



FUGRO WEST, INC.

July 15, 2008
Project No. 3033.006.05

4820 McGrath Street, Suite 100
Ventura, California 93003-7778
Tel: (805) 650-7000
Fax: (805) 650-7010

Carpinteria Valley Water District
Post Office Box 578
Carpinteria, California 93014

Attention: Mr. Charles Hamilton, General Manager

Subject: Carpinteria Groundwater Basin, Annual Report for 2007

Dear Mr. Hamilton:

Presented in this letter report is a summary and description of groundwater conditions in the Carpinteria groundwater basin for calendar year 2007. This represents the eighth annual report that has been prepared to assist the Carpinteria Valley Water District (District) in its ongoing efforts (pursuant to its AB3030 Groundwater Management Plan) to manage the groundwater resources of the basin and provide information on water level and water quality conditions to all users of groundwater in the basin. The intent of the annual report is to provide a brief narrative and graphics that document the "health" of the basin's groundwater resources, trends in groundwater levels and water quality, information on land use, and annual groundwater pumpage. Information on the development of the program, selection of wells to be sampled and surface water sampling points, etc., is available in prior reports prepared for the District.

Two large-format sized maps form an integral part of this report. Plate 1 - Water Level Hydrograph Map, depicts wells in the basin used for purposes of water level measurements and to assess changes in groundwater in storage. This map shows the physical limits of the groundwater basin, locations of the key wells, historical variations in water levels, and water level contours. Plate 2 - Chemical Hydrograph Map, depicts the location of wells that are used to monitor water quality in the basin. This map depicts trends of several important water quality constituents for ground and surface water that are routinely obtained as part of the semiannual water quality data collection program. The data provide information on the concentration and spatial distribution of total dissolved solids, nitrate ions, and chloride ions. Both of these maps are updated annually and included in each annual report.

Precipitation

Groundwater recharge occurs by direct infiltration of precipitation, streambed percolation, irrigation return flow, and to a limited extent, by underflow from the "hill and mountain" area. Precipitation in the Carpinteria area for the 2007 calendar water year was recorded at 9.67 inches at the Carpinteria Fire Station. For the 30-year period between 1978 and 2007, an average of 21.72 inches of precipitation fell in the area. The 2007 precipitation was equal to about 45 percent of the 30-year average.

Precipitation data at the Carpinteria Fire Station have been collected for 59 years between 1949 to the present, during which average annual precipitation was 19.92 inches. A graph showing



the cumulative departure from average precipitation is presented as Figure 1 - Cumulative Departure from Average Precipitation. The departure from average precipitation is the difference between precipitation in a specific year and the average precipitation for the period. Figure 1 depicts the sum of these departures over time (cumulative). Based on the cumulative departure from average precipitation at this station as shown on Figure 1, there have been a series of cyclic wet and dry periods. Within the period of record, dry cycles have occurred between 1949 and 1960 (11 years or more) and between 1984 and 1990 (6 years). The current moderately dry cycle has lasted between 1999 and 2007 (8 years).

Groundwater Levels

Water level measurements are made by District staff on a bimonthly basis for about 34 wells in the basin. The locations of these wells are shown on Plate 1. The water level data were obtained from District staff and hydrographs prepared for 17 key wells, which are shown on Plate 1. The data were then used to prepare water level elevation contours, which are shown on Plate 1 for the October 2007 period.

During 2007, water levels in the basin were lower than during the several previous years and, in places, at or below sea level. During October 2007, the time period presented on Plate 1, a pumping depression was present in the central portion of the District generally located around the Headquarters well. The pumping trough was as deep as about 15 feet below sea level during the October 2007 measurement period and several feet below sea level at the coast, a condition that could allow sea water intrusion. There is no documented evidence of sea water intrusion in the basin. Several wells included in the water level measurement program were actively pumped or influenced by nearby pumping wells at the time of the October survey, resulting in a relatively limited number of wells with data for the preparation of the water level elevation contour map.

Water level data from the 20-year period between 1988 and 2007 indicate that water levels are commonly higher in the winter and spring due to recharge from precipitation and lower total groundwater pumpage, and relatively lower in summer and autumn due to pumping of groundwater from wells within the District. In general, the hydrographs show that over the 5-year period (2002 through 2007), water levels in Storage Unit No. 1 have locally fallen by as much as 10 to 20 feet. This amount of water level decline typically recovers within a two to three year cycle of above average rainfall. Several wells within Storage Unit No. 2 (Santa Barbara Formation) including Well - 35E1, located in the extreme southeast part of the basin, have displayed a persistent trend of lower water levels over the period between 1991 and 2003. The declines were presumably related to pumping of wells in this part of the basin, and pumpage amounts that exceed recharge (i.e., overdraft). Since 2003, the water level in Well -35E1 has risen and has since declined to near-record low levels. The District's wells are not, or only very remotely, affected by this activity. Groundwater levels in Storage Unit No. 1 (Casitas Formation) have recovered significantly since the early 1990s due to a reduced groundwater pumpage.

Groundwater Use

Groundwater pumpage in the basin occur both from District production wells (see Plate 1) and from about 100 private wells. Pumpage from District wells are metered. The District supplies imported water and/or local groundwater to numerous agricultural parcels of known acreage and crop type (lemon, avocado, greenhouse, flower fields). From these metered deliveries, unit water



use values (so called determining factors) for various crop types have been estimated to determine private groundwater pumpage. For calendar year 2007, updated unit water values were assigned to land uses based on 2006 land use data. Based on this calculation, a private pumpage estimate of 2,600 to 2,750 acre-feet was calculated, from which an average of 2,700 acre-feet was used. Summaries of District groundwater pumpage and imported water amounts for 2006 and 2007 are included in Appendix A - Supporting Data.

Groundwater pumpage from the basin by the District in calendar year 2007 was 1,340 acre-feet. This volume of pumpage was approximately equal to the 20-year District pumpage average of about of about 1,392 acre-feet. Groundwater pumpage in the District from calendar years 1988 through 2007 are presented in Figure 2 - Water Use and Precipitation Data, Carpinteria Valley, and in Table 1 - Water Use and Precipitation Data. Imported water volumes (Casitas MWD, State Project water, and Lake Cachuma water) and seasonal precipitation totals are also provided. As indicated, groundwater pumpage in the basin from 1988 to 2007 has averaged about 3,750 acre-feet per year (afy), and ranged from as high as 5,472 afy in 1990, to as low as 2,484 afy during 2001. Of the groundwater pumped, District pumpage has typically been about one-quarter to one-third of the total.

Table 1. Water Use and Precipitation Data

Calendar Year	Rainfall (inches)	Estimated Private Pumpage (acre-feet)	Metered CVWD Pumpage (acre-feet)	Imported Water (acre-feet)	Total Pumpage (acre-feet)	District Use (percent)
1988	14.54	1,117	2,546	3,465	3,663	70
1989	7.33	1,556	3,035	3,266	4,591	66
1990	7.75	1,964	3,508	1,774	5,472	64
1991	26.13	2,351	2,664	1,434	5,015	53
1992	27.05	2,174	1,178	3,155	3,352	35
1993	32.62	2,434	1,524	2,808	3,958	39
1994	15.02	2,780	1,305	3,206	4,085	32
1995	41.35	2,418	1,340	2,995	3,758	36
1996	25.86	2,597	1,410	2,896	4,007	35
1997	19.98	2,504	1,242	3,429	3,746	33
1998	41.35	2,481	469	3,549	2,950	16
1999	8.91	2,400 ¹	535	3,907	2,935	18
2000	18.99	2,400 ¹	1,210	2,959	3,610	34
2001	24.23	2,400 ¹	84	3,497	2,484	3
2002	12.28	3,116	662	3,774	3,778	18
2003	14.62	2,596 ²	446	3,769	3,042	15
2004	19.42	2,698 ²	1,265	3,884	3,963	32
2005	27.20	2,183 ²	940	3,693	3,123	30
2006	16.86	2,270 ²	1,142	3,147	3,412	33
2007	9.67	2,700 ³	1,340	2,684	4,040	33
Mean	20.56	2,357	1,392	3,165	3,749	35
Maximum	41.35	3,116	3,508	3,907	5,472	70
Minimum	7.33	1,117	84	1,434	2,484	3

Notes: 1) 1999 to 2001 private pumpage estimated based on long-term average.
 2) 2003 to 2006 private pumpage based on land use data of 2004 and 2006
 3) 2007 private pumpage estimated based on 2006 land use data
Bolded values of Total Pumpage exceed 5,000 acre-feet "safe yield"



The estimated 5,000 afy safe yield of the basin, (GTC, 1976 and 1986), has been exceeded twice in the last 20 years. In the remaining years, total groundwater pumped has been less than 5,000 afy and, on average, has been about 1,251 afy less than the estimated safe yield. Pumpage less than the basic safe yield since about 1992 resulted in a recovery of water levels in the basin and an accumulation of groundwater in storage. In 2003, the District retained the firm of Integrated Water Resources, Inc., to perform an independent review of the perennial yield of the basin (IWR, 2003). The results of that study reasserted that a basin safe or perennial yield of 5,000 afy was appropriate.

