

SAN GORGONIO PASS WATER AGENCY

REPORT ON WATER CONDITIONS



Reporting Period 2009

San Geronio Pass Water Agency
Annual Report on Water Conditions
Reporting Period 2009

Prepared by

San Geronio Pass Water Agency
1210 Beaumont Avenue
Beaumont, CA 92223

April 2011

SAN GORGONIO PASS WATER AGENCY

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On the cover:

This series of photos depicts the installation of a new 16-cfs (10 million gallons per day) pump being installed at Cherry Valley Pump Station. The pump doubles the capacity of the facility. The Agency is adding to the capacity in order to meet projected increased water demands in the service area.

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San Gorgonio Pass Water Agency

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To the Reader:

President:
John Jeter

The San Gorgonio Pass Water Agency publishes this report on an annual basis, and has done so in some form for over two decades.

Vice President:
Bill Dickson

The primary purpose of the report is to convey the status of ground and surface water resources within the region. The Agency uses the report as a tool to help us determine the extent of recharge needed in local basins each year.

Treasurer:
David Dysart

The Agency maintains an extensive ~~data~~ base on local water resources. This report affords the Agency the opportunity to make that ~~data~~base easily accessible to the public and to other interested parties.

Directors:
Ted Haring
Mary Ann Melleby
Ray Morris
Barbara Voigt

This report complies with the Stipulation for Entry of Judgment, Cherry Valley Environmental Planning Group vs. San Gorgonio Pass Water Agency, Case No. 249947 (Riverside Superior Court 1996). That judgment requires the Agency to produce such an annual report. According to the Judgment, "These annual reports shall evaluate, by utilizing such reliable information as may be available, the groundwater conditions within [the Agency's] jurisdiction, and shall determine the annual overdraft, if any, of the groundwater basins and amount of water to be scheduled for following year or years replenishment. In preparing the annual reports on water conditions, [the Agency] shall collect, review, and make available to the public, water extraction data with [the Agency's] boundaries from such drilling logs, recordation files, or other sources as may be available to [the Agency]."

*General Manager
& Chief Engineer*
Jeff Davis, P.E.

Legal Counsel:
*McCormick, Kidman
& Behrens*

This report is available on the Agency's website, www.sgpwa.com, under the Reports page, or available from the Agency's office in hard copy for a nominal copying charge. It is also available as a CD, also for a nominal cost.

In reading this report, we hope that you learn more about our region's most valuable natural resource--its water.


Jeff Davis
General Manager

April 2011

1.0 Background

In preparing this Annual Report for calendar year 2009, the Agency utilized the most reliable data available. The Annual Report's analysis of water supply, groundwater conditions, and water utilization within the San Geronio Pass area is based on hydrologic and basin utilization data reflecting conditions during the reporting period, and, to some extent, historical data stored in Agency files.

Tables 1, 2, and 3 are extraction (production) summaries of groundwater pumping within the Agency's service area. In some cases, changes in these summaries from previous years reflect increases or decreases resulting from more complete reporting of production information. Some groundwater extractions published in previous years' reports have been revised in this report as more complete information has become available.

The extraction data listed in this report were obtained from the State Water Resources Control Board, Division of Water Rights; local sources; or in some cases estimated by the Agency. The Agency does not independently verify the data. The State Water Resources Control Board, Division of Water Rights, does not require filing for pumpers extracting less than 25 acre feet per year. Also, it is likely that some pumpers do not file as required. The data in these tables represent the Agency's best estimate of actual pumping, based on both actual data and production estimates. These estimates are based on personal interviews, a review of previous pumping records, or both. While wells owned by appropriators (water purveyors) are metered, most wells are not. Most wells without meters are smaller and produce a relatively small amount of water.

This report also includes some water quality data from the State Water Project's sampling station at Devil Canyon. Devil Canyon is the closest sample station to the Agency and is representative of the water that the Agency receives from the State Water Project. As shown in the data, water quality varies from year to year and from month to month. This water quality is directly affected by conditions in the Sacramento/San Joaquin Delta.

The water quality constituent of most interest to the Agency and to the region is TDS, or total dissolved solids (salts or salinity). Salinity is becoming more heavily regulated by Regional Water Quality Control Boards throughout the State, and recent activity by the Santa Ana Regional Board indicates that this is of great interest to regulators in the region.

