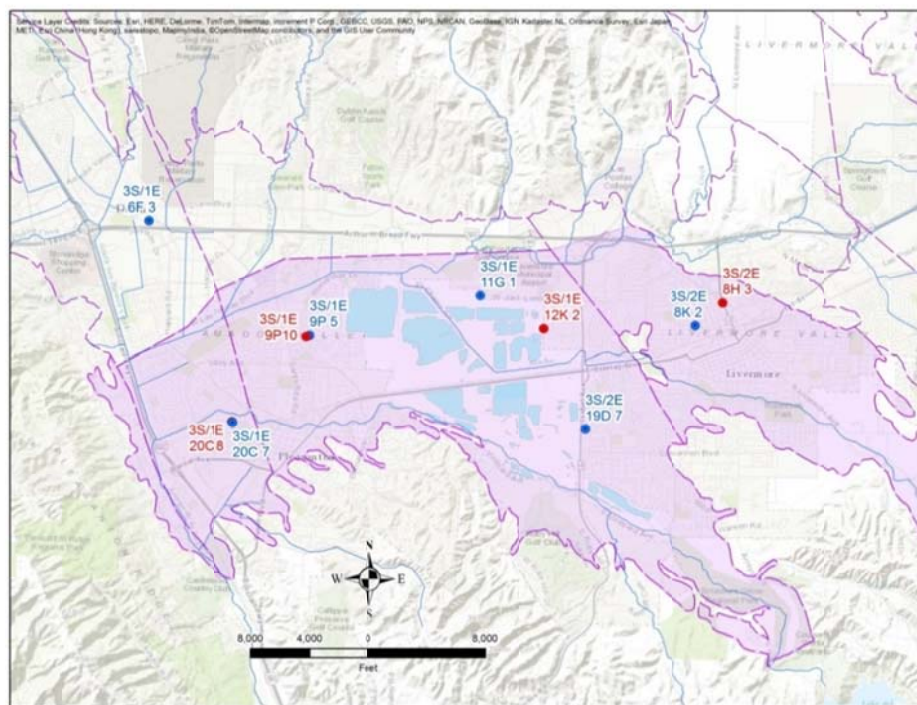
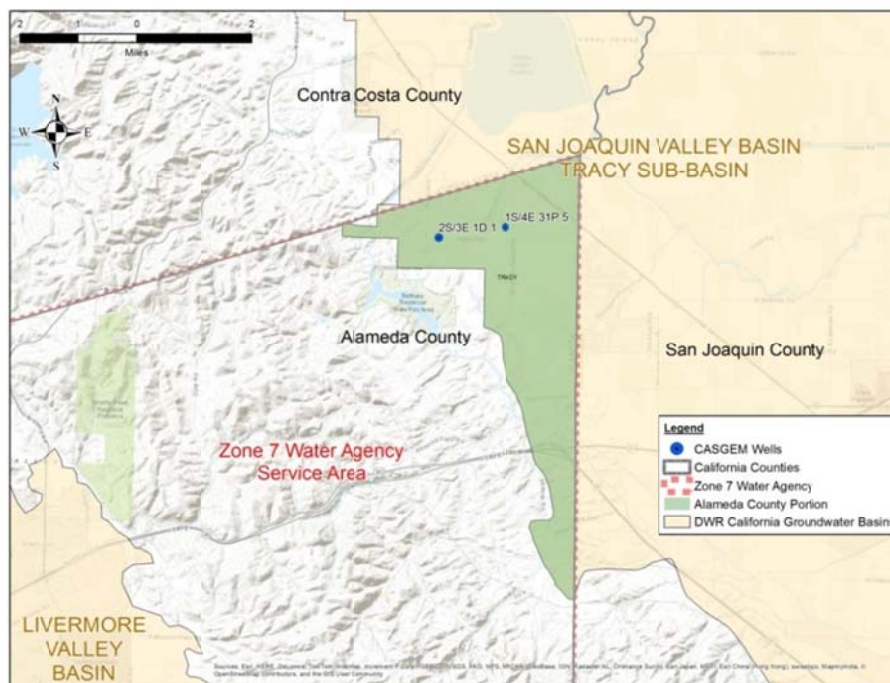


Figure 5-D: Map of CASGEM Wells in Alameda Co. Portion of Tracy Subbasin for WY 2014



Historical Lows – “Historical lows” refers to a piezometric surface that was created from a compilation of historical-low groundwater elevations in various wells in the basin (*Figure 5-4*). These data are typically from the 1960s, 1977, or 1987-1992 drought periods when groundwater elevations were lowest in the basin. Note that these levels also reflect groundwater use at the time.

In 2005, Zone 7 adopted mitigation measures for its Well Master Plan (WMP) that include maintaining groundwater elevations above the historical lows, and to the extent operationally feasible, reducing pumping or shifting to wells having higher groundwater elevations when groundwater elevations approach the historical lows as an extremely conservative way to reduce the risk for groundwater pumping-induced subsidence (Mitigation Measures 3.3-1b and 3.3-1c). As discussed in *Section 7*, there is no history of subsidence in the valley. It should be noted that Zone 7 uses static condition water level data from local monitoring wells rather than pumping level data to gauge the height above the historical lows. Zone 7 has a Surface Elevation Monitoring Program as part of this mitigation (see *Section 7*).

The historical low surface used in the Zone 7 WMP (WMP, *Zone 7, 2003*) and associated Environmental Impact Report (EIR) (*Zone 7, 2005b*) was revised in 2009 and converted to a surface grid (i.e., *ArcGIS* raster image) for comparison with end-of-water-year elevations and spatial analyses. The surface was modified again slightly in January 2014 as additional information became available. See *Section 5.2.2* for a discussion of groundwater elevations relative to the historical low surface.

Groundwater storage beneath the historical low surface has been estimated to be about 128,000 AF and is considered emergency reserves. The full-basin mark (last recorded in the 1983 and 1984 WYs) corresponds to a total storage volume of about 254,000 AF. The range from historical low to full-basin provides an operational storage of about 126,000 AF. See *Section 10.1* for additional discussion on operational storage.

Dublin San Ramon Services District (DSRSD) Wells – Zone 7 continued its data sharing agreement with DSRSD to obtain water levels and water quality samples from several of DSRSD’s wells listed in *Figure 5-E* below which were installed to monitor the impacts, if any, from their facultative sludge lagoons and on-site sludge disposal operations in Pleasanton.

Figure 5-E: DSRSD Wells Included in the 2014 Water Year Groundwater Elevation 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 reported to Zone 7. The results are included in *Section 5.2 2014 Results*.

5.1.2 Program Changes for 2014

In July 2014, Zone 7 added groundwater elevation recorders to ten wells currently in the program including four Key Wells. Also, between May and September 2014, Zone 7 measured groundwater elevations in 24 wells weekly to closely monitor summer drought water levels and weekly pumping totals.

Monitoring Program Well 3S/2E 7N 1 was destroyed in July 2012 as part of the improvements at the Isabel Avenue Underpass at Stanley Avenue. A new monitoring well, 3S/2E 7N 2, was installed approximately 40 feet east of the destroyed well in November 2013 and serves as a replacement for 3S/2E 7N 1 starting in the 2014 WY.

In October 2013, Concannon Winery installed two monitoring wells (3S/2E 15L 1 and 3S/2E 15M 2) along the northern edge of their property in Livermore and downgradient of their main operations facility. These wells were added to Zone 7's Groundwater Elevation and Quality Programs for the 2014 WY.

5.2 2014 Results

As is usually the case, the 2014 WY water levels varied with seasonal recharge and extraction. Typically the highest water levels are found at the end of the rainy season and lowest at the end of the high demand summer/fall seasons. In general, for the first half of the 2014 WY, groundwater elevations rose due to rainfall recharge and subsequent reduced water pumping. However, during the second half of the water year, water elevations leveled off and then dropped as rainfall decreased and water demand increased.

Key Well water levels in the Bernal and Amador Subbasins, from which Zone 7 pumps, ended the year approximately 6 to 21 feet below those observed at the end of the 2013 WY (see *Figure 5-F* below). Lower aquifer Key Wells in these subbasins had water levels that were 4.5 to 93 feet above historical lows at the end of the 2014 WY (compared to 27 to 101 feet above historical lows at the end of the 2013 WY).

Figure 5-F: Change in Groundwater Elevation in Key Wells from Fall 2013 to Fall 2014

Subbasin	Upper Aquifer (ft)	Lower Aquifer (ft)
Bernal	Down 6.4	Down 7.6
Amador West	Down 6.3	Down 14.4
Amador East	Down 8.2	Down 20.7
Mocho II	Down 13.7	Down 18.3

Upper and lower aquifer Key Well water levels in Mocho II Subbasin dropped and ended 13.7 and 18.3 feet, respectively, below water levels at the end of the 2013 WY. The water elevations in the Mocho II lower aquifer Key Well at the end of the 2014 WY was 125.5 feet above historical lows.

Figure 5-5 contains a tabulation of spring (collected in April 2014) and fall (collected in September 2014) groundwater elevations for all program wells and includes a comparison with water levels of the previous fall. *Figure 5-6* shows long-term hydrographs from each of the eight Key Wells. *Figure 5-7* shows graphs of groundwater elevations in the Key Wells along with Main Basin inflow/outflow components over the last two years.

5.2.1 Upper Aquifer Zone

Figure 5-8 and *Figure 5-9* show groundwater elevations in the Upper Aquifer for the Spring 2014 WY (measured in April 2014) and Fall 2014 WY (measured in September 2014) water level measurement events, respectively. Both of these figures include water levels from mining area ponds (*Section 4*), located in the central and southern portions of the Amador Subbasin, which are believed to be connected 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.

During the 2014 WY, the groundwater gradient in the Upper Aquifer was unchanged from previous years and was generally from east to west towards the Bernal Subbasin, then 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. Upper aquifer water levels in the western portion of the Main Basin (Bernal Subbasin) experienced a drop of up to 9.5 feet from Fall 2013 to Fall 2014. In the central (Amador Subbasin) and eastern (Mocho II Subbasin) portions of the Main Basin, water levels in

the upper aquifer dropped (up to 34 and 23 feet respectively) because of the low rainfall and stream recharge volumes during the water year.

For the entire water year, water levels in wells near the Arroyo De La Laguna in the southwestern portion of the Bernal Subbasin (as indicated primarily by the Bernal Upper Key Well, 3S/1E 20C 7, and Well 3S/1E 29M 4) remained below the elevation at which basin overflow occurs (approximately 295 feet above mean sea level [msl]). Consequently, there was no basin overflow from the upper aquifer into the Arroyo De La Laguna during the 2014 WY.

5.2.2 Lower Aquifer Zone

Figure 5-10 and *Figure 5-11* show groundwater elevations in the lower aquifer of the Main Basin for Spring (measured in April 2014) and Fall (measured in September 2014) of the 2014 WY, respectively. These maps show a piezometric 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 and Amador Subbasins in the lower aquifer ranged from 0.001 to 0.05 with groundwater flowing generally westward along the longitudinal axis of the Livermore-Amador Valley. In the Bernal Subbasin, the gradient (typically less than 0.01) was slightly to the north and east towards the Hopyard and Mocho Wellfields. 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. These features define the sub-basin boundaries between the Mocho II and Amador Subbasins, and between the Dublin and Camp fringe basins and the Main Basin. Groundwater levels are significantly higher on the upgradient sides of these partial barriers, but it is believed that groundwater cascades across these linear features providing some subsurface recharge for the adjacent subbasin.

1. Groundwater elevations in the Mocho II Subbasin were about 105 feet higher than those across the Livermore Fault in the Amador Subbasin.
2. Groundwater elevations in the Dublin/Camp/Bishop Subbasins were 40 to 60 feet higher than those across the Main Basin Boundary to the south (a.k.a., the Parks Boundary).

Lower aquifer water levels throughout the Main Basin dropped (up to 34 feet) from Fall 2013 to Fall 2014, especially near municipal pumping wells.

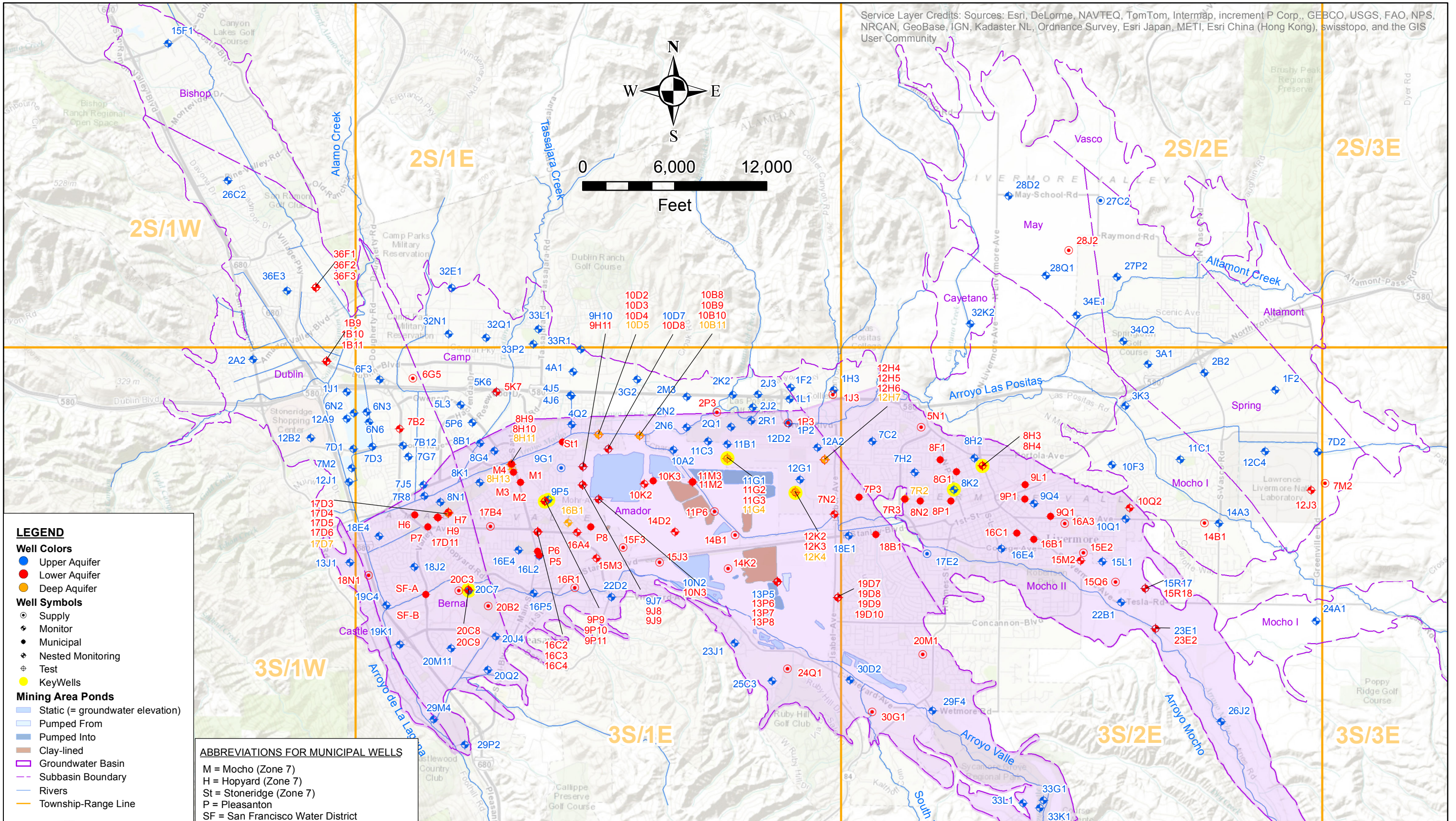
Figure 5-4 shows the estimated historical low surface for the Main Basin lower aquifer created from a composite of select historical lowest low water levels updated in March 2014.