Groundwater Quality

Groundwater quality in the Carpinteria basin is monitored by collecting samples from as many as 30 wells and 6 surface water stations on a biannual basis (spring/fall). The data collection program was initiated by the District in early 1999. Laboratory analyses performed include a full range of inorganic chemical constituents typically referred to as "Irrigation Suitability Analysis."

Groundwater quality in the basin continues to be suitable for most beneficial usages. As shown on Plate 2, total dissolved solids (TDS) concentrations for most wells range from 600 to 900 milligrams per liter (mg/l). During 2007, chloride concentrations within Wells -19MI and adjacent -19E1 were over 300 mg/l. Likewise, nitrate concentrations within Well -19MI were as high as 334 mg/l during 2007. By contrast, nitrate concentration within well -19E1 was much lower, a maximum concentration of 6.5 mg/l during 2007. Chloride concentrations in well -19MI have remained relatively steady for the past several years. Since 2005, TDS and nitrate concentrations in Well -19MI have moderated slightly. Well -19M1 is 204 feet deep and likely has very shallow perforations although the actual depth interval is unknown. Well -19E1 is located approximately 900 feet north and is a relatively shallow well. Comparison of quality data from the two wells shows that, although chloride concentrations are higher than many monitored wells, neither nitrate nor TDS are as elevated as those in Well -19M1.

Groundwater in the basin is generally characterized as calcium bicarbonate in chemical nature and locally demerited by the presence of elevated nitrate and chloride ion concentrations in shallow aquifers in Sections 19 and 20 of the basin. Other than the locally high nitrate ion concentrations in Section 19 and 20, the groundwater quality appears stable with no long-term trends toward impairment.

Summary and Conclusions

Based on the data for 2007 and the preceding years, aquifers in the Carpinteria basin continue to be adequately recharged in average to above average precipitation years, and provide a generally high quality of groundwater for the prevailing usages. Water levels in the basin were generally above sea level in 2007, with the exception of a seasonal pumping trough in the central portion of the basin associated with the District's Headquarters well. Groundwater pumpage from the basin in 2007 was estimated to be approximately 4,040 acre-feet. No adverse water quality conditions or trends are apparent other than the occurrence of elevated nitrate and chloride ion concentrations in a single shallow well in the western portion of the basin.

We recommend that the data collection program (water levels and water quality) be maintained in its current form in 2008 with the following modifications:



- Further evaluate land use practices and application of nitrogen-based fertilizers in excess of crop requirements in Sections 19 and 20 of the basin. Evaluate whether the sample collection points for water quality wells in the area are downstream of a chemigation injection point. For all wells in the area, evaluate if operational backflow valves are installed to preclude inadvertent injection of chemigated water.
- Prepare a map illustrating the annual change of water level elevation and integrate these data using GIS to estimate the annual change of groundwater in storage.
- Attempt to target the timing of the collection of water level data throughout the year to avoid the influence of pumping wells (in particular, District wells).
- The District should develop a process with the Santa Barbara County Environmental Health Department (EHD) that ensures the District will be routinely and automatically informed of all new well construction, well rehabilitation, and well destruction permits filed with the EHD, including receipt of State Well Completion Reports, geophysical electric logs, and water quality analysis.
- Develop a more formal conjunctive use operational model of the District water supplies that integrates groundwater and imported water supplies to take better advantage of the accumulated groundwater storage potential of the basin.

Closure

This report has been prepared for the exclusive use of the Carpinteria Valley Water District and their agents for specific application to the conditions of groundwater supply and quality in the Carpinteria groundwater basin in Carpinteria, California. The findings and conclusions presented herein were prepared in accordance with generally accepted hydrogeologic engineering practices. No other warranty, express or implied, is made.

Sincerely,

FUGRO WEST, INC.

A handwritten signature in blue ink, appearing to read "D. Gardner".

David A. Gardner, CHg 122
Principal Hydrogeologist

Attachments: References
Figure 1 - Cumulative Departure from Average Precipitation
Figure 2 - Water Use and Precipitation Data
Plate 1 - Water Level Hydrograph Map
Plate 2 - Chemical Hydrograph Map
Appendix A - Supporting Data

Copies Submitted: (1) Addressee



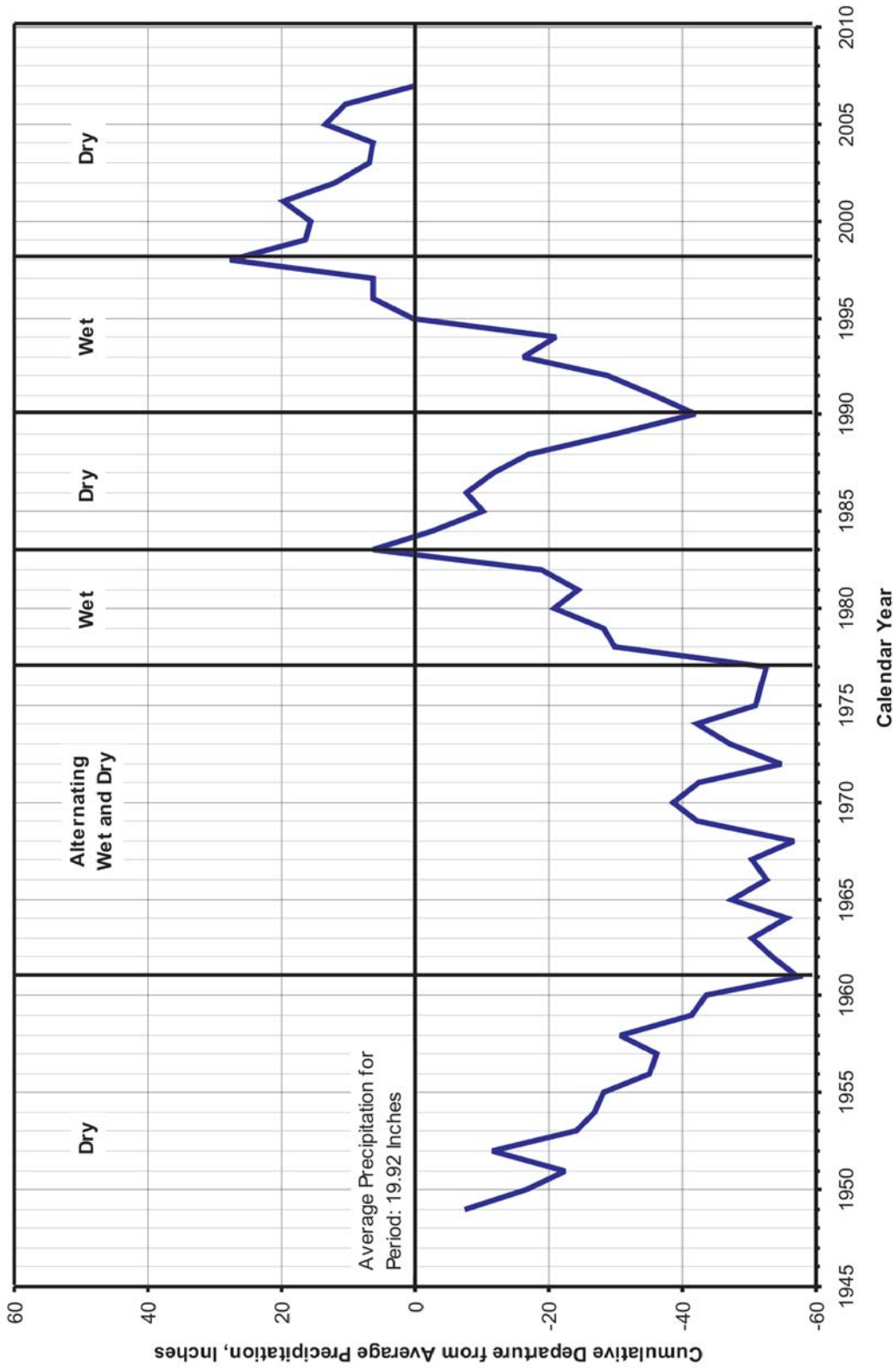
REFERENCES

Geotechnical Consultants, Inc. (1976), *Hydrogeologic Investigation of the Carpinteria Ground Water Basin*, consultant's unpublished report prepared for the Carpinteria County Water District, June 11.