Legislation passed in late 2009 requires groundwater elevation monitoring such as the Agency performs in its service area throughout the State. The CASGEM (California State Groundwater Elevation Monitoring) program is in the process of being set up by the California Department of Water Resources to ensure that the data collected by the Agency every year is reported to the State, so that more complete groundwater elevation records may be maintained statewide in the future. While groundwater basins in the Pass area have been monitored for many years, this has not been true in most of the State.

2.0 Description of Area

The San Gorgonio Pass Water Agency covers approximately 225 square miles in northwestern Riverside County, and two small areas in San Bernardino County (see Figure 1). In 2009, the Agency completed an annexation of property in San Bernardino County east of Oak Glen Road in Edgar Canyon that is owned by the Beaumont Cherry Valley Water District.

The region includes two principal surface drainage systems as shown on Figure 2. These include (1) Little San Gorgonio and Noble Creeks, and tributaries, which drain the western portion of the area into San Timoteo Creek and eventually the Santa Ana River, and (2) the San Gorgonio River and tributaries, which drain the eastern portion of the area into the Whitewater River, part of the Colorado River basin.

Figure 3 shows the principal groundwater basins, sometimes referred to as storage units, in the area. The boundaries of these are as defined by the United States Geological Survey.

3.0 Water Supply Conditions

3.1 Precipitation

Annual precipitation in the Beaumont area since 1888 is shown on Figure 4. The long-term mean annual precipitation in Beaumont is about 18 inches. The figure shows that 2009 was one of the driest years on record in the Pass area (in fact, it was one of the driest on record for the entire state) with a total precipitation of approximately eight inches.

3.2 Wastewater

There are three public agencies that discharge treated sewage within the service area—the cities of Beaumont and Banning, and the Yucaipa Valley Water District. The cumulative discharges for these three sewage treatment entities since 1987 are shown on Figure 5. Unlike precipitation, which is variable up or down from year to year, wastewater discharges from the area have consistently increased over time, as the area has developed.

Thus, treated wastewater is an important asset to the region, because this could be turned into recycled water, a reliable source of non-potable water, in the future. In fact, all three public agencies are in various stages of implementing recycled and/or non-potable water systems for irrigation, golf courses, medians, etc.

As mentioned in Section 1.0—Background, salinity is a growing concern in California, and recycled water is high in dissolved solids (salinity). While recycled water is a benefit to the region, its use as a water supply will also require desalting at some point in the future. Desalting is costly and requires a brine disposal method. The Santa Ana Regional Water Quality Control Board regulates salinity in the area.

There is a fourth entity within the area that treats sewage—the Morongo Band of Mission Indians. Data from its treatment plant are not available, and hence have not been included.

3.3 State Water Project

The Agency began importing State Water Project water into the region in 2003. Table 4 summarizes deliveries of SWP water for the calendar years 2003 through 2009. The table shows an increase in SWP deliveries over the past four years. Deliveries of SWP water are a function of the Agency's allocation for the year (which in turn is based on hydrology and other factors) as well as the capacity of local conveyance and recharge infrastructure.

The allocation for 2010 was 50%, higher than the 2009 allocation of 40%. It is anticipated that deliveries will be higher in 2010 because of this. The 2008 allocation was 35%. In the last wet year, 2006, the allocation was 100%. Table 4 does not show

significantly higher deliveries that year because a large local recharge facility did not go online until September of that year, limiting the amount of water that could be recharged in local groundwater basins.

Table 4 indicates that State Water Project allocations have been relatively low for three consecutive years. These data, along with the precipitation data included in Figure 1, show that California has been in a drought for the past three years.

4.0 Groundwater Conditions

4.1 Groundwater Extractions (Production)

Table 1 summarizes groundwater production from the eleven basins in the Agency's service area. Table 2 summarizes production from each individual producer, whether public or private. Table 3 provides a detailed breakdown of extractions by each reporting producer (including some based in San Bernardino County) for each basin for the thirteen most recent years of available data. Surface diversions from the Whitewater River are not included this year after being included for the first time in 2007. The Agency is not convinced the data are reliable enough to continue reporting. The numbers for Edgar Canyon represent both groundwater withdrawals and surface water diversions.