Figure 5-12 shows the difference between groundwater elevations measured in the lower aquifer in Fall 2014 and historical lows as defined in *Figure 5-4*. Water levels in the vicinity of Zone 7's municipal wells were 25 to 69 feet above historical lows at the end of the water year. While

unrelated to the WMP objectives, monitoring suggested that in the south-central portion of the Main Basin water levels reached the estimated historical low (less than 2 feet below). This area is in the vicinity of the City of Pleasanton's wells and had a groundwater depression of about 20 feet, while at the same time; its estimated historical low elevations are about 10 feet higher than the surrounding area.

Further to the southwest, in the central and southern portions of the Bernal Subbasin, water levels remain at greater than 78 feet above historical lows. Only San Francisco Public Utilities Commission (SFPUC) is using this part of the Bernal Subbasin for municipal supply (supplying Castlewood). The northeastern and central portions of the Amador Subbasin also experienced low water levels. California Water Service (CWS) shifted some of their pumping from their two Amador East wells to other wells located in the Mocho II subbasin to help maintain groundwater levels above the historical lows. Zone 7 also used its Chain of Lakes (COL) wells, located in the central Amador Subbasin, sparingly to help keep groundwater levels above the historical lows in this area. In the eastern part of the Main Basin (Mocho II Subbasin), where the majority of the CWS wells are located, the end of year groundwater levels were 45 to 106 feet above their respective historical lows.

This Page Intentionally Left Blank



ZONE 7 WATER AGENCY
100 North Canyons Parkway
Livermore, CA

DRAWN: TR

REVIEWED: CW

FILE: E:\MONITOR\GM\2014WY\AnnualReport2014\Fig5-01-MapAllWells14.mxd

SCALE: 1 in = 6,000 ft

DATE: Jan 20, 2015

Figure 5-1
Map of Wells in
2014 Groundwater Elevation Program
Livermore Valley Groundwater Basin



**FIGURE 5-2
GROUNDWATER ELEVATION PROGRAM
WELLS WITH MONITORING FREQUENCY
2014 WATER YEAR**

SITE INFORMATION				Monitoring Frequency	Other GW Elevation Programs			
State Name	Well Name	Subbasin	Aq		WR	CASGEM	Muni	Key
1S/4E 31P 5	CASGEM Tracy WAPA	Tracy	U	SA		√		
2S/1E 32E 1	End of Arnold Rd	Camp	U	SA				
2S/1E 32N 1	Camp Parks	Camp	U	SA				
2S/1E 32Q 1	Summer Glen Dr	Camp	U	SA				
2S/1E 33L 1	Gleason Dr @ Tassajara	Camp	U	SA				
2S/1E 33P 2	Central Pkwy at Emerald Glen	Camp	U	SA				
2S/1E 33R 1	Central Pkwy @ Grafton	Camp	U	SA				
2S/1W 15F 1	BOLLINGER	Bishop	U	SA				
2S/1W 26C 2	PINE VALLEY	Dublin	U	SA				
2S/1W 36E 3	Kolb Park	Dublin	U	SA				
2S/1W 36F 1	Dublin High shallow	Dublin	L	SA				
2S/1W 36F 2	Dublin High mid	Dublin	L	SA				
2S/1W 36F 3	Dublin High deep	Dublin	L	SA				
2S/2E 27C 2	Dagnino Rd	Spring	U	SA				
2S/2E 27P 2	hartford ave east	Spring	U	SA				
2S/2E 28D 2	May School	May	U	SA				
2S/2E 28J 2	FCC Well	May	L	SA				
2S/2E 28Q 1	hartford ave	May	U	SA				
2S/2E 32K 2	jenson's N liv. Ave	Cayetano	U	SA				
2S/2E 34E 1	mud city	May	U	SA				
2S/2E 34Q 2	Hollyhock & Crocus	Spring	U	SA				
2S/3E 1D 1	CASGEM Tracy PGE	Tracy	U	SA		√		
3S/1E 1F 2	Constitution Dr	Mocho II	U	SA				
3S/1E 1H 3	Collier Canyon g1	Mocho II	U	SA				
3S/1E 1J 3	Triad Vineyard	Mocho II	L	SA				
3S/1E 1L 1	Kitty Hawk	Camp	U	SA				
3S/1E 1P 2	airport gas g5	Amador	U	SA				
3S/1E 1P 3	New airport well	Amador	L	SA				
3S/1E 2J 2	Maint. Bldg	Camp	U	SA				
3S/1E 2J 3	Doolan Rd East	Camp	U	SA				
3S/1E 2K 2	Doolan Rd West	Camp	U	SA				
3S/1E 2M 3	Friesman Rd North	Camp	U	SA				
3S/1E 2N 6	Friesman Rd South	Amador	U	SA				
3S/1E 2P 3	Crosswinds Church	Camp	L	SA				
3S/1E 2Q 1	LPGC #1	Amador	U	SA				
3S/1E 2R 1	Beebs	Amador	U	SA				
3S/1E 3G 2	fallon rd	Camp	U	SA				
3S/1E 4A 1	SMP-DUB-2	Camp	U	SA				
3S/1E 4J 5	Pimlico shallow	Camp	U	SA				
3S/1E 4J 6	Pimlico deep	Camp	U	SA				
3S/1E 4Q 2	gulfstream	Amador	U	SA				
3S/1E 5K 6	Rosewood shallow	Camp	U	SA				
3S/1E 5K 7	Rosewood deep	Camp	L	SA				
3S/1E 5L 3	Oracle	Camp	U	SA				

Aq = Aquifer: U = Upper; L = Lower; D = Deep Frequency: R = Recorder; M = Monthly; Q = Quarterly; SA = Semiannually; A = Annually

OTHER: WR = Water Rights; Muni = Municipal wells; Key = Key Wells

SITE INFORMATION				Monitoring Frequency	Other GW Elevation Programs			
State Name	Well Name	Subbasin	Aq		WR	CASGEM	Muni	Key
3S/1E 5P 6	Owens Park	Camp	U	SA				
3S/1E 6F 3	Dublin Ct	Dublin	U	SA		√		
3S/1E 6G 5	Nissan Repair	Dublin	L	SA				
3S/1E 6N 2	DSRSD MW-3	Dublin	U	SA				
3S/1E 6N 3	DSRSD MW-4	Dublin	U	SA				
3S/1E 6N 6	DSRSD NE-76	Dublin	U	SA				
3S/1E 7B 2	Hopyard rd	Dublin	L	SA				
3S/1E 7B12	Hacienda Arch	Dublin	U	SA				
3S/1E 7D 1	DSRSD SW-75	Dublin	U	SA				
3S/1E 7D 3	DSRSD SE-70	Dublin	U	SA				
3S/1E 7G 7	Chabot Well	Dublin	U	SA				
3S/1E 7J 5	Thomas Hart School	Dublin	U	SA				
3S/1E 7M 2	DSRSD Sub	Dublin	U	SA				
3S/1E 7R 8	Mocho Canal North at Willow	Bernal	U	SA				
3S/1E 8B 1	Lizard Well	Amador	U	SA				
3S/1E 8G 4	Apache	Amador	U	SA				
3S/1E 8H 9	Mocho 4 Nested Shallow	Amador	L	M				
3S/1E 8H10	Mocho 4 Nested Middle	Amador	L	M				
3S/1E 8H11	Mocho 4 Nested deep	Amador	D	M				
3S/1E 8H13	Mocho 3 mon	Amador	D	M				
3S/1E 8H18	Mocho 4	Amador	L	R			√	
3S/1E 8K 1	sutter gate	Amador	U	SA				
3S/1E 8N 1	sports park	Bernal	U	SA				
3S/1E 9B 1	Stoneridge	Amador	L	R			√	
3S/1E 9G 1	3775 trenery - Kamp	Amador	U	SA				
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	SA				
3S/1E 9J 8	SW Lake I Middle	Amador	L	SA				
3S/1E 9J 9	SW Lake I Deep	Amador	L	SA				
3S/1E 9M 2	Mocho 1	Amador	L				√	
3S/1E 9M 3	Mocho 2	Amador	L	M			√	
3S/1E 9M 4	Mocho 3	Amador	L	R			√	
3S/1E 9P 5	Key_AmW_U (Mohr Key)	Amador	U	M		√		√
3S/1E 9P 9	Mohr Ave Shallow	Amador	L	M				
3S/1E 9P10	Key_AmW_L	Amador	L	M		√		√
3S/1E 9P11	Mohr Ave Deep	Amador	L	M				
3S/1E 10A 2	El C harro Rd	Amador	U	SA				
3S/1E 10B 8	Kaiser Rd Shallow	Amador	L	SA				
3S/1E 10B 9	Kaiser Rd Middle 1	Amador	L	SA				
3S/1E 10B10	Kaiser Rd Middle 2	Amador	L	SA				
3S/1E 10B11	Kaiser Rd Deep	Amador	D	SA				
3S/1E 10D 2	Stoneridge Shallow	Amador	L	SA				
3S/1E 10D 3	Stoneridge Middle 1	Amador	L	SA				
3S/1E 10D 4	Stoneridge Middle 2	Amador	L	SA				
3S/1E 10D 5	Stoneridge Deep	Amador	D	SA				
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	M				
3S/1E 10K 3	COL 1	Amador	L	M			√	
3S/1E 10N 2	South Lake I Shallow	Amador	U	SA				

Aq = Aquifer: U = Upper; L = Lower; D = Deep Frequency: R = Recorder; M = Monthly; Q = Quarterly; SA = Semiannually; A = Annually

OTHER: WR = Water Rights; Muni = Municipal wells; Key = Key Wells

SITE INFORMATION				Monitoring Frequency	Other GW Elevation Programs			
State Name	Well Name	Subbasin	Aq		WR	CASGEM	Muni	Key
3S/1E 10N 3	South Lake I Deep	Amador	L	SA				
3S/1E 11B 1	Airport West	Amador	U	SA				
3S/1E 11C 3	LAVWMA ROW	Amador	U	SA				
3S/1E 11G 1	Key_AmE_U	Amador	U	M		√		√
3S/1E 11G 2	Rancho Charro Middle 1	Amador	L	M				
3S/1E 11G 3	Rancho Charro Middle 2	Amador	L	M				
3S/1E 11G 4	Rancho Charro Deep	Amador	D	M				
3S/1E 11M 2	COL2 Monitoring	Amador	L	M				
3S/1E 11M 3	COL 2	Amador	L	M			√	
3S/1E 11P 6	New Jamieson Residence	Amador	L	SA				
3S/1E 12A 2	Airport South	Amador	U	SA				
3S/1E 12D 2	LWRP G6	Amador	U					
3S/1E 12G 1	Oaks Park Shallow	Amador	U	M				
3S/1E 12H 4	LWRP Shallow	Amador	L	SA				
3S/1E 12H 5	LWRP Middle 1	Amador	L	SA				
3S/1E 12H 6	LWRP Middle 2	Amador	L	SA				
3S/1E 12H 7	LWRP Deep	Amador	D	SA				
3S/1E 12K 2	Key_AmE_L	Amador	L	R		√		√
3S/1E 12K 3	Oaks Park Mid	Amador	L	M				
3S/1E 12K 4	Oaks Park Deep	Amador	D	M				
3S/1E 13P 5	LGA Grant Nested 1	Amador	U	M				
3S/1E 13P 6	LGA Grant Nested 2	Amador	L	M				
3S/1E 13P 7	LGA Grant Nested 3	Amador	L	M				
3S/1E 13P 8	LGA Grant Nested 4	Amador	L	M				
3S/1E 14B 1	Industrial Asphalt	Amador	L	SA				
3S/1E 14D 2	South Cope Lake	Amador	L	SA				
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				
3S/1E 15M 3	Bush/Valley South	Amador	L	SA				
3S/1E 16A 2	Pleas 8	AmWest	L	M			√	
3S/1E 16A 4	Bush/Valley Mid	Amador	L	SA				
3S/1E 16B 1	Bush/Valley North	Amador	D	SA				
3S/1E 16C 2	Santa Rita Valley Shallow	Amador	L	SA				
3S/1E 16C 3	Santa Rita Valley Middle	Amador	L	SA				
3S/1E 16C 4	Santa Rita Valley Deep	Amador	L	SA				
3S/1E 16E 4	black ave - cultural	Amador	U	SA				
3S/1E 16L 2	Pleas 4	Amador	U	M				
3S/1E 16L 5	Pleas 5	Amador	L	M			√	
3S/1E 16L 7	Pleas 6	Amador	L	M			√	
3S/1E 16P 5	Vervais Monitor	Amador	U	R	√			
3S/1E 16R 1	Stanley Berry Farm	Amador	L	SA				
3S/1E 17B 4	Casterson	Amador	L	SA				
3S/1E 17D 3	Hopyard Nested Shallow	Bernal	L	M				
3S/1E 17D 4	Hopyard Nested Middle 1	Bernal	L	M				
3S/1E 17D 5	Hopyard Nested Middle 2	Bernal	L	M				
3S/1E 17D 6	Hopyard Nested Middle 3	Bernal	L	M				
3S/1E 17D 7	Hopyard Nested Deep	Bernal	D	M				
3S/1E 17D10	Hopyard 7	Bernal	L	SA				
3S/1E 17D11	Hopyard 9 Monitoring Well	Bernal	L	SA				
3S/1E 17D12	Hopyard 9	Bernal	L	R			√	