_____ (1986), *Hydrogeologic Update, Carpinteria Groundwater Basin*, consultant's unpublished report prepared for the Carpinteria County Water District, July.

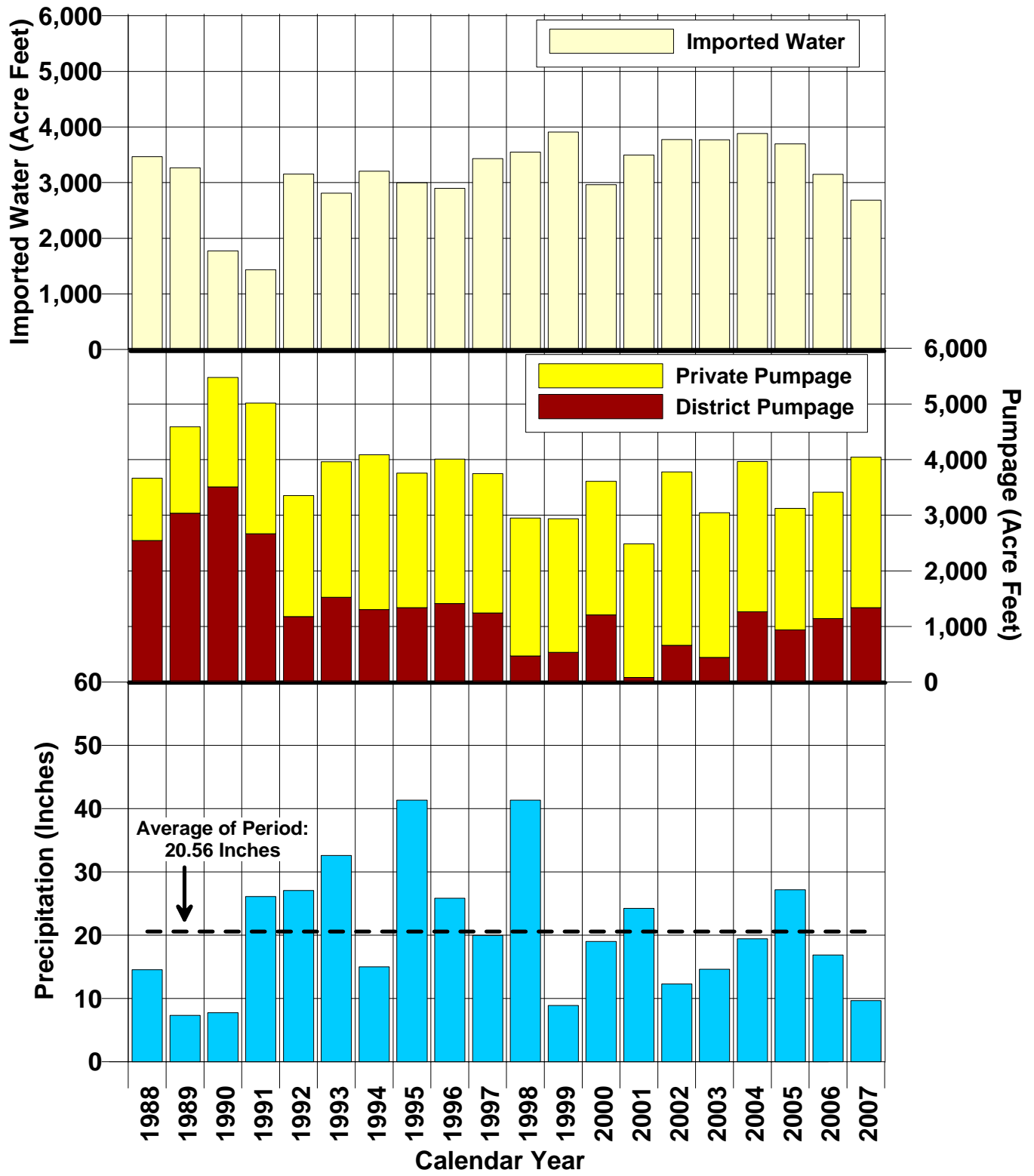
Integrated Water Resources, Inc. (IWR, 2003) *Perennial Yield Review of the Carpinteria Valley Groundwater Basin*, consultant's unpublished report prepared for the Carpinteria County Water District, February 25.

FIGURES



CUMULATIVE DEPARTURE FROM AVERAGE PRECIPITATION
Carpenteria Fire Station
Carpenteria Valley Water District