Figure 6 illustrates the long-term trend in reported groundwater production in the region since 1947. Figure 7 summarizes the same data since 1995, when significant growth started. Both figures show a distinct increasing trend in groundwater withdrawals both over the long term and over the past 13 years, though there is variability within that trend. Figure 8 illustrates the percentage share for each basin's total extraction within the Agency's service area in 2009.

Table 1 indicates that overall production in the region decreased in 2009 by 9% from 2008, which in turn was 9% less than in 2007, which is the peak historical year for withdrawals from the region. This marks a nearly 17% reduction in groundwater withdrawals from the peak over the past two years.

The data indicate that withdrawals from the region's largest basin, the Beaumont Basin, are down even more over the same period. Withdrawals from the Beaumont Basin decreased from 19,331 AF in 2007 to 17,571 AF in 2008 and 14,948 AF in 2009, a reduction of approximately 23% over the two years. The peak year for withdrawals from the Beaumont Basin is 2003.

The reduction in withdrawals in 2008 and 2009 from the Beaumont Basin can be partly explained by the reduction in withdrawals by the Yucaipa Valley Water District, who dedicated a new surface water treatment plant in 2007. It has since greatly decreased its production from the basin, from over 2000 AF in 2006 to less than 500 AF in 2009. The City of Banning reduced its withdrawals from 3154 AF in 2008 to 1623 AF in 2009, a reduction of 1531 AF or nearly 50%. This was partially offset by higher production (by nearly 800 AF) in the Banning Basin. The largest producer in the basin, the Beaumont Cherry Valley Water District, reduced its withdrawals in 2009 from 10,617 AF to 9,643 AF, a reduction of 974 AF or 9%. This followed a 4% reduction from 2007 to 2008, for a total reduction of 13% over two years. This is likely due to continued decreases in construction water demands and lower residential use.

Other basins showing significant decreases in 2009 were the Banning Canyon Basin (from 3237 AF to 2771 AF, a 14% decrease) and the Cabazon Basin (from 1412 AF to 1258 AF, a reduction of 11%).

The exact reason or reasons for the overall reduction in water demands from 2007 to 2009 cannot be identified. However, some of the most likely reasons are identified above (conversion from groundwater to surface water in Calimesa, reduced demand for construction water, lower residential use). The lower residential use may be partially the result of water conservation and education programs by local water purveyors, including the Agency. This could also be due in part to the number of vacant homes in the area in 2009. Vacant homes (primarily due to foreclosures) use little or no water. Local weather patterns always play a role in water demand, since irrigation water is typically among the highest uses of potable water. Wetter springs or cooler summers can significantly decrease irrigation water use.

Table 2 summarizes extractions by owner. With the exception of the aforementioned appropriators (Beaumont Cherry Valley Water District and the Yucaipa Valley Water District), and the City of Banning (a reduction of approximately 6% in 2009), one owner reduced its extractions significantly in 2009. Robertson's Ready Mix reduced its extractions by nearly half, from 373 AF to 191 AF, but this is a small portion of the overall total. Almost certainly this reduction was due to economic conditions.

Figure 8 provides an overview of the importance of each local groundwater basin. It indicates that over half of the groundwater pumped in the area (51%) is from the Beaumont Basin, making this by far the most important basin from a water supply standpoint. In fact, withdrawals from the Beaumont Basin are more than five times the amount of the next most used basins, the Banning, Banning Canyon, and Edgar Canyon Basins (9% each). This figure shows that much of the local groundwater may be found in canyons, where snowmelt runs down and recharges the basins.

It should be noted that no withdrawals from the Morongo Band of Mission Indians are included in any table, due to the fact that the tribe is exempt from state reporting laws. Most of its extractions are from the Cabazon Basin and canyon basins tributary to the Cabazon Basin.

4.2 State of Overdraft

The Agency has been closely monitoring overdraft of the Beaumont Basin since at least 1988, when the Agency's first engineering investigation of the basin indicated that pumping significantly exceeded the basin's safe yield. Although other basins are at similar risk of overdraft, the state of the overdraft in the Beaumont Basin is far more apparent (in part because it has been studied more) and, due to the large population served by the basin, more critical to the region. Prior studies have pointed to an estimated long-term annual safe yield of about 5,000 to 6,100 acre-feet per year for the Beaumont Basin (Boyle Engineering, 1995; Boyle Engineering, 2002). This is smaller than the safe yield of 8,650 acre-feet defined in the Beaumont Basin Judgment, which represents the sum of overlie water rights.