Aq = Aquifer: U = Upper; L = Lower; D = Deep Frequency: R = Recorder; M = Monthly; Q = Quarterly; SA = Semiannually; A = Annually

OTHER: WR = Water Rights; Muni = Municipal wells; Key = Key Wells

SITE INFORMATION				Monitoring Frequency	Other GW Elevation Programs			
State Name	Well Name	Subbasin	Aq		WR	CASGEM	Muni	Key
3S/1E 18A 5	Pleas 7	Bernal	L	M			√	
3S/1E 18A 6	Hopyard 6	Bernal	L	R			√	
3S/1E 18E 4	Valley Trails II	Bernal	U	SA				
3S/1E 18J 2	camino segura	Bernal	U	SA				
3S/1E 18N 1	merritt	Bernal	L	SA				
3S/1E 19A10	SFWD South (B)	Bernal	L				√	
3S/1E 19A11	SFWD North (A)	Bernal	L	SA			√	
3S/1E 19C 4	del valle & laguna	Bernal	U	SA				
3S/1E 19K 1	680/bernal	Bernal	U	SA				
3S/1E 20B 2	Fairgrounds Potable	Bernal	L	SA			√	
3S/1E 20C 3	Fairgrounds Potable Backup	Bernal	L	SA			√	
3S/1E 20C 7	Key_Bern_U	Bernal	U	R	√	√		√
3S/1E 20C 8	Key_Bern_L	Bernal	L	M		√		√
3S/1E 20C 9	Fair Nested Deep	Bernal	L	M				
3S/1E 20J 4	civic center	Bernal	U	SA				
3S/1E 20M11	S.F "M"LINE	Bernal	U	SA				
3S/1E 20Q 2	20Q2	Bernal	U	SA				
3S/1E 22D 2	vineyard trailer	Amador	U	SA				
3S/1E 23J 1	1627 vineyard trailer	Amador	U	SA				
3S/1E 24Q 1	Ruby Hills	Amador	L	SA				
3S/1E 25C 3	Katz Winery Mansion	Amador	U	SA				
3S/1E 29M 4	f.c. channel	Castle	U	M	√*			
3S/1E 29P 2	castlewood dr	Bernal	U	SA				
3S/1W 1B 9	DSRSD Shallow	Dublin	L	SA				
3S/1W 1B10	DSRSD Middle	Dublin	L	SA				
3S/1W 1B11	DSRSD Deep	Dublin	L	SA				
3S/1W 1J 1	DSRSD MW-1	Dublin	U	SA				
3S/1W 2A 2	McNamara's	Dublin	U	SA				
3S/1W 12A 9	DSRSD NW-75	Dublin	U	SA				
3S/1W 12B 2	Stoneridge Mall Rd	Dublin	U	SA				
3S/1W 12J 1	DSRSD South	Dublin	U	SA				
3S/1W 13J 1	muirwood dr	Castle	U	SA				
3S/2E 1F 2	Brisa at Circuit City	Spring	U	SA				
3S/2E 2B 2	south front rd	Spring	U	SA				
3S/2E 3A 1	Bluebell	Spring	U	SA				
3S/2E 3K 3	first & S. front rd	Mocho I	U	SA				
3S/2E 5N 1	1037 portola - trailer	Mocho II	L	SA				
3S/2E 7C 2	york way - jaws - G4	Mocho II	U	SA				
3S/2E 7H 2	dakota	Mocho II	U	SA				
3S/2E 7N 2	Isabel & Arroyo Mocho	AmWest	L	SA				
3S/2E 7P 3	CWS STA 24	Amador	L	M			√	
3S/2E 7R 2	CWS STA 31 Monitoring	Mocho II	D	M				
3S/2E 7R 3	CWS STA 31	Mocho II	L	M			√	
3S/2E 8F 1	CWS STA 10	Mocho II	L	M			√	
3S/2E 8G 1	CWS STA 19	Mocho II	L	M			√	
3S/2E 8H 2	North k	Mocho II	U	SA				
3S/2E 8H 3	Key_Mo2_L	Mocho II	L	M		√		√
3S/2E 8H 4	N Liv Ave Deep	Mocho II	L	M				
3S/2E 8K 2	Key_Mo2_U (Livermore Key)	Mocho II	U	R		√		√
3S/2E 8N 2	CWS STA 14	Mocho II	L	M			√	
3S/2E 8P 1	CWS STA 8	Mocho II	L	M			√	

Aq = Aquifer: U = Upper; L = Lower; D = Deep Frequency: R = Recorder; M = Monthly; Q = Quarterly; SA = Semiannually; A = Annually

OTHER: WR = Water Rights; Muni = Municipal wells; Key = Key Wells

SITE INFORMATION				Montoring Frequency	Other GW Elevation Programs			
State Name	Well Name	Subbasin	Aq		WR	CASGEM	Muni	Key
3S/2E 9L 1	CWS STA 17	Mocho II	L	M				
3S/2E 9P 1	CWS STA 12	Mocho II	L	M			√	
3S/2E 9Q 1	CWS STA 9	Mocho II	L	M			√	
3S/2E 9Q 4	school st	Mocho II	U	SA				
3S/2E 10F 3	hexcel	Mocho I	U	SA				
3S/2E 10Q 1	almond	Mocho II	U	SA				
3S/2E 10Q 2	LLNL W-703	Mocho II	L	SA				
3S/2E 11C 1	joan way	Mocho I	U	SA				
3S/2E 12C 4	LLNL W-486	Spring	U	SA				
3S/2E 12J 3	LLNL W-017A	Spring	L	SA				
3S/2E 14A 3	S. vasco @east ave	Mocho I	U	SA				
3S/2E 14B 1	5763 east ave	Mocho I	L	SA				
3S/2E 15E 2	Retzlaff Winery	Mocho II	L	SA				
3S/2E 15L 1	Concannon2	Mocho II	U	SA				
3S/2E 15M 2	Concannon1	Mocho II	L	SA				
3S/2E 15Q 6	Concannon	Mocho II	L	SA				
3S/2E 15R17	Buena Vista Shallow	Mocho II	U	SA				
3S/2E 15R18	Buena Vista Deep	Mocho II	L	SA				
3S/2E 16A 3	Memory Gardens	Mocho II	L	SA				
3S/2E 16B 1	CWS STA 5	Mocho II	L	M			√	
3S/2E 16C 1	CWS STA 15	Mocho II	L	M			√	
3S/2E 16E 4	pepper tree	Mocho II	U	SA				
3S/2E 17E 2	Mocho Street	Mocho II	U	SA				
3S/2E 18B 1	CWS STA 20	Amador	L	M			√	
3S/2E 18E 1	E. stanley	Amador	U	SA				
3S/2E 19D 7	Isabel Shallow	Amador	U	SA		√		
3S/2E 19D 8	Isabel Middle 1	Amador	L	SA				
3S/2E 19D 9	Isabel Middle 2	Amador	L	SA				
3S/2E 19D10	Isabel Deep	Amador	L	SA				
3S/2E 20M 1	Alden Lane	Amador	L	SA				
3S/2E 22B 1	grapes	Mocho II	U	SA				
3S/2E 23E 1	Mines Nested Shallow	Mocho II	U	SA				
3S/2E 23E 2	Mines Nested Deep	Mocho II	L	SA				
3S/2E 24A 1	S. greenville	Mocho I	U	SA				
3S/2E 26J 2	mines rd	Mocho II	U	SA				
3S/2E 29F 4	usgs wetmore	Amador	U	M	√			
3S/2E 30D 2	vineyard	Amador	U	R	√*			
3S/2E 30G 1	genesis farms	Amador	L	SA				
3S/2E 33G 1	crohare	Amador	U	M	√			
3S/2E 33K 1	VA	Amador	U	Q				
3S/2E 33L 1	VA/CROHARE FENCE	Amador	U	Q				
3S/3E 7D 2	7D 2	Spring	U	SA				
3S/3E 7M 2	lupin way	Spring	L	SA				
TOTALS:				237	6	12	28	8

Aq = Aquifer: U = Upper; L = Lower; D = Deep Frequency: R = Recorder; M = Monthly; Q = Quarterly; SA = Semiannually; A = Annually

OTHER: WR = Water Rights; Muni = Municipal wells; Key = Key Wells



**FIGURE 5-3
GROUNDWATER PROGRAM
WELL CONSTRUCTION DETAILS
2014 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>TD Dia</i>			<i>Perf</i>
1S/4E 31P 5	monitor	CASGEM Tracy WAPA	WESTERN AREA POWER A	Tracy	Upper	60	24	4	8	- 23
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	358.5	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	406.53	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
2S/3E 1D 1	irrigation	CASGEM Tracy PGE	PG&E	Tracy	Upper	90	80	6	40	- 80
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	supply	New airport well	CITY OF LIVERMORE	Amador	Lower	394.44	480	12	245	- 460
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 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

<i>Site</i>	<i>Type</i>	<i>Other Name</i>	<i>Owner</i>	<i>Basin</i>	<i>Aquifer</i>	<i>RP</i>	<i>TD Dia</i>	<i>Perf</i>
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	47 - 67
3S/1E 6N 3	monitor	DSRSD MW-4	DSRSD	Dublin	Upper	340.74	72	52 - 72
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 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	338.53	240 2	210 - 230
3S/1E 8H10	nested	Mocho 4 Nested Middle	DSRSD	Amador	Lower	339.26	440 2	290 - 430
3S/1E 8H11	nested	Mocho 4 Nested deep	DSRSD	Amador	Deep	339.26	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	305 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 2	monitor	El C harro Rd	ZONE 7	Amador	Upper	367.35	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	349.32	212 2	182 - 212
3S/1E 10D 3	nested	Stoneridge Middle 1	DSRSD	Amador	Lower	349.28	322 2	262 - 312
3S/1E 10D 4	nested	Stoneridge Middle 2	DSRSD	Amador	Lower	349.3	616 2	366 - 606
3S/1E 10D 5	nested	Stoneridge Deep	DSRSD	Amador	Deep	349.32	790 2	710 - 780
3S/1E 10D 7	nested	North Lake I Shallow	ZONE 7	Amador	Upper	361.06	145 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	##### - 585.6
3S/1E 10K 3	muni	COL 1	ZONE 7	Amador	Lower	363.79	530 18	205 - 530
3S/1E 10N 2	nested	South Lake I Shallow	ZONE 7	Amador	Upper	358.16	195 2	125 - 145
3S/1E 10N 3	nested	South Lake I Deep	ZONE 7	Amador	Lower	358	195 2	170 - 190
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

<i>Site</i>	<i>Type</i>	<i>Other Name</i>	<i>Owner</i>	<i>Basin</i>	<i>Aquifer</i>	<i>RP</i>	<i>TD Dia</i>	<i>Perf</i>
3S/1E 11G 1	nested	Key_AmE_U	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	369.24	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	Key_AmE_L	ZONE 7	Amador	Lower	406.29	300 2	210 - 295
3S/1E 12K 3	nested	Oaks Park Mid	ZONE 7	Amador	Lower	406.83	475 2	355 - 470
3S/1E 12K 4	nested	Oaks Park Deep	ZONE 7	Amador	Deep	406.71	575 2	550 - 570
3S/1E 13P 5	nested	LGA Grant Nested 1	ZONE 7	Amador	Upper	380.78	135 2	110 - 130
3S/1E 13P 6	nested	LGA Grant Nested 2	ZONE 7	Amador	Lower	380.76	255 2	230 - 250
3S/1E 13P 7	nested	LGA Grant Nested 3	ZONE 7	Amador	Lower	380.76	375 2	350 - 370
3S/1E 13P 8	nested	LGA Grant Nested 4	ZONE 7	Amador	Lower	380.76	605 2	580 - 600
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 4	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
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	323.02	71 2.5	61 - 66

<i>Site</i>	<i>Type</i>	<i>Other Name</i>	<i>Owner</i>	<i>Basin</i>	<i>Aquifer</i>	<i>RP</i>	<i>TD Dia</i>	<i>Perf</i>
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	supply	Fairgrounds Potable	ALAMEDA COUNTY	Bernal	Lower	342.62	500 12	218 - 500
3S/1E 20C 3	supply	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	nested	Key_Bern_L	ZONE 7	Bernal	Lower	338.67	315 2	295 - 315
3S/1E 20C 9	nested	Fair Nested Deep	ZONE 7	Bernal	Lower	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	333.56	162 2	122 - 152
3S/1W 1B10	nested	DSRSD Middle	DSRSD	Dublin	Lower	333.57	414 2	274 - 404
3S/1W 1B11	nested	DSRSD Deep	DSRSD	Dublin	Lower	333.74	560 2	480 - 550
3S/1W 1J 1	monitor	DSRSD MW-1	DSRSD	Dublin	Upper	334.36	70	47 - 64
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 2	monitor	Isabel & Arroyo Mocho	ZONE 7	AmWest	Lower	422	162 2	132 - 152
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	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	nested	Key_Mo2_L	ZONE 7	Mocho II	Lower	477.25	195 2	170 - 190
3S/2E 8H 4	nested	N Liv Ave Deep	ZONE 7	Mocho II	Lower	476.97	385 2	360 - 380
3S/2E 8K 2	monitor	Key_Mo2_U (Livermore Key)	ZONE 7	Mocho II	Upper	464.78	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 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