FIGURE 1



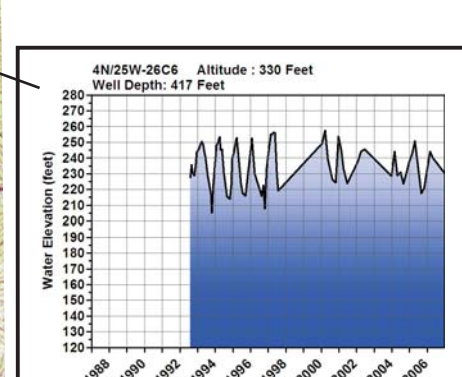
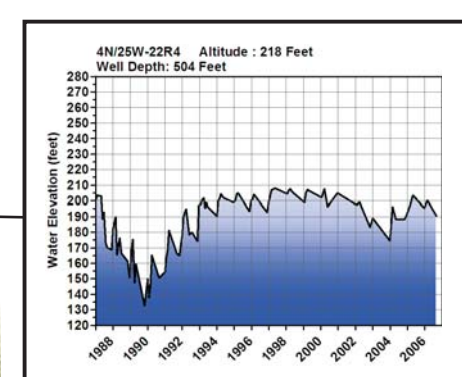
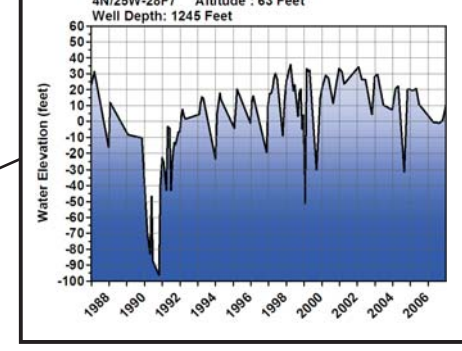
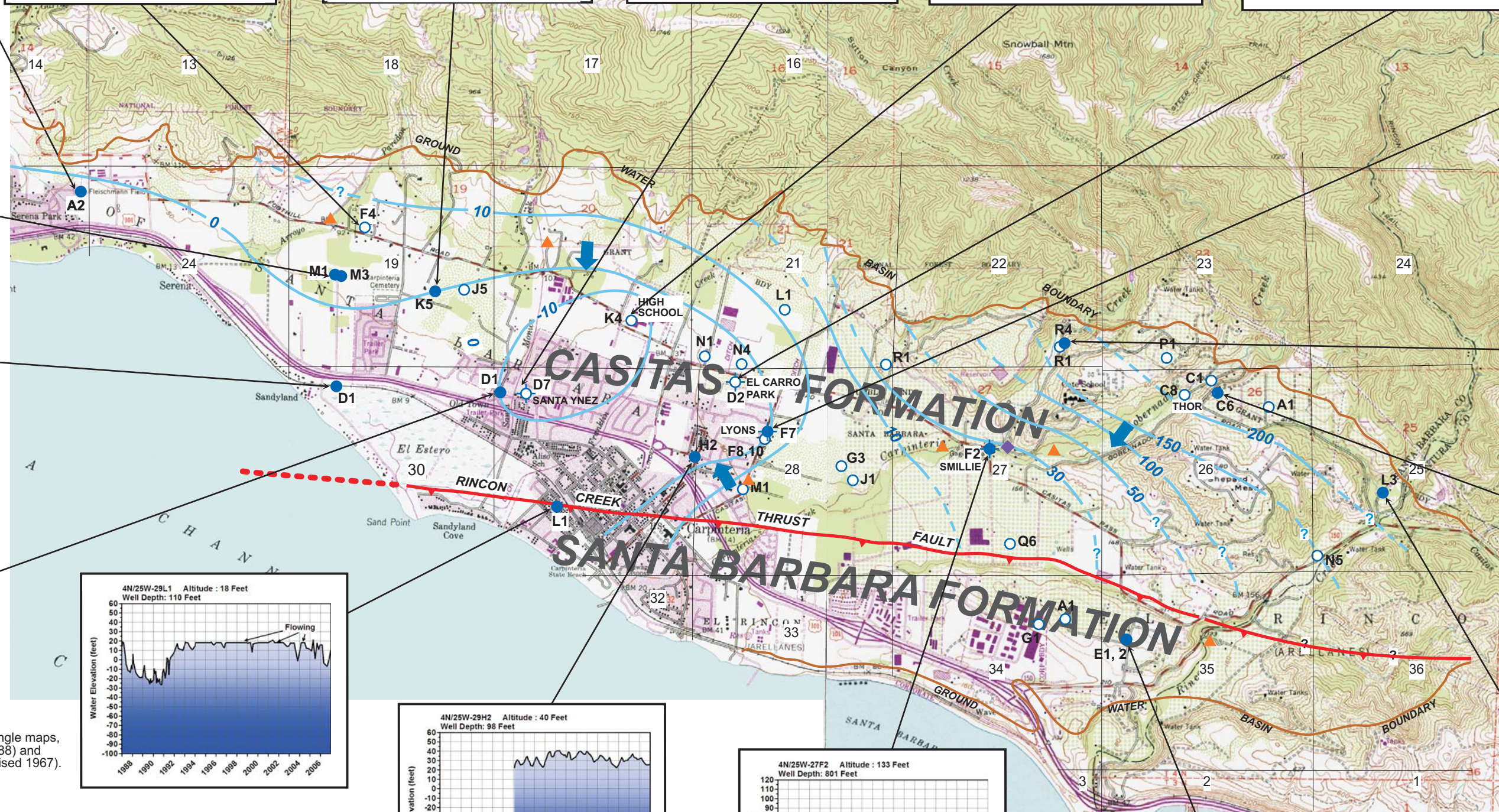
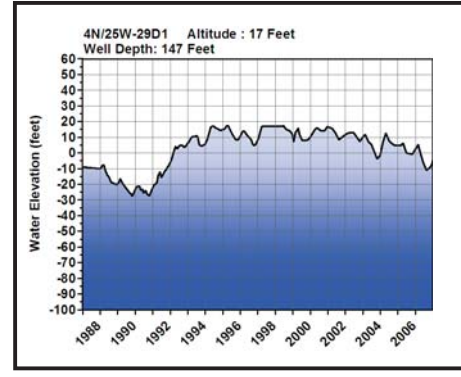
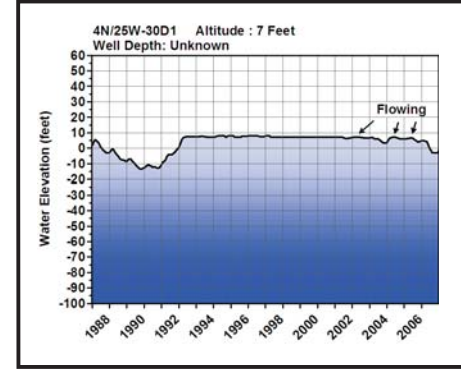
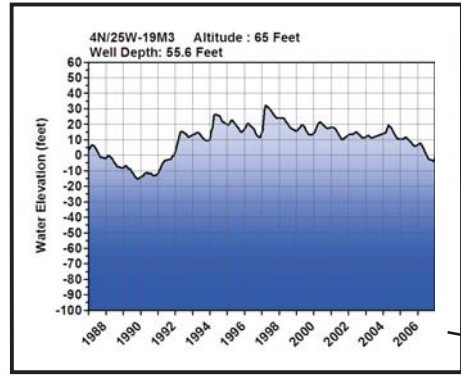
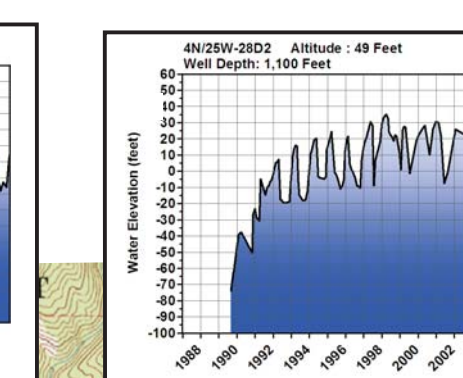
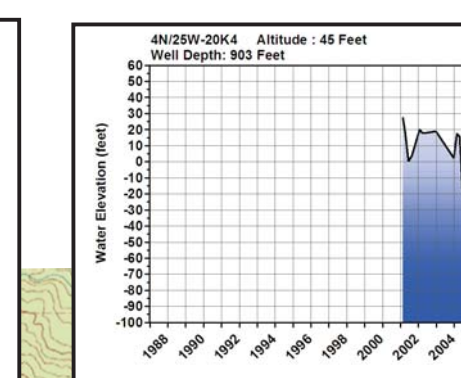
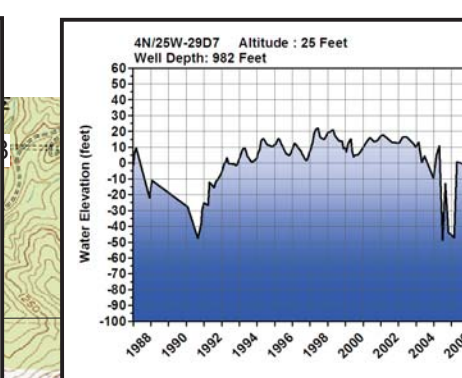
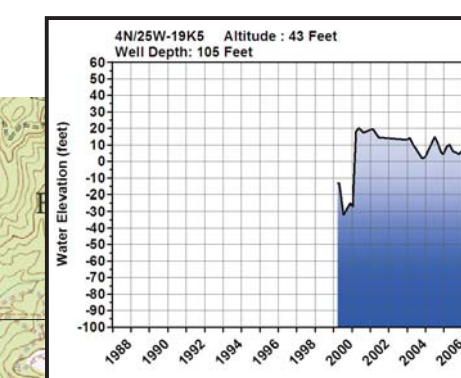
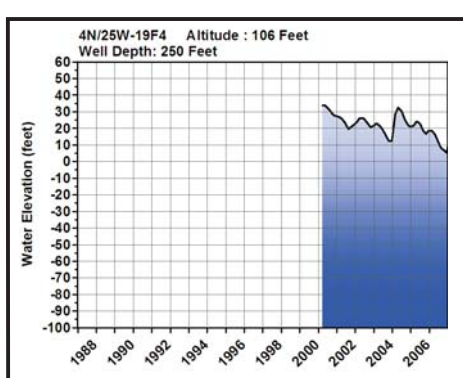
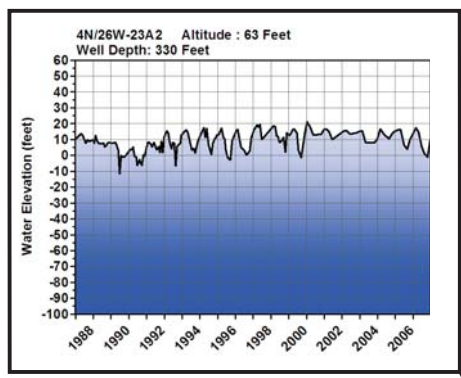
WATER USE AND PRECIPITATION DATA
 Carpenteria Valley Water District

FIGURE 2

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PLATES

RANGE 26 WEST ← → RANGE 25 WEST



BASE MAP SOURCES: USGS 7.5' California quadrangle maps, Carpinteria (photorevised 1988) and White Ledge Peak (photorevised 1967).