Safe yield is defined as the average amount of natural water that recharges a basin per year. While some dry years will produce less natural recharge and wet years will produce more, the safe yield is a long-term average. All safe yields are estimates based on the best available data, frequently involving computer models.

Thus, current and future pumping from the Beaumont Basin, even if in accordance with the adjudication, could exceed the long-term safe yield of the basin as identified in Boyle. The Beaumont Basin adjudication includes a clause that enables a party to challenge the determinations pursuant to the judgment ("seek judicial relief") if that party demonstrates that it has been harmed by the consequences of the adjudication (if pumping activities of others "constitute an unreasonable interference with the complaining party's ability to extract groundwater").

The adjudication also requires the Beaumont Basin Watermaster to "redetermine" the safe yield of the Basin at least every ten years, beginning ten years after the date of entry of the Judgment. This would require the Watermaster to redetermine the safe yield no later than February 2014. If the redetermined safe yield were to be different from the 8,650 AFY identified in the Judgment, it would change the amount of overdraft on an annual basis.

Total production during calendar year 2009 within the Beaumont Basin, as reported, was 14,948 acre-feet. Therefore, the Beaumont Basin experienced an apparent overdraft of about 8,848 acre-feet, assuming a safe yield of 6,100 acre-feet.

Selecting 1997 as a base year (the year when significant increases in production began in the region), the cumulative overdraft in the Beaumont Basin since that time (assuming a safe yield of 6,100 acre-feet per year) is 114,346 AF, an average of approximately 8,800 acre-feet per year over the past 13 years. Figure 9 depicts this graphically.

Since safe yields are not known for any other basin within the Agency's service area at this time, no overdraft, if any, can be calculated. The Agency is working with the United States Geological Survey to learn more about the Cabazon Basin, the second largest basin within the service area. It is hoped that a safe yield for this basin will be able to be estimated within the next 2-3 years.

4.3 Groundwater Levels

Figure 10 shows a map of the Agency's water level network. There are approximately 123 wells currently in the system. Water levels are measured twice a year, typically in April and November.

Figures 11 through 16 show time-series groundwater elevations (hydrographs) for selected wells in the Agency service area. Figures 12, 13, and 14 show groundwater level changes at selected wells in the Beaumont Basin over various periods of time. Unlike in previous years, data this year indicate that the water level rose in three of the five wells. Likewise, in Figure 11, 1 of the 2 wells in the Baining Basin has a higher water level

than a year ago. It is too soon to know if these data represent anomalies, a short-term increase in water levels, or the beginning of a long-term trend. The data make some sense when considered in light of the overall reduction in withdrawals discussed earlier and the increased supplemental recharge in the area over the past three years. No change in trend is seen in data from the Cabazon, Calimesa, and Banning Canyon Basins. It appears that water levels in the Calimesa Basin have been relatively stable over the past several years (at least at the one well depicted in Figure 16).

The implications of lower water levels are great. As water levels decline throughout the local basins, every well will have to pump water from a lower elevation, thus increasing power costs for all well owners. Some overliers' wells may be quite shallow, and as water levels decrease further some of these wells may be in danger of going dry. This would necessitate a large expense to the overlier—either a new well, a deeper well, or connection to one of the water purveyors' systems.

In general, continually decreasing water levels can also lead to land subsidence and the drying up of traditional wetlands or streambeds. In the Pass region, most of these wet areas dried up many years ago. The Beaumont Basin Watermaster is charged with monitoring land elevations to determine if subsidence is taking place. As of this time, the Watermaster has not reported any appreciable land subsidence over the Beaumont Basin.

5.0 Water Quality

5.1 State Water Project

The Agency receives water from the State Water Project through the East Branch Extension. Water quality is a very important component of the Agency's supplemental water supply program.

Table 5 shows six of the most common constituents and their measured amounts from the SWP system at Devil Canyon over the past four years. Total Dissolved Solids, or TDS, is a key water quality component. It is a measure of water's salinity. Salinity is a major water quality issue within the Santa Ana watershed, and is particularly important in the Agency's western service area, particularly the Beaumont Basin. The Santa Ana Regional Water Quality Control Board regulates salinity throughout the Santa Ana watershed through its Basin Plan. Figure 17 lists the monthly total dissolved solids (TDS) for 2004 through 2008 and Figure 18 lists the annual average TDS for 1990 through 2008.