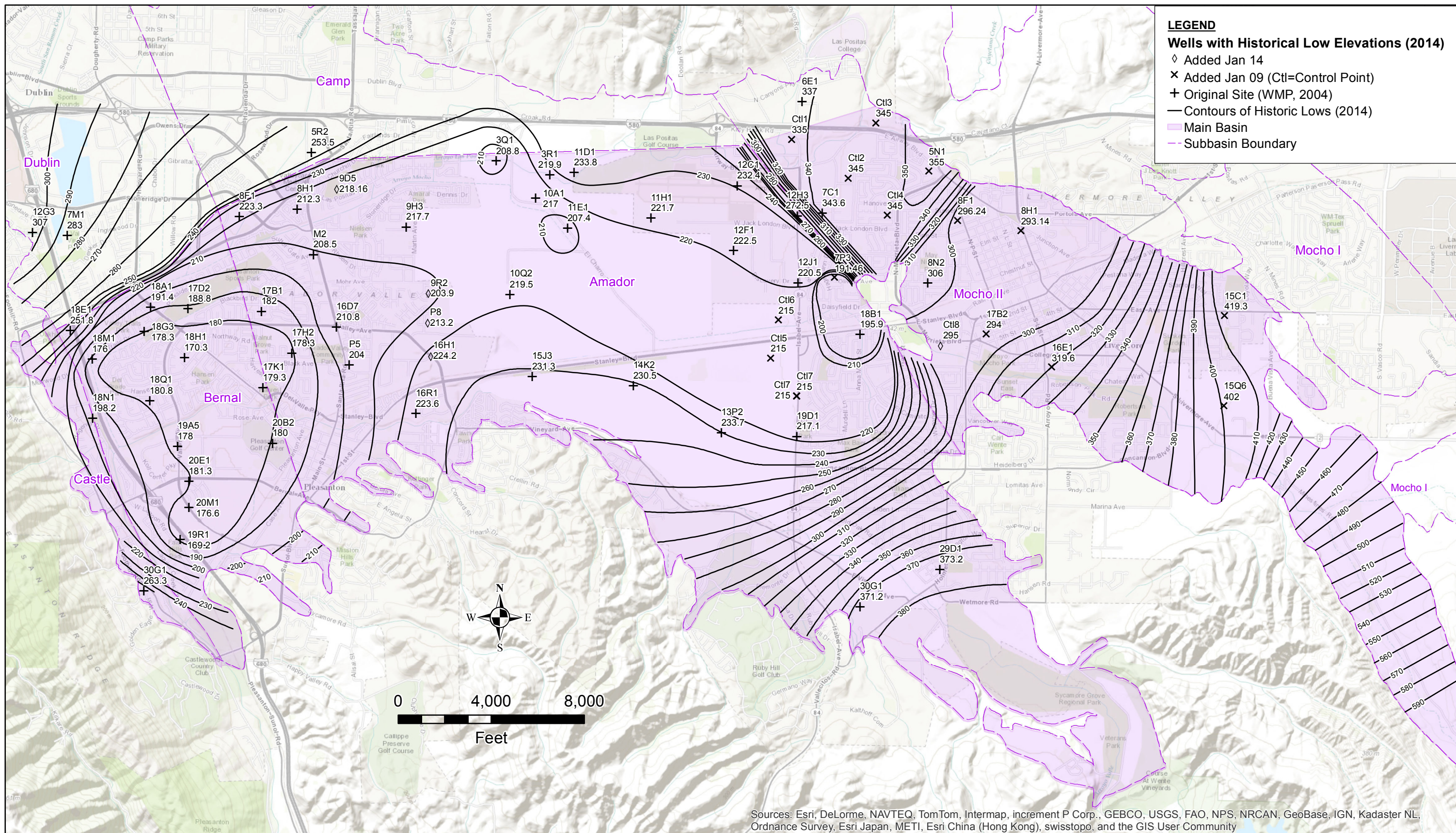
Site	Type	Other Name	Owner	Basin	Aquifer	RP	TD	Dia	Perf
3S/2E 10Q 1	monitor	almond	ZONE 7	Mocho II	Upper	555.36	43.5	2.5	34 - 39
3S/2E 10Q 2	monitor	LLNL W-703	LLNL	Mocho II	Lower	549.33	325	4.5	298 - 325
3S/2E 11C 1	monitor	joan way	ZONE 7	Mocho I	Upper	557.1	66.2	2.5	56.2 - 61.2
3S/2E 12C 4	monitor	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 15E 2	irrigation	Retzlaff Winery	BOB TAYLOR	Mocho II	Lower	549.69	192	8	104 - 189
3S/2E 15L 1	monitor	Concannon2	CONCANNON WINERY	Mocho II	Upper	561.5	40.5	2	20 - 40.5
3S/2E 15M 2	monitor	Concannon1	CONCANNON WINERY	Mocho II	Upper	549.46	45	2	25 - 45
3S/2E 15Q 6	irrigation	Concannon	CONCANNON	Mocho II	Lower	577.56	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	#### - 128.8
3S/2E 19D 7	nested	Isabel Shallow	ZONE 7	Amador	Upper	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/2E 33K 1	monitor	VA	ZONE 7	Amador	Upper	546.83	15	2.5	7 - 12
3S/2E 33L 1	monitor	VA/CROHARE FENCE	ZONE 7	Amador	Upper	557.63	25	2.5	11 - 16
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)

TD = Total Depth of well (in feet below ground surface)

Dia = Diameter of well casing (in inches)

Perf = Preferated interval (in feet below ground surface), uppermost - lowermost



ZONE 7 WATER AGENCY
 100 North Canyons Parkway
 Livermore, CA

DRAWN: TR

REVIEWED: MK

FILE: E:\MONITOR\GM\2014WY\AnnualReport2014\Fig5-11-MapHLLower14.mxd

SCALE: 1 in = 4,000 ft

DATE: Jan 21, 2015

Figure 5-4
Map of Historical Lows
Lower Aquifer; (Update Mar 2014)
Livermore Valley Groundwater Basin



FIGURE 5-5
TABLE OF SEMIANNUAL GROUNDWATER LEVELS
(Feet above Mean Sea Level, NAVD88)
FALL 2013 TO FALL 2014

Well Number	Well Depth	Aquifer	Sub-Basin	Fall 2013		Spring 2014		Fall 2014		Change in Elevation		
				Depth to Water	GW Elev	Depth to Water	GW Elev	Depth to Water	GW Elev	Seasonal		Annual
										Fall 13 to Spring 14	Spring 14 to Fall 14	
1S/4E 31P 5	24	U	Tracy	NM	-	NM	-	12.3	47.7	-	-	-
2S/1E 32E 1	70	U	Camp	38.4	354.2	40.0	352.5	41.0	351.6	-1.7	-1.0	-2.6
2S/1E 32N 1	44	U	Camp	19.6	341.2	34.1	326.7	21.5	339.3	-14.5	12.6	-1.9
2S/1E 32Q 1	45	U	Camp	27.9	339.6	29.2	338.4	30.1	337.4	-1.3	-0.9	-2.2
2S/1E 33L 1	80	U	Camp	54.2	335.3	55.7	333.8	56.9	332.6	-1.5	-1.1	-2.6
2S/1E 33P 2	55	U	Camp	34.9	335.2	36.3	333.8	37.5	332.6	-1.4	-1.2	-2.6
2S/1E 33R 1	60	U	Camp	22.5	336.0	23.4	335.1	24.2	334.3	-0.9	-0.8	-1.7
2S/1W 15F 1	60	U	Bishop	10.8	428.7	10.2	429.3	11.2	428.2	0.6	-1.0	-0.4
2S/1W 26C 2	50	U	Dublin	26.5	380.0	25.4	381.2	27.4	379.1	1.2	-2.1	-0.9
2S/1W 36E 3	60	U	Dublin	4.7	341.8	3.7	342.8	5.3	341.2	1.0	-1.6	-0.6
2S/1W 36F 1	190	L	Dublin	26.6	316.1	19.4	323.3	26.8	315.9	7.2	-7.4	-0.2
2S/1W 36F 2	320	L	Dublin	26.2	316.5	22.3	320.4	25.6	317.1	3.9	-3.3	0.6
2S/1W 36F 3	520	L	Dublin	52.4	290.3	44.0	298.7	52.3	290.4	8.4	-8.3	0.1
2S/2E 27C 2	108	U	Spring	17.3	524.9	18.0	524.2	18.4	523.7	-0.7	-0.5	-1.2
2S/2E 27P 2	68	U	Spring	3.6	501.8	3.3	502.1	4.5	501.0	0.3	-1.2	-0.9
2S/2E 28D 2	55	U	May	30.8	524.4	31.6	523.6	31.6	523.6	-0.9	0.0	-0.8
2S/2E 28J 2	230	L	May	5.6	513.3	5.2	513.6	6.0	512.8	0.3	-0.8	-0.5
2S/2E 28Q 1	28	U	May	8.4	504.7	6.2	506.9	7.4	505.7	2.2	-1.2	1.0
2S/2E 32K 2	43	U	Cayetano	10.1	497.4	9.6	497.8	10.3	497.1	0.5	-0.7	-0.2
2S/2E 34E 1	49	U	May	6.1	493.6	5.1	494.7	6.8	493.0	1.0	-1.7	-0.7
2S/2E 34Q 2	50	U	Spring	2.8	504.4	2.5	504.7	4.4	502.8	0.3	-1.9	-1.6
2S/3E 1D 1	80	U	Tracy	NM	-	NM	-	14.9	75.1	-	-	-
3S/1E 1F 2	40	U	Mocho II	19.1	409.3	20.7	407.7	21.2	407.3	-1.6	-0.5	-2.1
3S/1E 1H 3	80	U	Mocho II	28.5	394.4	27.9	394.9	31.9	390.9	0.5	-4.0	-3.5
3S/1E 1J 3	300	L	Mocho II	25.3	392.6	45.8	372.1	52.8	365.1	-20.5	-6.9	-27.5
3S/1E 1L 1	70	U	Camp	62.3	340.8	64.1	339.0	65.4	337.7	-1.8	-1.3	-3.1
3S/1E 1P 2	50	U	Amador	25.8	363.9	26.0	363.7	27.2	362.4	-0.2	-1.3	-1.4
3S/1E 1P 3	480	L	Amador	138.1	256.3	127.6	266.9	159.7	234.8	10.5	-32.1	-21.6
3S/1E 2J 2	41	U	Camp	16.7	364.2	14.1	366.8	18.9	362.0	2.6	-4.8	-2.1
3S/1E 2J 3	65	U	Camp	26.1	380.3	26.5	379.8	25.6	380.7	-0.4	0.9	0.5
3S/1E 2K 2	46	U	Camp	28.3	368.8	27.8	369.2	29.1	368.0	0.4	-1.3	-0.8
3S/1E 2M 3	50	U	Camp	19.8	345.3	19.8	345.2	20.4	344.7	0.0	-0.5	-0.6
3S/1E 2N 6	55	U	Amador	31.8	334.4	31.4	334.7	32.2	333.9	0.4	-0.8	-0.5
3S/1E 2P 3	380	L	Camp	119.2	252.5	107.0	264.8	139.5	232.2	12.2	-32.5	-20.3
3S/1E 2Q 1	45	U	Amador	22.4	347.5	21.2	348.8	23.6	346.3	1.3	-2.4	-1.2
3S/1E 2R 1	33	U	Amador	20.8	355.5	19.2	357.1	22.7	353.6	1.5	-3.5	-2.0
3S/1E 3G 2	50	U	Camp	13.6	340.6	12.0	342.2	13.8	340.4	1.6	-1.8	-0.2
3S/1E 4A 1	50	U	Camp	19.9	330.7	20.8	329.9	21.8	328.9	-0.9	-1.0	-1.9
3S/1E 4J 5	47	U	Camp	18.1	327.1	18.9	326.4	20.3	324.9	-0.8	-1.5	-2.2
3S/1E 4J 6	110	U	Camp	22.3	323.3	23.0	322.5	24.3	321.3	-0.8	-1.2	-2.0
3S/1E 4Q 2	90	U	Amador	63.1	282.3	66.2	279.3	68.8	276.6	-3.1	-2.6	-5.7
3S/1E 5K 6	75	U	Camp	15.0	331.1	14.3	331.8	17.1	329.0	0.7	-2.8	-2.1
3S/1E 5K 7	150	L	Camp	23.3	322.9	23.1	323.1	26.3	319.9	0.2	-3.2	-3.0
3S/1E 5L 3	40	U	Camp	12.9	326.5	12.8	326.6	13.9	325.6	0.1	-1.1	-0.9
3S/1E 5P 6	35	U	Camp	12.1	324.6	12.1	324.6	13.6	323.1	0.0	-1.5	-1.5
3S/1E 6F 3	36	U	Dublin	5.5	324.3	5.0	324.8	6.5	323.3	0.5	-1.5	-1.0
3S/1E 6G 5	200	L	Dublin	12.5	319.7	11.4	320.8	14.4	317.8	1.1	-3.0	-1.9
3S/1E 6N 2	67	U	Dublin	14.6	320.7	13.8	321.4	15.3	319.9	0.8	-1.5	-0.7
3S/1E 7B 2	152	L	Dublin	12.1	315.7	11.6	316.2	13.3	314.4	0.5	-1.8	-1.2
3S/1E 7B12	70	U	Dublin	13.9	314.0	13.9	313.9	15.4	312.5	0.0	-1.5	-1.5
3S/1E 7G 7	55	U	Dublin	16.0	311.4	16.3	311.0	17.6	309.7	-0.4	-1.3	-1.6
3S/1E 7J 5	50	U	Dublin	16.9	309.9	17.0	309.8	21.1	305.6	0.0	-4.2	-4.2
3S/1E 7M 2	88	U	Dublin	22.2	306.2	21.3	307.1	24.2	304.2	0.9	-2.9	-2.0
3S/1E 7R 8	52	U	Bernal	46.2	280.4	OBS	-	OBS	-	-	-	-
3S/1E 8B 1	148	U	Amador	36.6	301.7	53.0	285.3	13.9	324.4	-16.4	39.0	22.7
3S/1E 8G 4	85	U	Amador	63.8	277.7	65.0	276.5	69.2	272.3	-1.2	-4.2	-5.4
3S/1E 8H 9	240	L	Amador	82.3	256.2	66.8	271.7	92.8	245.7	15.5	-26.0	-10.5
3S/1E 8H10	440	L	Amador	84.4	254.8	69.0	270.3	102.7	236.5	15.4	-33.7	-18.3
3S/1E 8H11	720	D	Amador	87.2	252.0	72.4	266.9	110.6	228.6	14.8	-38.3	-23.4
3S/1E 8H13	800	D	Amador	87.6	251.4	71.9	267.1	110.3	228.7	15.7	-38.4	-22.7
3S/1E 8H18	745	L	Amador	90.0	252.0	76.5	265.5	OBS	-	13.5	-	-
3S/1E 8K 1	99	U	Amador	69.1	263.3	63.7	268.7	75.7	256.7	5.3	-12.0	-6.7
3S/1E 8N 1	72	U	Bernal	58.5	265.2	55.1	268.6	64.6	259.1	3.4	-9.5	-6.1
3S/1E 9B 1	810	L	Amador	97.3	252.0	81.6	267.7	120.8	228.4	15.7	-39.3	-23.6
3S/1E 9G 1	160	U	Amador	75.4	277.0	76.4	276.0	NM	-	-0.9	-	-
3S/1E 9H10	145	U	Amador	74.7	278.2	76.5	276.4	81.0	271.9	-1.7	-4.6	-6.3
3S/1E 9H11	190	L	Amador	82.6	270.4	77.4	275.7	98.0	255.1	5.3	-20.6	-15.3
3S/1E 9J 7	505	U	Amador	80.1	277.2	81.3	276.1	86.7	270.7	-1.1	-5.4	-6.6
3S/1E 9J 8	305	L	Amador	94.0	263.6	84.1	273.4	107.1	250.5	9.8	-23.0	-13.1
3S/1E 9J 9	505	L	Amador	105.6	252.1	88.2	269.5	128.4	229.3	17.5	-40.2	-22.7