LEGEND

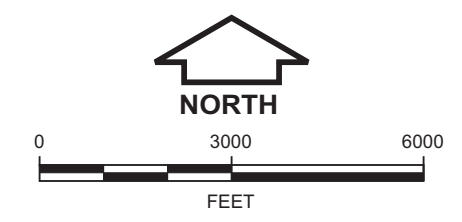
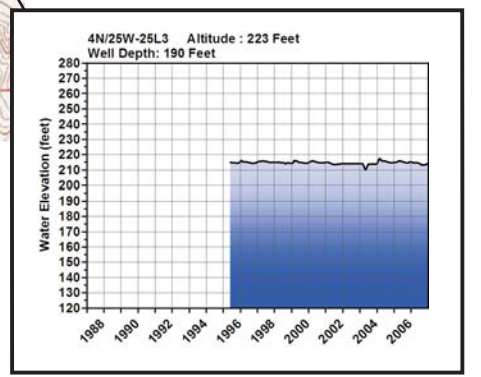
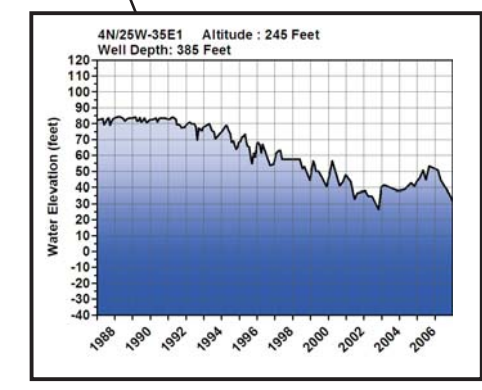
- H1 Approximate location of well with long term hydrograph record
- F4 Approximate location of well included in bimonthly water level data collection program
- D7 CVWD production well
- SANTA YNEZ Casitas Pass Road Precipitation Station No. 383, Santa Barbara County
- Surface water quality monitoring station
- Groundwater basin boundary
- Approximate location of Rincon Creek Thrust Fault

Water District boundary

Contour of equal water level elevation in feet, October 2007, dashed where approximate, queried where inferred

Principal direction of groundwater flow

Water well hydrograph, altitude of water surface in feet



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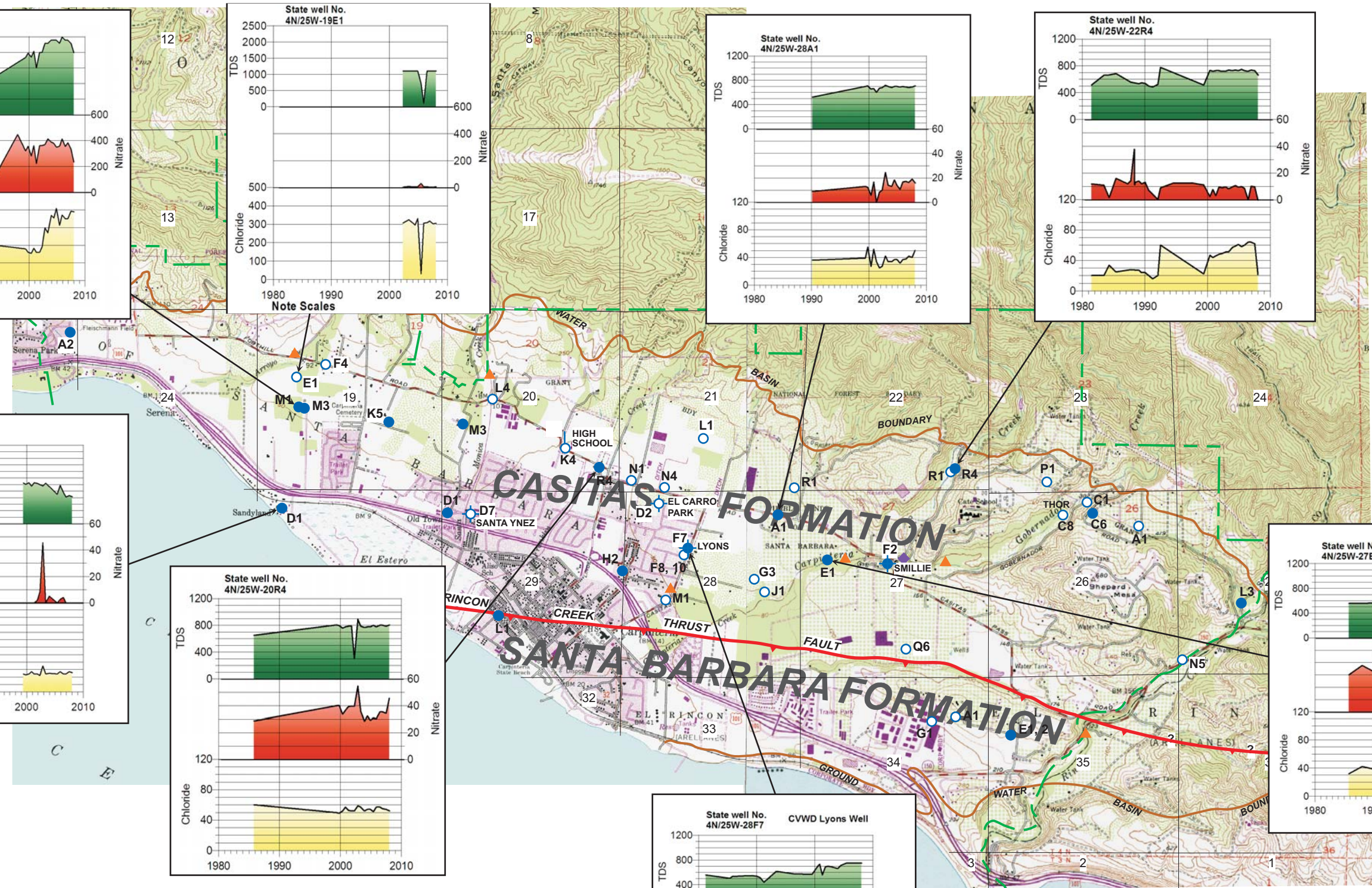
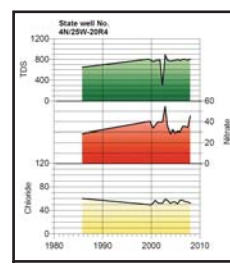
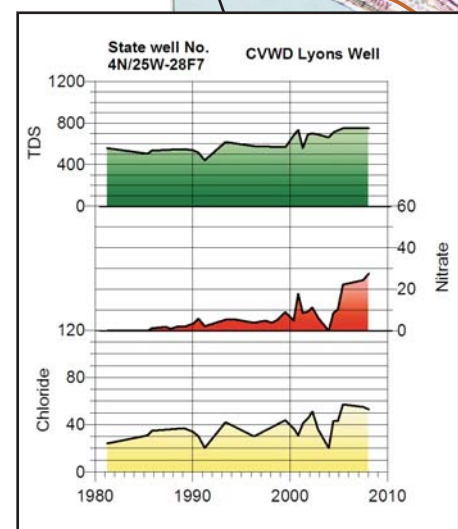
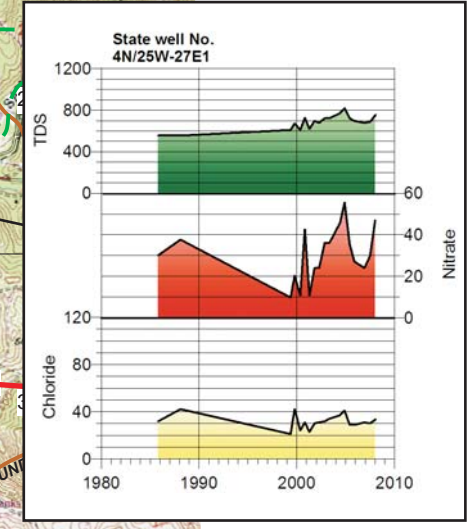
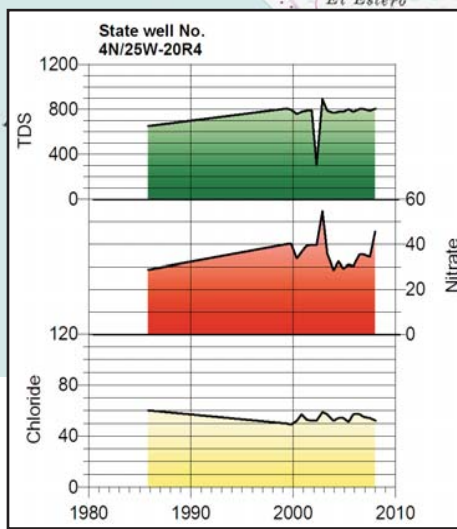
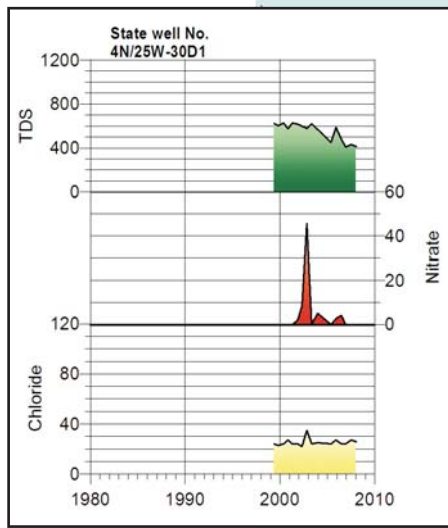
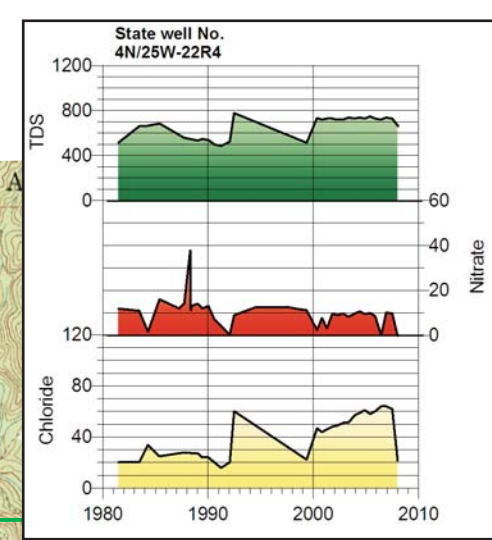
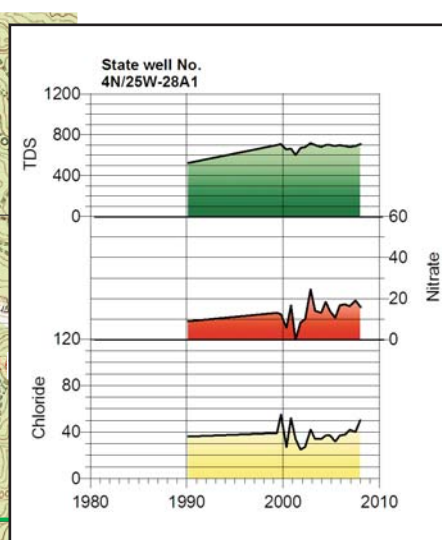
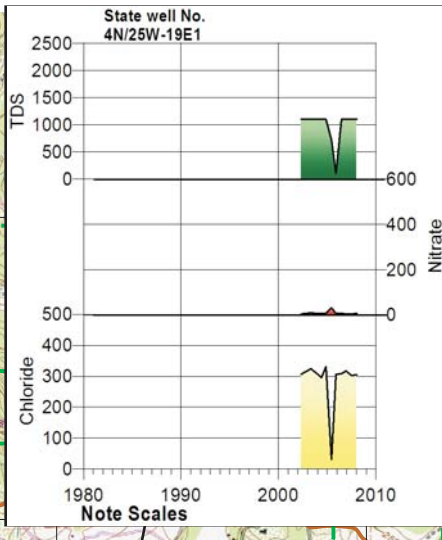
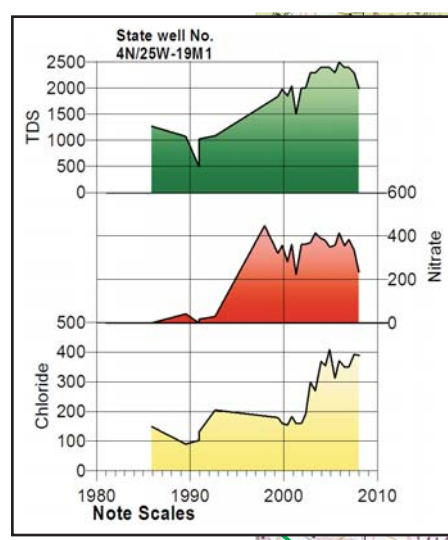
WATER LEVEL HYDROGRAPH MAP