The Basin Plan has a Maximum Benefit goal of 330 mg/l of salinity for the Beaumont Management Zone, which includes the Beaumont Basin and Edgar Canyon. The ambient concentration of salinity currently in the Beaumont Management Zone is approximately 250 mg/l. State Water Project water has averaged approximately the same concentration over the past 20 years, with some years being lower and some higher. In only two years since 1990 has the salinity at Devil Canyon exceeded 300 mg/l (1991 and 1992, both very dry years).

Drier years tend to bring higher salinity levels, and wetter years bring lower salinity levels. Since more water is imported in wet years, the weighted average of salinity imported to the Beaumont Management Zone will tend to be less than the average at Devil Canyon over the long term.

The salinity of recycled water is much higher—currently over 400 mg/l. Thus, State Water Project water is highly beneficial to the area as a source of low-salinity water to counteract the large amounts of recycled water that will be used in the future.

5.2 Groundwater

The Agency, in cooperation with the USGS, is monitoring water quality in 38 wells in and around the Beaumont Storage Unit. Figure 19 shows the locations of the wells included in the Agency's Water Quality Well Network system. This network includes fewer wells than the primary water monitoring network. Table 6 provides a summary of general water quality parameters of groundwater from selected wells in the Agency area in 2003 through 2006, the most recent years available. Nitrates in drinking water are regulated by the US Environmental Protection Agency through Primary Drinking Water

standards under the Safe Drinking Water Act. In California, the Department of Public Health is charged with enforcing this for the US EPA. Nitrates in nature (surface water and groundwater basins) are regulated under the federal Clean Water Act. In California, this is enforced by the State Water Resources Control Board through its Regional Boards. The State Water Resources Control Board is under the California Environmental Protection Agency.

Nitrates in ambient groundwater do not necessarily translate to nitrates in potable water. If there are small areas of high nitrate concentration in the groundwater basin, these can be effectively dealt with either by blending that water with other, low nitrate water, by drilling a well in another area, or in a worst case scenario by installing a wellhead treatment system.

Nitrates in the area are believed to emanate primarily from fertilizers, animal feces, and septic systems. There are no other known water quality problems in local groundwater. Water quality data for the region is also available at the USGS website <http://waterdata.usgs.gov/ca/nwis/gwsi>.

Salinity is a secondary water quality standard, which means that it is not critical to human health. Salinity, or salts, can have long-term health effects on humans if levels are very high, but most of the damage done by high salinity concentrations is in hot water heaters, pipes, plumbing fixtures, and other metals that come in contact with the water for long periods of time.

6.0 Summary

Reported groundwater extractions within the Agency's service area decreased significantly for the second consecutive year. Extractions in 2009 were approximately 17% below levels for 2007, which is the peak historical year for extractions in the service area. This is likely due to a lack of growth, a new surface water filtration plant in Yucaipa, and cooler, wetter weather.

Local retail water purveyors continue to make slow progress in implementing recycled water systems. These systems are complex and expensive to complete, and funding and water quality (salinity) are key issues that require attention. Implementation of these systems over the next few years should reduce groundwater extractions significantly.

Another factor that should lead to reduced withdrawals is the ten year anniversary of the Beaumont Basin adjudication in February 2014. This will end the ten year "temporary surplus" in the basin and required appropriators to replace any water withdrawn that exceeds their share of the basin safe yield as identified in the adjudication.

Based on data in this report, there is some evidence that groundwater levels have increased slightly in portions of the service area over the past year. Future reports will determine the significance of these data.

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8.0 Glossary of Terms

AF	Acre foot
AFY	Acre foot per year
BCVWD	Beaumont Cherry Valley Water District
BHMWC	Banning Heights Mutual Water Company
CWD	Cabazon Water District
EBX	East Branch Extension of the SWP
GIS	Geographical Information System
GPCPD	Gallons per capita per day
GWMP	Groundwater Management Plan
HVWD	High Valleys Water District
LAFC	Local Agency Formation Commission
MET	Metropolitan Water District of Southern California
MSWD	Mission Springs Water District
RSA	Regional Statistical Area
RTP	Regional Transportation Plan
SCAG	Southern California Association of Governments
SGPWA	San Geronimo Pass Water Agency
SMWC	South Mesa Water Company
SPW	State Water Project Water
STWMA	San Timoteo Watershed Management Authority
SWC	State Water Contractors
SWP	State Water Project
SWRCB	State Water Resources Control Board
USGS	United States Geological Survey
WWTPs	Wastewater Treatment Plants
YVWD	Yucaipa Valley Water District