FIGURE 5-5
TABLE OF SEMIANNUAL GROUNDWATER LEVELS
(Feet above Mean Sea Level, NAVD88)
FALL 2013 TO FALL 2014

Well Number	Well Depth	Aquifer	Sub-Basin	Fall 2013		Spring 2014		Fall 2014		Change in Elevation		
				Depth to Water	GW Elev	Depth to Water	GW Elev	Depth to Water	GW Elev	Seasonal		Annual
										Fall 13 to Spring 14	Spring 14 to Fall 14	
1S/4E 31P 5	24	U	Tracy	NM	-	NM	-	12.3	47.7	-	-	-
2S/1E 32E 1	70	U	Camp	38.4	354.2	40.0	352.5	41.0	351.6	-1.7	-1.0	-2.6
2S/1E 32N 1	44	U	Camp	19.6	341.2	34.1	326.7	21.5	339.3	-14.5	12.6	-1.9
2S/1E 32Q 1	45	U	Camp	27.9	339.6	29.2	338.4	30.1	337.4	-1.3	-0.9	-2.2
2S/1E 33L 1	80	U	Camp	54.2	335.3	55.7	333.8	56.9	332.6	-1.5	-1.1	-2.6
2S/1E 33P 2	55	U	Camp	34.9	335.2	36.3	333.8	37.5	332.6	-1.4	-1.2	-2.6
3S/1E 9M 3	575	L	Amador	NM	-	76.2	271.3	105.0	242.5	-	-28.8	-
3S/1E 9M 4	498	L	Amador	91.9	251.0	75.0	267.9	108.9	234.0	16.9	-33.9	-17.0
3S/1E 9P 5	105	U	Amador	75.5	273.9	74.2	275.2	81.8	267.6	1.3	-7.6	-6.3
3S/1E 9P 9	210	L	Amador	80.9	268.7	75.3	274.3	90.0	259.6	5.6	-14.7	-9.1
3S/1E 9P10	310	L	Amador	87.8	261.7	76.8	272.7	102.2	247.3	11.0	-25.4	-14.4
3S/1E 9P11	425	L	Amador	97.1	252.4	79.2	270.2	120.7	228.7	17.9	-41.5	-23.6
3S/1E 10A 2	88	U	Amador	61.6	305.8	66.8	300.6	70.2	297.2	-5.2	-3.5	-8.6
3S/1E 10B 8	200	L	Amador	79.7	273.9	75.9	277.7	88.5	265.1	3.8	-12.6	-8.8
3S/1E 10B 9	294	L	Amador	88.0	265.5	79.6	273.9	100.7	252.8	8.4	-21.1	-12.7
3S/1E 10B10	600	L	Amador	100.0	253.5	85.9	267.6	122.6	230.9	14.1	-36.7	-22.6
3S/1E 10B11	810	D	Amador	99.1	254.4	85.0	268.5	124.0	229.6	14.1	-39.0	-24.9
3S/1E 10D 2	212	L	Amador	79.1	270.2	73.0	276.3	88.5	260.8	6.1	-15.5	-9.4
3S/1E 10D 3	322	L	Amador	86.2	263.1	75.9	273.4	98.6	250.7	10.4	-22.8	-12.4
3S/1E 10D 4	616	L	Amador	95.4	253.9	80.6	268.8	117.0	232.3	14.9	-36.4	-21.6
3S/1E 10D 5	790	D	Amador	95.2	254.1	80.5	268.8	120.2	229.2	14.7	-39.7	-25.0
3S/1E 10D 7	145	U	Amador	81.3	279.8	84.1	276.9	87.2	273.9	-2.9	-3.0	-5.9
3S/1E 10D 8	215	L	Amador	90.2	270.8	84.3	276.7	99.6	261.4	5.9	-15.3	-9.4
3S/1E 10K 2	591	L	Amador	94.4	264.3	85.0	273.7	105.4	253.3	9.4	-20.4	-11.0
3S/1E 10K 3	530	L	Amador	107.4	256.4	94.3	269.5	122.9	240.9	13.1	-28.6	-15.5
3S/1E 10N 2	195	U	Amador	81.9	278.4	83.9	276.4	88.4	271.9	-1.9	-4.5	-6.4
3S/1E 10N 3	195	L	Amador	88.9	271.3	84.7	275.5	98.0	262.2	4.1	-13.2	-9.1
3S/1E 11B 1	43	U	Amador	34.8	334.6	34.2	335.2	35.8	333.5	0.6	-1.6	-1.0
3S/1E 11C 3	55	U	Amador	32.7	332.2	32.0	332.8	32.8	332.0	0.7	-0.8	-0.1
3S/1E 11G 1	120	U	Amador	74.4	297.3	72.0	299.6	82.6	289.0	2.3	-10.6	-8.2
3S/1E 11G 2	350	L	Amador	117.8	253.9	109.9	261.8	134.2	237.4	7.9	-24.4	-16.5
3S/1E 11G 3	590	L	Amador	117.7	253.9	104.6	267.0	137.7	234.0	13.1	-33.1	-19.9
3S/1E 11G 4	790	D	Amador	118.5	253.2	103.1	268.6	142.1	229.6	15.3	-39.0	-23.7
3S/1E 11M 2	700	L	Amador	101.5	264.5	84.1	281.8	114.0	252.0	17.4	-29.8	-12.5
3S/1E 11M 3	684	L	Amador	116.8	252.5	104.1	265.1	134.8	234.5	12.7	-30.7	-18.0
3S/1E 11P 6	400	L	Amador	117.3	259.3	108.0	268.7	133.9	242.8	9.4	-25.9	-16.5
3S/1E 12A 2	69	U	Amador	41.3	360.1	38.1	363.3	46.1	355.3	3.2	-7.9	-4.8
3S/1E 12G 1	73	U	Amador	63.5	341.0	62.7	341.8	65.9	338.6	0.8	-3.2	-2.4
3S/1E 12H 4	270	L	Amador	152.3	255.5	146.9	260.9	174.4	233.4	5.4	-27.5	-22.1
3S/1E 12H 5	400	L	Amador	149.8	258.0	138.0	269.8	175.1	232.7	11.8	-37.1	-25.3
3S/1E 12H 6	480	L	Amador	151.0	256.7	138.3	269.5	176.6	231.2	12.7	-38.3	-25.6
3S/1E 12H 7	684	D	Amador	195.6	212.0	178.0	229.7	174.5	233.2	17.7	3.5	21.2
3S/1E 12K 2	300	L	Amador	161.6	244.7	160.4	245.9	182.3	224.0	1.2	-21.9	-20.7
3S/1E 12K 3	475	L	Amador	143.9	263.0	136.8	270.0	170.1	236.7	7.1	-33.3	-26.3
3S/1E 12K 4	575	D	Amador	164.0	242.7	145.3	261.4	175.8	230.9	18.7	-30.5	-11.8
3S/1E 13P 5	135	U	Amador	92.2	288.6	NM	-	103.0	277.8	-	-	-10.8
3S/1E 13P 6	255	L	Amador	119.3	261.4	110.0	270.8	138.5	242.3	9.3	-28.5	-19.1
3S/1E 13P 7	375	L	Amador	117.2	263.6	108.3	272.5	143.4	237.4	8.9	-35.1	-26.2
3S/1E 13P 8	605	L	Amador	150.0	230.8	135.1	245.6	147.3	233.5	14.9	-12.2	2.7
3S/1E 14B 1	435	L	Amador	128.4	255.8	116.9	267.4	146.4	237.8	11.6	-29.6	-18.0
3S/1E 14D 2	740	L	Amador	110.0	261.8	96.5	275.3	126.3	245.6	13.5	-29.7	-16.2
3S/1E 14K 2	508	L	Amador	126.2	265.6	118.3	273.4	144.5	247.2	7.9	-26.2	-18.4
3S/1E 15F 3	640	L	Amador	135.1	233.9	110.0	259.0	140.6	228.4	25.1	-30.6	-5.5
3S/1E 15J 3	196	L	Amador	88.9	255.7	73.6	271.0	114.2	230.4	15.3	-40.6	-25.3
3S/1E 15M 3	600	L	Amador	117.0	245.9	97.3	265.6	138.9	224.0	19.7	-41.5	-21.9
3S/1E 16A 4	603	L	Amador	112.5	246.9	89.2	270.2	129.3	230.1	23.3	-40.1	-16.9
3S/1E 16B 1	805	D	Amador	104.5	251.3	86.1	269.7	128.3	227.6	18.4	-42.1	-23.7
3S/1E 16C 2	190	L	Amador	84.7	259.7	72.3	272.0	101.3	243.1	12.3	-28.9	-16.6
3S/1E 16C 3	305	L	Amador	92.6	251.7	72.9	271.3	118.2	226.1	19.7	-45.3	-25.6
3S/1E 16C 4	375	L	Amador	92.8	251.3	74.1	270.1	120.5	223.6	18.7	-46.4	-27.7
3S/1E 16E 4	105	U	Amador	79.7	272.0	71.1	280.6	91.5	260.2	8.6	-20.4	-11.8
3S/1E 16P 5	75	U	Amador	57.4	297.2	60.1	294.4	69.7	284.8	-2.8	-9.6	-12.3
3S/1E 16R 1	239	L	Amador	106.3	256.2	67.9	294.6	130.6	232.0	38.4	-62.7	-24.2
3S/1E 17B 4	248	L	Amador	72.0	265.7	NM	-	NM	-	-	-	-
3S/1E 17D 3	108	L	Bernal	60.7	264.5	60.0	265.1	68.8	256.4	0.7	-8.8	-8.1
3S/1E 17D 4	236	L	Bernal	60.4	264.8	65.5	259.6	68.8	256.3	-5.2	-3.3	-8.5
3S/1E 17D 5	308	L	Bernal	60.2	265.0	62.6	262.6	68.4	256.8	-2.4	-5.8	-8.2
3S/1E 17D 6	408	L	Bernal	58.2	266.9	57.8	267.3	64.7	260.4	0.4	-6.9	-6.5
3S/1E 17D 7	684	D	Bernal	22.6	302.5	21.6	303.6	23.2	301.9	1.1	-1.6	-0.6
3S/1E 17D10	425	L	Bernal	62.6	265.6	65.5	262.6	70.5	257.6	-3.0	-5.0	-8.0



FIGURE 5-5
TABLE OF SEMIANNUAL GROUNDWATER LEVELS
(Feet above Mean Sea Level, NAVD88)
FALL 2013 TO FALL 2014