Client: **CARPINTERIA VALLEY WATER DISTRICT**

Project No. 3033.006.05 June 2008 PLATE 1

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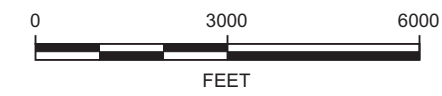


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- ◆ SANTA YNEZ Casitas Pass Road Precipitation Station No. 383, Santa Barbara County
- ▲ Surface water quality monitoring station
- Groundwater basin boundary
- Approximate location of Rincon Creek Thrust Fault
- Water district boundary

Chemical Hydrograph, all constituents in milligrams per liter (mg/l)

BASE MAP SOURCES: USGS 7.5' California quadrangle maps, Carpinteria (photorevised 1988) and White Ledge Peak (photorevised 1967).



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CHEMICAL HYDROGRAPH MAP

Client: **CARPENTERIA VALLEY WATER DISTRICT**
Project No. 3033.006.05 April 2008 PLATE 2

**APPENDIX A
SUPPORTING DATA**

Carpinteria Valley WD
 Robert McDonald, District Engineer
 PO BOX 578
 CARPINTERIA, CA 93013
 PWS# 4210001 SD

PUBLIC WATER SYSTEM STATISTICS

Calendar Year 2007

1. General Information

Please follow the provided instructions.

Contact : Robert McDonald

Title: District Engineer

Phone: 805-684-2816

Fax: 805-684-3170

E-mail: bob@cvwd.net

Website: www.cvwd.net

County: **Santa Barbara**

Population served: **18685**

Names of communities served: City of Carpinteria and

unincorporated areas of Santa Barbara County

2. Active Service Connections

Customer Class	Potable Water		Recycled Water	
	Metered	Unmetered	Metered	Unmetered
Single Family Residential	3026	0	0	0
Multi-family Residential	317	0	0	0
Commercial/Institutional	275	0	0	0
Industrial	70	0	0	0
Landscape Irrigation	0	0	0	0
Other	121	0	0	0
Agricultural Irrigation	423	0	0	0
TOTAL	4232	0	0	0

3. Total Water Into the System - Units of production:

acre-feet million gallons hundred cubic feet

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Wells	90.58	42.00	127.11	152.00	207.70	165.00	174.00	147.00	123.00	25.75	58.91	26.65	1339.7
Surface	234.00	110.00	137.00	233.00	296.00	281.00	346.00	354.00	50.00	89.00	215.00	139.00	2484
Purchased ^{1/}	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	0.00	0.00	200
Total Potable	324.58	152	264.11	385	503.7	446	520	501	273	214.75	273.91	165.65	4023.7
Untreated Water													
Recycled ^{2/}													

1/ Potable wholesale supplier(s): State Water Project

2/ Recycled wholesale supplier(s):