San Geronio Pass Water Agency
Totals by Basin
Non-Verified Production Data
(In acre feet)

Basin	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Banning	270	179	424	586	839	1,103	2,381	1,180	1,485	1,787	2,512	1,999	2,787
Banning Bench	3,109	2,182	1,743	730	753	807	952	1,319	2,332	2,987	2,199	1,299	1,415
Banning Canyon	4,739	5,048	5,216	4,955	5,600	3,024	2,582	3,329	3,649	3,464	2,662	3,237	2,771
Beaumont	7,848	7,343	10,548	13,937	14,474	19,149	19,624	17,756	13,670	17,444	19,331	17,571	14,948
Cabazon	636	837	1,063	594	1,182	1,749	1,208	1,604	1,379	1,314	1,466	1,412	1,258
Calimesa (2)	1,603	1,548	815	1,635	1,689	1,557	1,725	1,535	1,575	1,445	1,532	1,133	1,315
Edgar Canyon (1)	4,156	4,376	4,480	3,979	2,926	3,039	2,549	2,759	2,766	3,872	3,085	3,140	2,784
Millard Canyon	-	-	-	-	256	1,366	675	823	595	707	842	757	750
San Timoteo	1,332	1,182	1,304	1,450	1,234	1,465	1,392	1,469	2,132	1,904	1,384	1,533	1,367
Singleton	599	467	579	558	547	535	345	483	636	645	666	471	362
South Beaumont	77	68	78	77	77	92	95	92	85	83	94	79	97
Totals	24,369	23,230	26,250	28,501	29,577	33,886	33,528	32,349	30,304	35,652	35,773	32,631	29,874

Notes:

Amounts shown are rounded to nearest acre-foot

Amounts as reported to the SWRCB Division of Water Rights, made available by a purveyor, reported by Beaumont Basin Watermaster or estimated by SGPWA

Data revised to agree with basin boundaries as defined in USGS 2004 report

(1) Includes wells located in Upper Edgar Canyon in San Bernardino County

(2) Includes wells located in Riverside and San Bernardino County

Table 1: Groundwater Production in San Geronio Pass Water Agency by Basin (1997 through 2009 as reported)

San Geronio Pass Water Agency
Totals by Owner
Non-Verified Production Data
(in acre feet)

Owner	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Albor Properties II, LP			92	122	151	164	163	163	165	170	175	200	193
Arrowhead Mountain Spring Water Co.					256	1366	675	823	595	707	842	757	750
Banning Heights Mutual Water Co.	27	128	242	120	153	275	207	32	73	21	22	31	4
Banning, City of (1)	8,959	8,420	9,037	9,490	10,338	9,526	10,053	8,934	9,082	10,162	10,223	9,583	8,996
Beaumont-Cherry Valley Water District (1)	5,416	5,007	6,094	6,522	5,614	8,762	9,205	8,606	7,070	11,748	13,031	12,744	10,849
Beckman, Walt										116	83	13	
Brinton, Barbara	10	10	10	10	10	10	10	10	10		10	10	10
Cabazon County Water District	441	728	949	477	1,042	1,434	882	1,092	915	824	780	737	749
California Oak Valley Management	852	558	830	718	684	925	950	852	991	965	742	781	753
Desert Hills Premium Outlets					136	146	153	169	154	142	143	138	156
Dowling, Frances M. Jr.	77	68	78	77	77	92	95	92	85	83	94	79	72
East Valley Golf Club LLC			386	1,688	1,325	1,227	1,382	1,368	1,227	1,823	1,484	1,133	1,158
El Casco Lake Ranch	160	160	160	160	160	160	160	160	160	160	160	160	160
Hudson, Merton Lonnie	460	472	475	385	510	465	430	430	430	435	445	435	430
Illy, Katharina	267	267	267	267	267	267	267	267	267	267	265	265	265
Lane, Christie							7	7	1				
Los Rios Inc & The Wildlands Conservancy	579	717	383	359	250	242	226	194	343	343	470	435	386
Martin Properties, LLC	540	550	545	535	530	530	520	500	500	100	100	150	175
Mission Spring Water District					165	169	157	171	190	190	206	164	162
Oak Valley Partners	312	311	421	446	401	383	453	430	350	312	312	311	311
Perisits, Jack	46	46	46	40	40	40	40	40	40				
Plantation on the Lake (2)	263	237	264	289	286	280	300	310	320	351	345	354	354
Rancho Calimesa Mobile Home Ranch (2)	170	170	170	150	198	206	202	202	60	61	61	40	40
Shiloh's Hill LLC						107	11	121	160	146	150	61	172
Riverside Land Conservancy										5	5	5	5
Robertson's Ready Mix	195	109	114	117	4	4	4	186	139	158	337	373	191
Sharondale Mesa Owners Association	190	166	197	167	190	185	182	158	181	189	183	196	154
South Mesa Water Co.	2,429	2,141	1,660	2,609	2,583	2,745	2,645	2,679	2,551	2,711	2,839	2,681	2,514
Summit Cemetery District	35	55	55	55	65	65	65	65	65	65	65	65	90
Sun Cal Companies	204	145	132	97	82	47	49	89	839	555			
Sunny-Cal Egg & Poultry, Inc.	1,063	1,366	1,731	1,762	1,876	1,475	1,475	1,477	1,153	50	50	50	50
The Diocese of San Bernardino	90	97	105	114	114	140	140	140	70	70	70		
Wildlands Conservancy, The	205		386	381	433	460	317	462	283	301	9	21	40
Yucaipa Valley Water District	1,379	1,302	1,421	1,344	1,802	1,993	2,091	2,134	1,854	2,422	2,072	659	685
Totals	24,369	23,230	26,250	28,501	29,577	33,886	33,528	32,349	30,304	35,652	35,773	32,631	29,874