Well Number	Well Depth	Aquifer	Sub-Basin	Fall 2013		Spring 2014		Fall 2014		Change in Elevation		
				Depth to Water	GW Elev	Depth to Water	GW Elev	Depth to Water	GW Elev	Seasonal		Annual
										Fall 13 to Spring 14	Spring 14 to Fall 14	
1S/4E 31P 5	24	U	Tracy	NM	-	NM	-	12.3	47.7	-	-	-
2S/1E 32E 1	70	U	Camp	38.4	354.2	40.0	352.5	41.0	351.6	-1.7	-1.0	-2.6
2S/1E 32N 1	44	U	Camp	19.6	341.2	34.1	326.7	21.5	339.3	-14.5	12.6	-1.9
2S/1E 32Q 1	45	U	Camp	27.9	339.6	29.2	338.4	30.1	337.4	-1.3	-0.9	-2.2
2S/1E 33L 1	80	U	Camp	54.2	335.3	55.7	333.8	56.9	332.6	-1.5	-1.1	-2.6
2S/1E 33P 2	55	U	Camp	34.9	335.2	36.3	333.8	37.5	332.6	-1.4	-1.2	-2.6
3S/1E 17D11	603	L	Bernal	103.3	221.5	55.2	269.6	65.9	258.9	48.1	-10.7	37.4
3S/1E 18A 6	500	L	Bernal	63.3	263.4	NM	-	72.8	254.0	-	-	-9.5
3S/1E 18E 4	83	U	Bernal	50.4	269.9	49.8	270.4	54.9	265.3	0.6	-5.1	-4.5
3S/1E 18J 2	71	U	Bernal	54.2	268.8	53.1	269.9	59.3	263.7	1.1	-6.2	-5.1
3S/1E 18N 1	708	L	Bernal	56.0	263.5	53.8	265.6	61.4	258.1	2.2	-7.6	-5.4
3S/1E 19A11	330	L	Bernal	NM	-	65.4	268.9	65.4	268.9	-	0.0	-
3S/1E 19C 4	78	U	Bernal	53.0	269.3	51.4	270.8	58.1	264.1	1.6	-6.7	-5.1
3S/1E 19K 1	58	U	Bernal	56.0	265.6	53.0	268.5	Dry	-	3.0	-	-
3S/1E 20C 7	153	U	Bernal	70.4	268.2	69.0	269.7	76.8	261.9	1.4	-7.8	-6.4
3S/1E 20C 8	315	L	Bernal	75.2	263.4	70.8	267.9	82.8	255.9	4.4	-12.0	-7.6
3S/1E 20C 9	515	L	Bernal	74.4	264.4	70.8	268.0	83.0	255.8	3.6	-12.2	-8.6
3S/1E 20J 4	72	U	Bernal	58.5	273.1	58.0	273.6	66.0	265.6	0.5	-8.0	-7.4
3S/1E 20M11	71	U	Bernal	54.4	271.4	52.2	273.6	60.6	265.1	2.2	-8.4	-6.3
3S/1E 20Q 2	65	U	Bernal	22.6	303.2	21.6	304.2	23.8	302.0	1.0	-2.2	-1.2
3S/1E 22D 2	72	U	Amador	59.2	308.8	58.3	309.8	61.8	306.3	1.0	-3.5	-2.5
3S/1E 23J 1	120	U	Amador	89.5	338.7	90.3	338.0	102.0	326.2	-0.8	-11.8	-12.5
3S/1E 24Q 1	440	L	Amador	138.1	289.4	131.9	295.6	143.8	283.7	6.2	-12.0	-5.7
3S/1E 25C 3	146	U	Amador	91.2	363.0	92.8	361.3	96.6	357.5	-1.6	-3.8	-5.4
3S/1E 29M 4	57	U	Castle	40.7	270.3	39.9	271.1	44.5	266.4	0.8	-4.6	-3.8
3S/1E 29P 2	42	U	Bernal	30.2	272.7	30.3	272.5	31.4	271.5	-0.1	-1.0	-1.2
3S/1W 1B 9	162	L	Dublin	14.9	318.7	11.8	321.8	15.8	317.8	3.1	-4.0	-1.0
3S/1W 1B10	414	L	Dublin	20.2	313.4	18.6	314.9	20.7	312.9	1.6	-2.0	-0.5
3S/1W 1B11	560	L	Dublin	41.5	292.3	36.1	297.7	41.2	292.6	5.4	-5.1	0.3
3S/1W 2A 2	47	U	Dublin	27.2	342.2	26.1	343.3	28.6	340.8	1.1	-2.6	-1.4
3S/1W 12B 2	40	U	Dublin	22.0	320.9	20.4	322.5	22.6	320.3	1.6	-2.2	-0.6
3S/1W 12J 1	62	U	Dublin	24.0	305.3	22.5	306.9	26.4	303.0	1.5	-3.9	-2.4
3S/1W 13J 1	48	U	Castle	29.7	314.2	27.9	316.0	31.4	312.5	1.8	-3.5	-1.7
3S/2E 1F 2	69	U	Spring	23.5	549.5	24.7	548.3	25.6	547.4	-1.2	-0.9	-2.1
3S/2E 2B 2	46	U	Spring	10.4	529.1	10.5	529.0	11.7	527.7	-0.1	-1.2	-1.3
3S/2E 3A 1	54	U	Spring	4.9	512.7	4.4	513.2	6.3	511.3	0.5	-1.9	-1.4
3S/2E 3K 3	60	U	Mocho I	13.8	509.1	13.8	509.0	14.5	508.3	-0.1	-0.7	-0.8
3S/2E 5N 1	210	L	Mocho II	34.5	405.5	33.2	406.8	46.0	394.0	1.3	-12.8	-11.5
3S/2E 7C 2	49	U	Mocho II	27.9	392.9	26.5	394.4	31.0	389.9	1.4	-4.5	-3.1
3S/2E 7H 2	54	U	Mocho II	31.4	411.4	29.1	413.7	39.7	403.2	2.3	-10.6	-8.3
3S/2E 7N 2	162	L	AmWest	122.4	299.6	41.2	428.4	138.5	283.5	128.9	-144.9	-16.1
3S/2E 7P 3	510	L	Amador	193.9	237.5	184.9	246.6	197.3	234.2	9.0	-12.4	-3.4
3S/2E 7R 3	583	L	Mocho II	114.7	331.4	82.6	363.5	127.4	318.6	32.1	-44.8	-12.7
3S/2E 8F 1	576	L	Mocho II	94.0	362.3	NM	-	94.8	361.4	-	-	-0.9
3S/2E 8G 1	465	L	Mocho II	48.1	416.9	52.0	413.1	68.7	396.4	-3.9	-16.7	-20.6
3S/2E 8H 3	195	L	Mocho II	59.5	417.8	58.7	418.5	77.8	399.5	0.7	-19.0	-18.3
3S/2E 8H 4	385	L	Mocho II	93.3	383.6	107.7	369.3	150.0	326.9	-14.4	-42.3	-56.7
3S/2E 8K 2	74	U	Mocho II	37.1	427.7	36.2	428.6	50.8	414.0	0.9	-14.6	-13.7
3S/2E 8N 2	526	L	Mocho II	43.4	410.3	58.5	395.1	89.0	364.7	-15.1	-30.5	-45.6
3S/2E 8P 1	273	L	Mocho II	43.7	424.5	47.3	420.9	63.5	404.7	-3.6	-16.1	-19.8
3S/2E 9L 1	516	L	Mocho II	NM	-	NM	-	NM	-	-	-	-
3S/2E 9P 1	515	L	Mocho II	81.4	419.9	88.4	412.9	106.7	394.6	-7.0	-18.3	-25.3
3S/2E 9Q 1	572	L	Mocho II	77.1	441.0	103.6	414.6	120.1	398.1	-26.5	-16.5	-42.9
3S/2E 9Q 4	80	U	Mocho II	22.6	481.8	29.9	474.5	44.3	460.1	-7.3	-14.4	-21.7
3S/2E 10F 3	45	U	Mocho I	13.4	521.4	14.4	520.5	15.7	519.1	-1.0	-1.4	-2.3
3S/2E 10Q 1	44	U	Mocho II	24.1	531.3	27.7	527.7	30.4	525.0	-3.6	-2.7	-6.3
3S/2E 11C 1	66	U	Mocho I	27.9	529.2	28.3	528.8	29.6	527.6	-0.4	-1.3	-1.6
3S/2E 14B 1	300	L	Mocho I	64.8	528.5	65.5	527.9	67.3	526.1	-0.6	-1.9	-2.5
3S/2E 15E 2	192	L	Mocho II	36.2	513.5	42.2	507.5	60.2	489.5	-6.0	-18.0	-24.1
3S/2E 15L 1	41	U	Mocho II	NM	-	31.4	530.6	39.4	522.6	-	-7.9	-
3S/2E 15M 2	45	L	Mocho II	NM	-	35.4	514.7	45.3	504.7	-	-9.9	-
3S/2E 15Q 6	301	L	Mocho II	65.4	512.1	NM	-	75.7	501.9	-	-	-10.3
3S/2E 15R17	63	U	Mocho II	11.7	580.7	11.8	580.6	14.6	577.8	-0.1	-2.8	-3.0
3S/2E 15R18	138	L	Mocho II	14.5	577.9	14.5	578.0	17.5	575.0	0.1	-3.0	-2.9
3S/2E 16A 3	240	L	Mocho II	35.1	492.0	40.9	486.2	NM	-	-5.8	-	-
3S/2E 16B 1	410	L	Mocho II	107.2	413.0	103.3	417.0	118.5	401.8	3.9	-15.2	-11.3
3S/2E 16C 1	584	L	Mocho II	131.0	379.9	149.2	361.8	58.0	453.0	-18.2	91.2	73.0
3S/2E 16E 4	45	U	Mocho II	16.4	489.9	19.1	487.1	39.3	467.0	-2.7	-20.2	-22.9
3S/2E 17E 2	94	U	Mocho II	18.4	449.4	NM	-	Dry	-	-	-	-
3S/2E 18B 1	497	L	Amador	176.1	262.4	195.6	243.0	199.4	239.2	-19.4	-3.8	-23.2



FIGURE 5-5
TABLE OF SEMIANNUAL GROUNDWATER LEVELS
(Feet above Mean Sea Level, NAVD88)
FALL 2013 TO FALL 2014

Well Number	Well Depth	Aquifer	Sub-Basin	Fall 2013		Spring 2014		Fall 2014		Change in Elevation		
				Depth to Water	GW Elev	Depth to Water	GW Elev	Depth to Water	GW Elev	Seasonal		Annual
										Fall 13 to Spring 14	Spring 14 to Fall 14	
1S/4E 31P 5	24	U	Tracy	NM	-	NM	-	12.3	47.7	-	-	-
2S/1E 32E 1	70	U	Camp	38.4	354.2	40.0	352.5	41.0	351.6	-1.7	-1.0	-2.6
2S/1E 32N 1	44	U	Camp	19.6	341.2	34.1	326.7	21.5	339.3	-14.5	12.6	-1.9
2S/1E 32Q 1	45	U	Camp	27.9	339.6	29.2	338.4	30.1	337.4	-1.3	-0.9	-2.2
2S/1E 33L 1	80	U	Camp	54.2	335.3	55.7	333.8	56.9	332.6	-1.5	-1.1	-2.6
2S/1E 33P 2	55	U	Camp	34.9	335.2	36.3	333.8	37.5	332.6	-1.4	-1.2	-2.6
3S/2E 18E 1	134	U	Amador	NM	-	75.4	348.5	96.3	327.6	-	-20.9	-
3S/2E 19D 7	180	U	Amador	91.3	323.7	98.4	316.7	125.5	289.5	-7.0	-27.2	-34.2
3S/2E 19D 8	260	L	Amador	92.2	322.9	98.9	316.2	126.2	288.9	-6.7	-27.3	-34.0
3S/2E 19D 9	390	L	Amador	167.6	247.4	152.6	262.3	177.8	237.2	15.0	-25.2	-10.2
3S/2E 19D10	470	L	Amador	159.1	255.8	151.0	263.9	153.5	261.4	8.1	-2.4	5.7
3S/2E 20M 1	184	L	Amador	57.1	421.7	54.8	424.0	NM	-	2.3	-	-
3S/2E 22B 1	32	U	Mocho II	14.6	571.2	18.8	567.1	Dry	-	-4.2	-	-
3S/2E 23E 1	40	U	Mocho II	16.8	596.6	17.3	596.1	17.4	596.0	-0.5	-0.1	-0.6
3S/2E 23E 2	110	L	Mocho II	14.7	598.6	15.3	597.9	15.9	597.3	-0.6	-0.6	-1.3
3S/2E 24A 1	46	U	Mocho I	23.5	694.2	23.6	694.1	23.8	694.0	-0.1	-0.1	-0.3
3S/2E 26J 2	44	U	Mocho II	12.6	677.3	7.5	682.4	13.0	677.0	5.2	-5.5	-0.3
3S/2E 29F 4	36	U	Amador	8.4	449.1	9.3	448.2	12.9	444.6	-0.9	-3.7	-4.5
3S/2E 30D 2	44	U	Amador	21.1	410.5	21.7	409.9	25.1	406.5	-0.6	-3.3	-4.0
3S/2E 30G 1	390	L	Amador	NM	-	NM	-	OBS	-	-	-	-
3S/2E 33G 1	17	U	Amador	8.6	502.9	9.9	501.6	10.1	501.4	-1.3	-0.2	-1.5
3S/3E 7M 2	199	L	Spring	46.8	581.9	47.0	581.7	47.2	581.5	-0.2	-0.2	-0.4
MA-C 1	0	U	Amador	0.0	355.2	0.0	356.2	0.0	353.4	0.9	-2.8	-1.9
MA-K 15	0	U	Amador	0.0	332.6	0.0	330.8	0.0	326.7	-1.8	-4.1	-5.8
MA-K 18	0	U	Amador	0.0	351.2	0.0	350.3	0.0	346.6	-0.9	-3.7	-4.6
MA-K 28	0	U	Amador	0.0	282.9	0.0	282.8	0.0	281.9	-0.2	-0.8	-1.0
MA-K 30	0	U	Amador	NM	-	0.0	330.7	0.0	331.4	-	0.7	-
MA-K 37	0	U	Amador	0.0	279.7	0.0	276.7	0.0	273.8	-2.9	-2.9	-5.8
MA-P 10	0	U	Amador	0.0	366.6	0.0	365.5	0.0	358.4	-1.1	-7.1	-8.1
MA-P 12	0	U	Amador	0.0	351.3	0.0	350.4	0.0	347.0	-0.9	-3.4	-4.3
MA-P 27	0	U	Amador	0.0	281.4	0.0	278.1	0.0	266.6	-3.3	-11.5	-14.8
MA-P 28	0	U	Amador	0.0	404.8	0.0	405.7	0.0	403.5	0.9	-2.3	-1.3
MA-P 40	0	U	Amador	0.0	293.2	Dry	-	Dry	-	-	-	-
MA-P 41	0	U	Amador	0.0	410.9	0.0	412.4	0.0	409.8	1.5	-2.6	-1.2
MA-P 42	0	U	Amador	0.0	284.8	0.0	279.6	0.0	274.2	-5.2	-5.4	-10.6
MA-P 44	0	U	Amador	0.0	317.9	0.0	320.7	0.0	308.8	2.9	-11.9	-9.1
MA-R 3	0	U	Amador	0.0	339.9	0.0	341.6	0.0	342.1	1.6	0.5	2.1
MA-R 4	0	U	Amador	0.0	313.5	0.0	311.0	0.0	312.2	-2.6	1.2	-1.4
MA-R 22	0	U	Amador	0.0	362.7	0.0	363.8	0.0	360.0	1.0	-3.8	-2.7
MA-R 23	0	U	Amador	0.0	359.8	0.0	361.8	0.0	358.0	2.0	-3.9	-1.9