Level of treatment: acre-feet million gallons hundred cubic feet

4. Metered Water Deliveries - Units of delivery:

If recycled is included, ✓ box ↓

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
A. Single Family Residential <input type="checkbox"/>	79.79	58.46	68.10	91.59	98.58	107.23	115.81	124.61	98.45	104.16	89.19	66.67	1102.638
B. Multi-family Residential <input type="checkbox"/>	42.86	31.32	35.47	42.62	43.06	47.81	47.92	54.48	42.26	46.37	39.75	31.34	505.2709
C. Commercial/Institutional <input type="checkbox"/>	37.37	25.08	30.25	43.71	54.72	52.98	68.68	65.66	52.64	47.71	41.73	27.81	548.3471
D. Industrial <input type="checkbox"/>	11.40	5.73	8.78	10.20	9.56	12.32	11.45	14.31	11.29	12.30	10.22	6.95	124.5225
E. Landscape Irrigation <input type="checkbox"/>													
F. Other <input type="checkbox"/>													
Total Urban Retail (A thru F)	171.4256	120.5969	142.5918	188.1221	205.9183	220.3352	243.8636	259.0657	204.6465	210.551	180.8907	132.7709	2280.778
Agricultural Irrigation <input type="checkbox"/>	167.17	68.43	123.52	172.71	221.32	210.58	268.93	277.39	197.35	221.17	171.36	128.64	2228.579
Wholesale (to other agencies) <input type="checkbox"/>													

Department of Water Resources
Public Water System Statistics

Calendar Year 2006

1. General Information

Please follow the guide lines on the

Contact: Robert Mc Donald
 Title: District Engineer
 Phone: (805) 684-2816
 Fax: (805) 684-3170
 E-mail: bob@cvwd.net
 Website: WWW.CVWD.NET
 Communities Served: City of
 Carpinteria and portions of
 unincorporated areas of S.B. Co
 County: Santa Barbara (S.B.)
 Population served: 18685

4210001
 SD
 Carpinteria Valley WD
 Robert Mc Donald
 PO Box 578
 Carpinteria CA, 93013

2. Active Service Connections

Customer Class	Recycled Water		Potable Water		Inside City Limits		Outside City Limits	
	Metered	Unmetered	Metered	Unmetered	Metered	Unmetered	Metered	Unmetered
Single Family Residential	---	0	3007	0	2456	0	551	0
Multi Family Residential	---	0	314	0	304	0	10	0
Commercial/Institutional	---	0	275	0	251	0	24	0
Industrial	---	0	64	0	64	0	0	0
Landscape Irrigation	---	0	0	0	0	0	0	0
Other	---	0	114	0	101	0	13	0
Agriculture Irrigation	---	0	424	0	16	0	408	0
TOTAL	---	0	4198	0	3192	0	1006	0

Complete this portion if the system serves all or part of

3. Total Water Into the System - Units of Production

	X acre feet												million gallons												hundred cubic feet														
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Wells	77.69	111.9	143	53.6	181.4	163.03	118.98	41.2	62.31	109.78	39.2	40	1142.09																										
Surface Purchased ^{1/}	184	169	118	48	175	321	478	507	422	279	283	163	3147																										
Total Potable	261.69	280.9	261	101.6	356.4	484.03	596.98	548.2	484.31	388.78	322.2	203	4289.09																										
Recycled ^{2/}	---	---	---	---	---	---	---	---	---	---	---	---	---																										

1/ Potable wholesale supplier(s) Cachuma Water Project & State Water Project

2/ Recycled wholesale supplier(s):

Level of treatment: _____

4. Metered Water Deliveries - Units of Deliveries

	X acre feet												million gallons												X hundred cubic feet														
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
A. Single Family Residential	30491	31214	24470	23546	29874	49017	49524	47273	49960	38568	35799	36176	445912																										
B. Multi Family Residential	18664	15360	14883	15075	15305	22335	20712	20432	19973	17866	16074	18336	215015																										
C. Commercial/Institutional	13549	14386	11084	11263	14305	23450	26738	24771	26641	18952	17390	16190	218719																										
D. Industrial	4030	3430	3199	2989	3810	5648	5049	5506	4746	5120	4151	4208	51886																										
E. Landscape Irrigation	0	0	0	0	0	0	0	0	0	0	0	0	0																										
F. Other	0	0	0	0	0	0	0	0	0	0	0	0	0																										
Total Urban Retail (A thru F)	66734	64390	53636	52873	63294	100450	102023	97982	101320	80506	73414	74910	931532																										
Agriculture Irrigation	37267	60444	28464	28050	38623	100638	110915	107416	101031	81155	79960	57542	831505																										
Wholesale (to other agencies)	-	-	-	-	-	-	-	-	-	-	-	-	-																										

DWR 38 (Rev. 04/05)