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



FIGURE 5-6
HISTORICAL KEY WELL HYDROGRAPHS
1901 to 2014 WATER YEARS

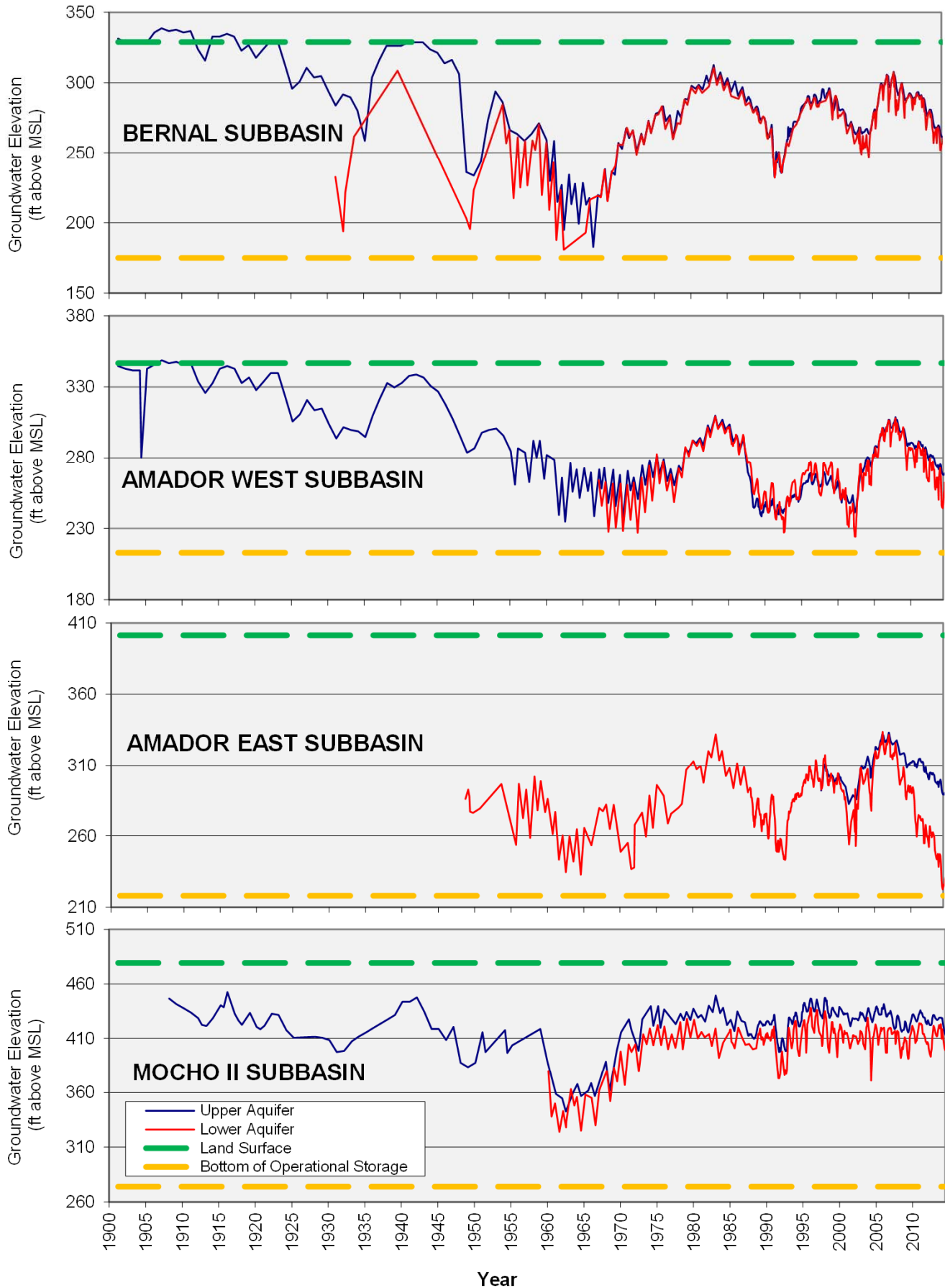
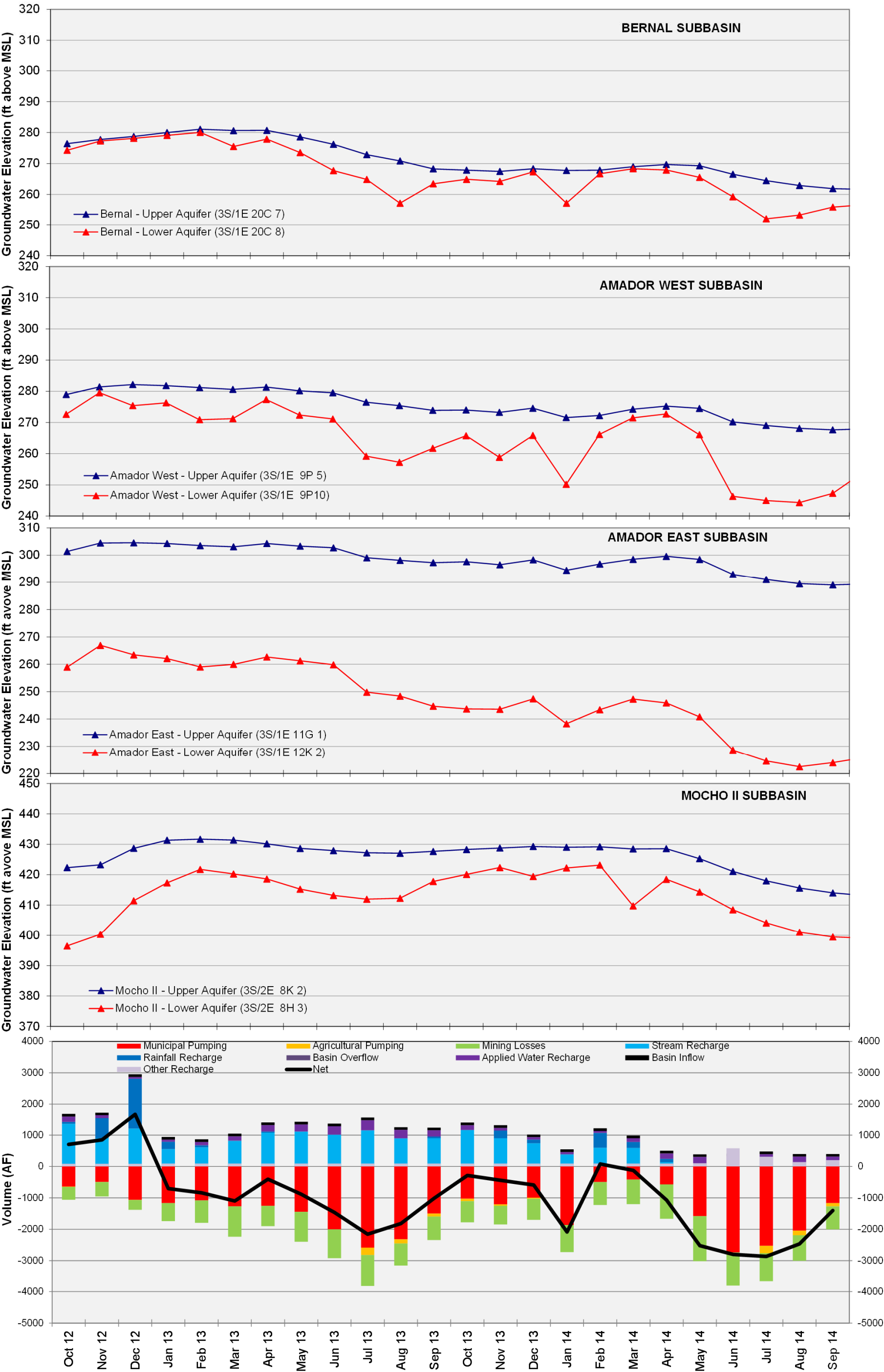
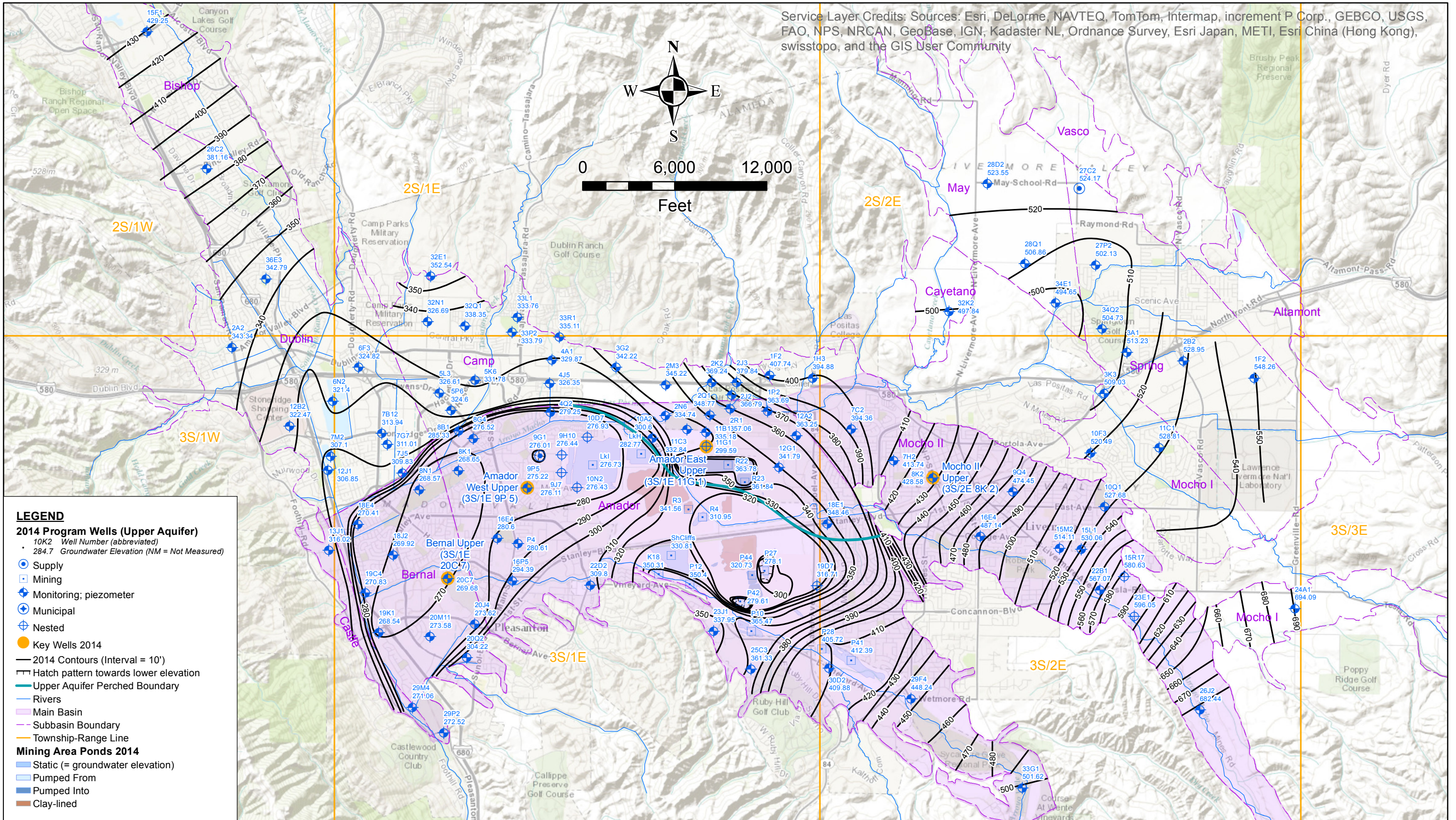




FIGURE 5-7
TWO-YEAR KEY WELL HYDROGRAPHS
2012 THROUGH 2014 WATER YEARS





ZONE 7 WATER AGENCY
100 North Canyons Parkway
Livermore, CA

DRAWN: TR

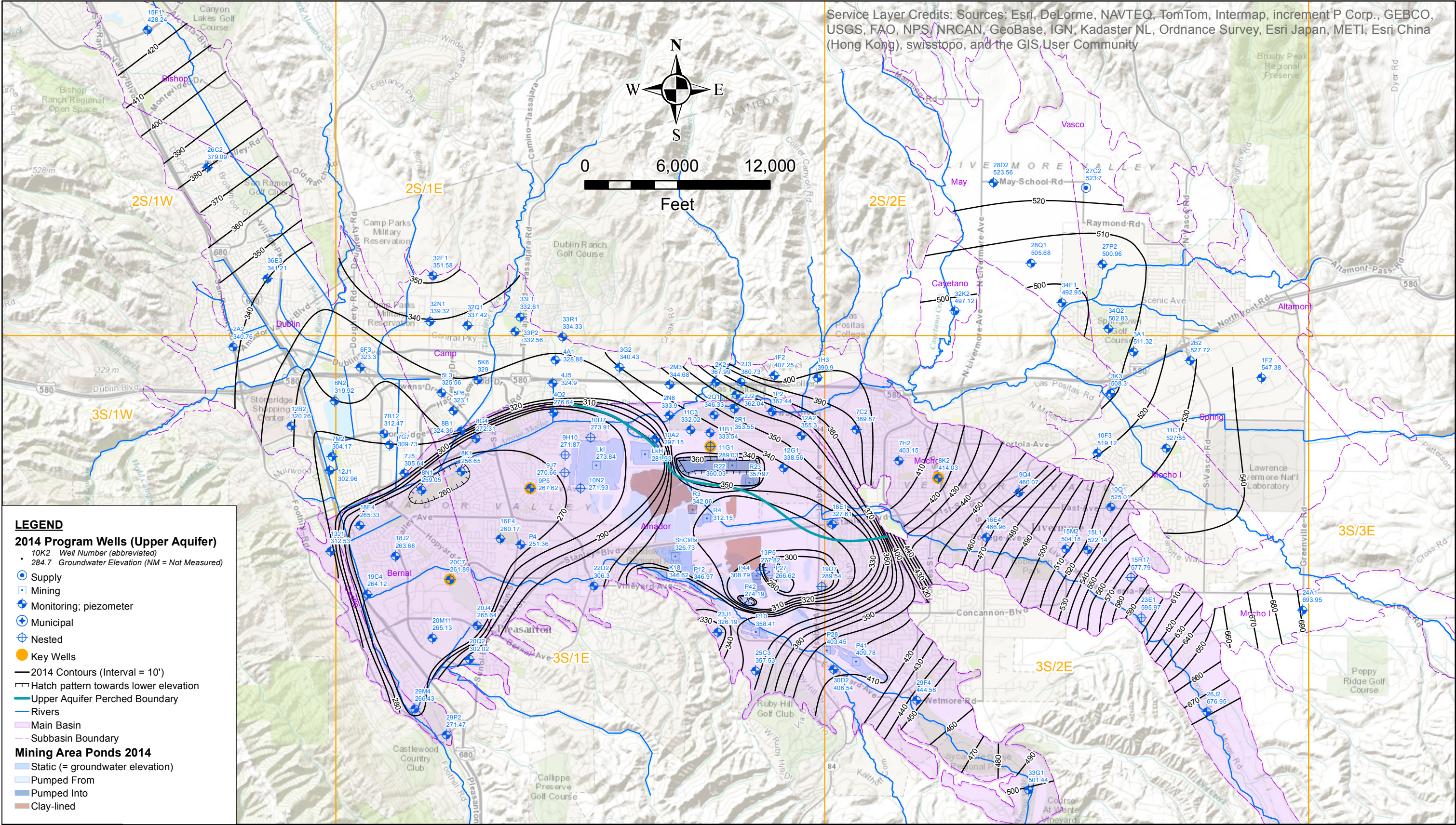
REVIEWED: MK

FILE: E:\MONITOR\GM\2014WY\AnnualReport2014\Fig5-07-SASpringUpper14.mxd

SCALE: 1 in = 6,000 ft

DATE: May 1, 2015

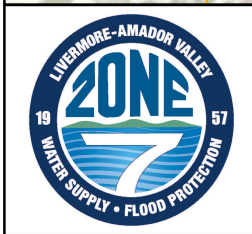
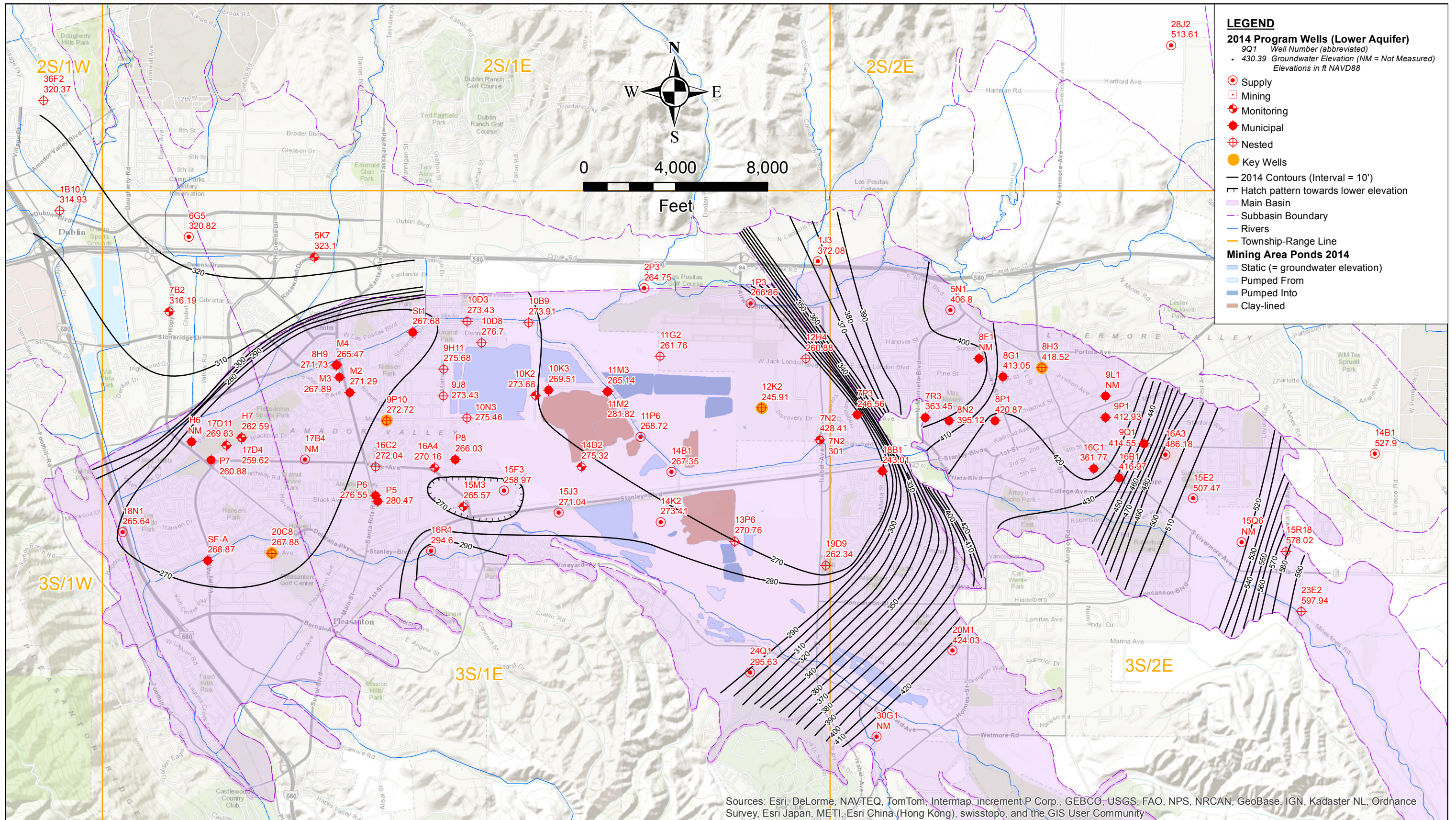
Figure 5-8
Groundwater Gradient Map
Upper Aquifer; Spring 2014 (April)
Livermore Valley Groundwater Basin



ZONE 7 WATER AGENCY
100 North Canyons Parkway
Livermore, CA

DRAWN: TR	SCALE: 1 in = 6,000 ft
REVIEWED: MK	DATE: May 1, 2015
FILE: E:\MONITOR\GM\2014WY\AnnualReport2014\Fig5-08-SAFallUpper14.mxd	

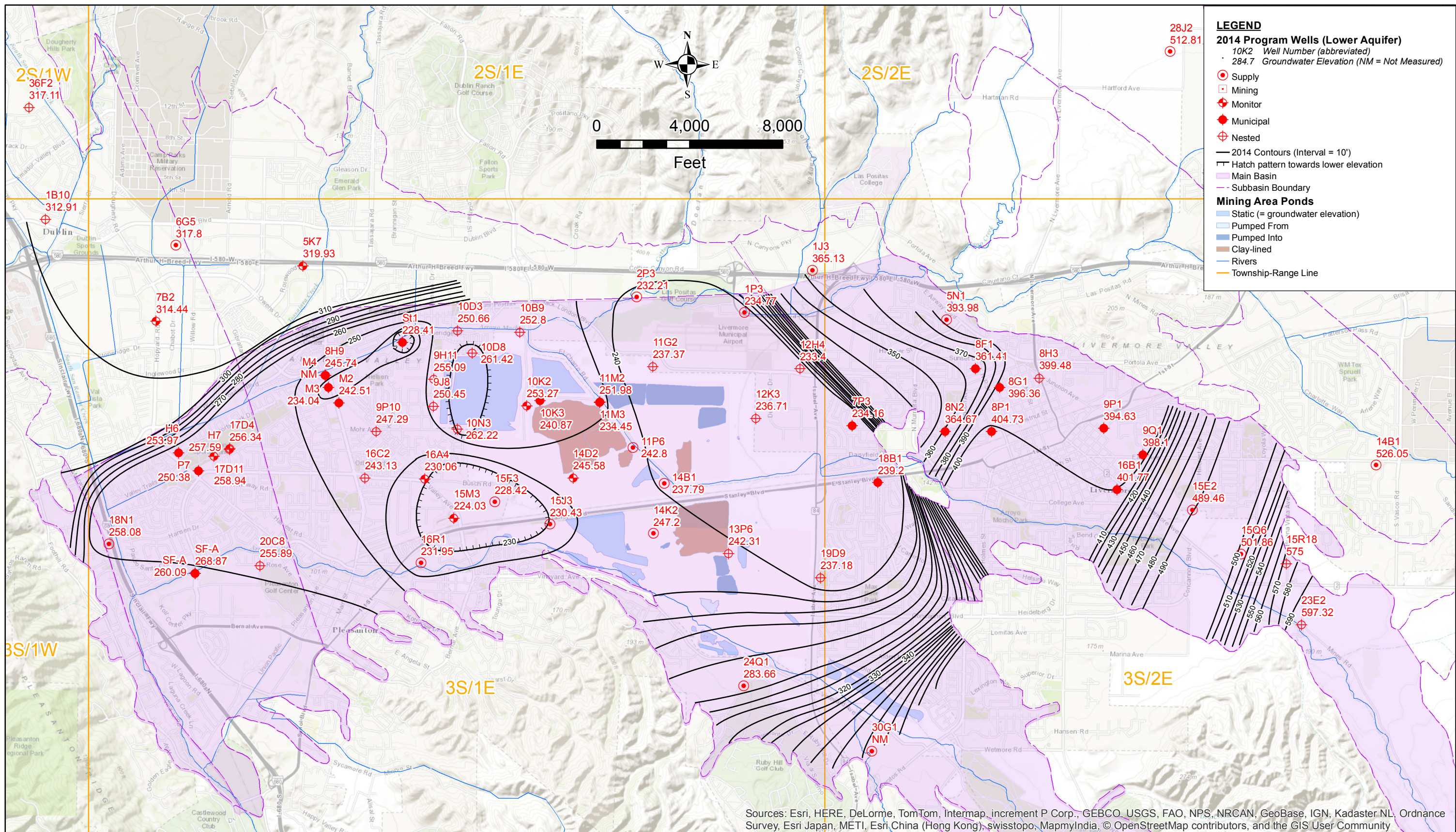
Figure 5-9
Groundwater Gradient Map
Upper Aquifer; Fall 2014 (September)
Livermore Valley Groundwater Basin



ZONE 7 WATER AGENCY
100 North Canyons Parkway
Livermore, CA

DRAWN: TR	SCALE: 1 in = 4,000 ft
REVIEWED: MK	DATE: May 1, 2015
FILE: E:\MONITOR\GM\2014WY\AnnualReport2014\Fig5-09-SASpringLower14.mxd	

Figure 5-10
Groundwater Gradient Map
Lower Aquifer; Spring 2014 (April)
Livermore Valley Groundwater Basin



ZONE 7 WATER AGENCY
100 North Canyons Parkway
Livermore, CA

DRAWN: TR

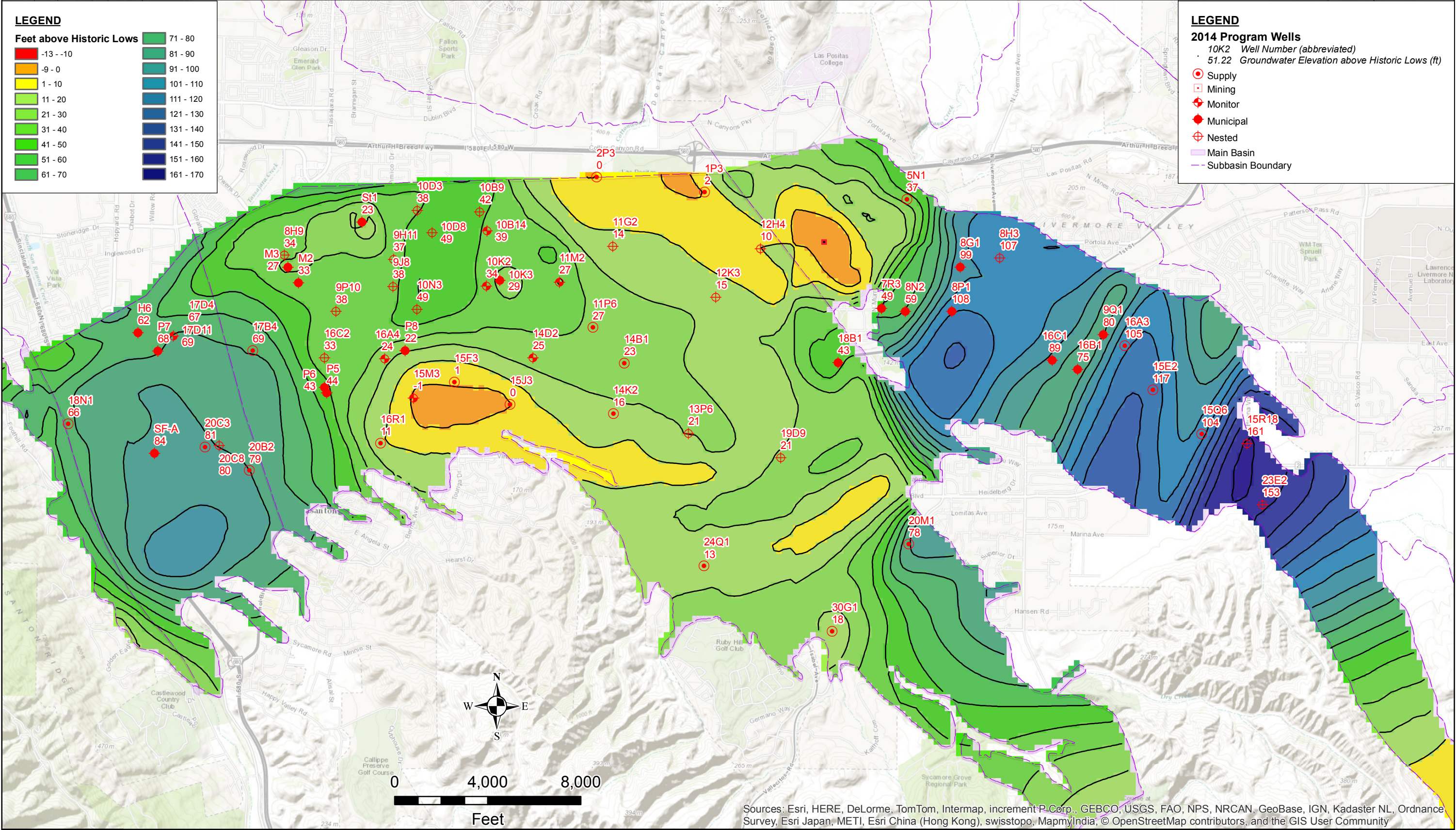
REVIEWED: MK

FILE: E:\MONITOR\GM\2014WY\AnnualReport2014\Fig5-11-SAFallLower14.mxd

SCALE: 1 in = 4,000 ft

DATE: May 19, 2015

Figure 5-11
Groundwater Gradient Map
Lower Aquifer; Fall 2014 (September)
Livermore Valley Groundwater Basin



ZONE 7 WATER AGENCY
100 North Canyons Parkway
Livermore, CA

DRAWN: TR

REVIEWED: MK

FILE: E:\MONITOR\GM\2014WY\AnnualReport2014\Fig5-12-AboveHL14.mxd

SCALE: 1 in = 4,000 ft

DATE: May 19, 2015

Figure 5-12
Groundwater Levels above Historic Lows
Lower Aquifer; Fall 2014 (September)
Livermore Valley Main Groundwater Basin