**Column totals for A thru F may be subject to rounding errors

1/30/2007

Santa Barbara County Flood Control District

123 E. Anapamu St., Santa Barbara, CA 93101
(805) 568-3440, Fax (805) 568-3434

Official Rainfall Record

Monthly Depth Durations and Expected Return Periods

Station: 208 Station Type: Data Logger w/TB & Wedge

Latitude: 342353 Longitude: 1193106

Station Name: Carpinteria Fire Station

Elevation: 15

WY	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	WY
1948-49	0.00	0.00	0.00	2.96	1.60	1.14	1.95	0.00	1.44	0.10	0.00	0.00	9.19
1949-50	0.00	0.00	2.71	3.51	2.51	3.06	1.33	0.43	0.00	0.15	0.10	0.00	13.80
1950-51	0.70	0.68	1.46	0.32	2.13	1.44	0.63	1.63	0.00	0.00	0.00	0.10	9.09
1951-52	0.00	0.90	2.05	5.48	12.08	0.05	7.18	2.27	0.00	0.00	0.00	0.00	30.01
1952-53	0.00	0.00	4.00	5.20	1.70	0.00	1.27	1.71	0.00	0.00	0.00	0.00	13.88
1953-54	0.00	0.00	2.60	0.15	6.25	2.70	4.35	0.38	0.00	0.00	0.00	0.00	16.43
1954-55	0.00	0.00	1.75	1.75	4.95	2.25	0.35	3.05	0.60	0.00	0.00	0.00	14.70
1955-56	0.00	0.00	1.65	5.93	7.80	0.82	0.00	2.83	1.12	0.00	0.00	0.00	20.15
1956-57	0.00	0.08	0.00	0.30	4.60	3.46	0.49	1.76	1.03	0.00	0.00	0.00	11.72
1957-58	0.00	1.70	0.80	5.00	3.08	8.77	6.51	5.68	0.32	0.00	0.00	0.00	31.86
1958-59	1.19	0.00	0.00	0.08	2.20	4.67	0.00	1.33	0.00	0.00	0.00	0.00	9.47
1959-60	0.00	0.00	0.00	0.92	3.60	3.72	1.26	2.17	0.00	0.00	0.00	0.00	11.67
1960-61	0.00	0.06	7.11	0.00	1.30	0.05	0.70	0.00	0.00	0.00	0.00	0.00	9.22
1961-62	0.20	0.00	2.93	1.12	2.62	19.09	1.43	0.00	0.00	0.00	0.00	0.00	27.39
1962-63	0.00	0.55	0.00	0.00	1.00	6.65	4.15	2.88	0.30	1.14	0.00	0.00	16.67
1963-64	2.10	1.15	3.69	0.00	1.70	0.00	2.00	2.57	0.10	0.00	0.00	0.00	13.31
1964-65	0.00	0.87	2.42	5.13	1.15	0.67	2.45	8.37	0.16	0.06	0.00	0.00	21.28
1965-66	0.21	0.00	11.02	4.17	1.98	1.14	0.11	0.00	0.23	0.00	0.00	0.00	18.86
1966-67	0.00	0.00	3.70	7.51	6.74	0.48	3.08	4.81	0.00	0.00	0.00	0.00	26.32
1967-68	0.40	0.00	5.39	1.20	2.01	1.69	4.40	1.04	0.00	0.00	0.00	0.14	16.27
1968-69	0.00	1.36	0.75	2.27	18.31	10.62	0.54	2.03	0.18	0.09	0.00	0.00	36.15
1969-70	0.00	0.00	2.55	0.24	3.40	2.57	6.51	0.00	0.00	0.00	0.00	0.00	15.27
1970-71	0.00	0.06	5.31	5.71	1.32	2.36	0.97	0.62	2.34	0.00	0.00	0.00	18.69
1971-72	0.00	0.15	0.62	7.81	0.70	0.00	0.00	0.19	0.00	0.12	0.00	0.00	9.59
1972-73	0.00	0.25	5.24	0.99	6.94	11.75	3.42	0.06	0.23	0.05	0.00	0.14	29.07
1973-74	0.00	0.64	3.14	1.34	9.79	0.16	4.74	0.28	0.00	0.00	0.00	0.00	20.09
1974-75	0.00	1.00	0.15	8.67	0.00	4.62	4.70	1.29	0.00	0.00	0.00	0.00	20.43
1975-76	0.16	0.20	0.11	0.31	0.00	7.40	2.59	1.01	0.03	0.26	0.00	0.00	12.07
1976-77	6.35	0.00	0.51	0.82	4.33	0.26	1.90	0.00	4.39	0.12	0.00	0.68	19.36
1977-78	0.00	0.00	0.30	7.40	9.91	10.81	12.79	2.74	0.00	0.10	0.00	0.09	44.14
1978-79	1.55	0.10	2.03	2.41	3.63	5.68	8.56	0.00	0.09	0.00	0.00	0.18	24.23
1979-80	0.80	0.73	0.73	1.38	7.62	13.14	4.13	0.85	0.21	0.00	0.05	0.00	29.64
1980-81	0.03	0.00	0.00	1.21	3.19	2.24	6.38	0.91	0.00	0.00	0.00	0.00	13.96
1981-82	0.56	0.00	2.08	1.00	3.47	0.62	6.23	3.03	0.15	0.12	0.00	0.00	17.26
1982-83	1.47	0.65	6.22	3.49	9.98	7.05	8.44	4.19	0.35	0.20	0.00	1.84	43.88
1983-84	1.09	4.41	3.94	3.71	0.04	0.00	0.39	0.27	0.29	0.00	0.00	0.65	14.79
1984-85	0.62	0.51	2.86	5.67	1.68	2.09	1.69	0.14	0.00	0.00	0.00	0.00	15.26
1985-86	0.08	0.73	5.03	0.98	2.35	8.61	6.20	1.80	0.00	0.00	0.00	0.00	25.78
1986-87	1.61	0.00	1.41	0.41	2.33	2.54	3.54	0.15	0.00	0.00	0.00	0.00	11.99
1987-88	0.00	1.52	1.92	3.92	2.90	2.72	0.60	3.76	0.00	0.00	0.00	0.00	17.34
1988-89	0.10	0.00	1.18	3.28	0.50	3.58	0.60	0.78	0.25	0.00	0.00	0.00	10.27
1989-90	0.08	1.07	0.47	0.00	3.13	3.04	0.16	0.10	0.88	0.00	0.00	0.00	8.93
1990-91	0.06	0.00	0.32	0.06	1.79	2.55	14.92	0.04	0.00	0.30	0.02	0.05	20.11
1991-92	0.00	0.62	0.21	5.63	3.10	10.46	4.46	0.00	0.34	0.10	0.47	0.00	25.39
1992-93	0.00	1.94	0.00	6.18	13.88	8.32	6.08	0.00	0.10	0.87	0.08	0.00	37.45
1993-94	0.00	0.10	1.54	1.65	1.09	6.51	2.32	0.73	0.40	0.00	0.00	0.00	14.34
1994-95	0.47	0.45	1.78	1.27	21.42	1.92	12.22	0.39	0.98	0.69	0.00	0.00	41.59
1995-96	0.00	0.00	0.24	3.49	2.27	9.54	2.31	1.28	0.42	0.00	0.00	0.00	19.55
1996-97	0.00	3.03	0.00	7.01	7.83	0.10	0.00	0.00	0.00	0.10	0.00	0.00	18.07
1997-98	0.00	0.09	3.22	8.64	4.97	23.55	4.16	2.38	4.31	0.16	0.00	0.00	51.48
1998-99	0.12	0.00	0.75	0.95	2.26	0.86	3.16	1.87	0.00	0.02	0.00	0.00	9.99
1999-00	0.02	0.00	0.72	0.00	1.43	8.66	2.74	3.90	0.00	0.00	0.00	0.00	17.47
2000-01	0.00	2.18	0.00	0.08	6.30	5.24	4.73	1.67	0.18	0.02	0.03	0.00	20.43
2001-02	0.04	0.49	3.75	1.78	0.59	0.31	0.37	0.11	0.14	0.01	0.05	0.02	7.66
2002-03	0.20	0.01	5.88	4.59	0.09	2.91	4.46	1.90	1.72	0.19	0.02	0.00	21.97
2003-04	0.04	0.09	1.31	1.89	0.42	5.18	0.57	0.01	0.02	0.01	0.03	0.00	9.57
2004-05	0.00	4.46	0.10	8.62	11.20	7.41	3.96	0.74	1.01	0.02	0.00	0.04	37.56
2005-06	0.20	1.08	0.82	0.72	2.82	2.88	3.26	5.88	0.90	0.00	0.00	0.02	18.58
2006-07	0.01	0.09	0.26	0.72	3.24	1.86	0.18	0.70	0.00	0.02	0.01	0.02	7.11

Santa Barbara County Flood Control District

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(805) 568-3440, Fax (805) 568-3434

Official Rainfall Record

Monthly Depth Durations and Expected Return Periods

Station: 208 Station Type: Data Logger w/TB & Wedge

Latitude: 342353 Longitude: 1193106

Station Name: Carpinteria Fire Station

Elevation: 15

WY	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	WY
Total	20.46	34.00	120.73	167.03	251.22	261.97	198.62	88.71	25.21	5.02	0.86	3.97	1177.80
N	59	59	59	59	59	59	59	59	59	59	59	59	59
Mean	0.35	0.58	2.05	2.83	4.26	4.44	3.37	1.50	0.43	0.09	0.01	0.07	19.96
Max	6.35	4.46	11.02	8.67	21.42	23.55	14.92	8.37	4.39	1.14	0.47	1.84	51.48
Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.11
StdDev	0.92	0.96	2.19	2.65	4.35	4.72	3.26	1.73	0.87	0.21	0.06	0.26	10.10
CV	2.65	1.67	1.07	0.94	1.02	1.06	0.97	1.15	2.05	2.41	4.31	3.92	0.51
Reg CV	2.68	1.28	1.03	0.84	0.90	0.99	0.87	1.11	1.83	2.91	3.81	4.10	0.44
Reg Skew	3.80	1.80	1.40	1.00	1.60	1.10	1.10	1.70	2.60	3.60	4.40	4.80	1.10
FIC	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Return Period in Years

2	0.00	0.37	1.56	2.45	3.30	3.65	2.84	1.05	0.14	0.00	0.00	0.00	18.38
5	0.59	1.05	3.54	4.64	6.86	7.74	5.56	2.61	0.80	0.16	0.02	0.09	26.55
10	1.31	1.55	4.87	6.02	9.35	10.33	7.29	3.71	1.38	0.35	0.07	0.30	31.73
25	2.44	2.19	6.54	7.68	12.54	13.50	9.40	5.14	2.20	0.64	0.14	0.66	38.06
50	3.38	2.68	7.74	8.87	14.91	15.83	10.95	6.19	2.84	0.89	0.20	0.98	42.71
100	4.35	3.16	8.94	10.01	17.25	18.02	12.42	7.24	3.50	1.14	0.26	1.32	47.10
200	5.37	3.64	10.12	11.13	19.55	20.18	13.85	8.30	4.16	1.40	0.33	1.68	51.41
500	7.43	4.44	11.97	12.75	23.34	23.34	15.96	10.03	5.31	1.92	0.47	2.44	57.73
1000	7.82	4.74	12.80	13.60	24.84	24.97	17.04	10.70	5.74	2.02	0.49	2.56	60.98
10000	11.47	6.31	16.53	17.00	32.31	31.65	21.50	14.09	8.04	2.95	0.74	3.89	74.33