Notes:

Amounts shown are rounded to nearest acre-foot

Amounts as reported to the SWRCB Division of Water Rights, made available by a purveyor, reported by Beaumont Watermaster or estimated by SGPWA

Data revised to agree with basin boundaries as defined in USGS 2004 report

(1) Amount adjusted for production in 2006, 2007, 2008 & 2009 by BCVWD for City of Banning from co-owned wells

(2) 2009 Data not reported - Preceding year (2008) data used

Table 2: Groundwater Production in San Geronio Pass Water Agency by Purveyor (1997 through 2009 as reported)

San Geronio Pass Water Agency
Totals by Owner by Basin
Non-Verified Production Data
(In acre feet)

Owner	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
BANNING BASIN													
Banning, City of	270	179	424	586	839	1,103	2,381	1,180	1,485	1,787	2,512	1,999	2787
TOTALS FOR BANNING BASIN	270	179	424	586	839	1,103	2,381	1,180	1,485	1,787	2,512	1,999	2787
BANNING BENCH BASIN													
Banning, City of	3,064	2,117	1,678	665	678	732	877	1,244	2,257	2,922	2,124	1,224	1340
Brinton, Barbara	10	10	10	10	10	10	10	10	10	0	10	10	10
Summit Cemetery District	35	55	55	55	65	65	65	65	65	65	65	65	65
TOTALS FOR BANNING BENCH BASIN	3,109	2,182	1,743	730	753	807	952	1,319	2,332	2,987	2,199	1,299	1415
BANNING CANYON BASIN													
Banning Heights Mutual Water Co.	27	128	242	120	153	275	207	32	73	21	22	31	4
Banning, City of	4,712	4,920	4,974	4,835	5,447	2,749	2,368	3,290	3,575	3,443	2,640	3,206	2787
Lane, Christie	0	0	0	0	0	0	7	7	1	0	0	0	0
TOTALS FOR BANNING CANYON BASIN	4,739	5,048	5,216	4,955	5,600	3,024	2,582	3,329	3,649	3,464	2,662	3,237	2771
BEAUMONT BASIN													
Albor Properties III, LP	0	0	92	122	151	164	163	163	165	170	175	200	193
Banning, City of (1)	913	1204	1,861	3,404	3,374	4,942	4,427	3,220	1,765	2,010	2,947	3,154	1623
Beaumont-Cherry Valley Water District (1)	2,581	1,905	2,958	3,768	3,971	7,088	7,692	7,103	5,607	9,200	11,096	10,617	9643
Walt Beckman										116	83	13	0
California Oak Valley Management	852	558	830	718	684	925	950	852	991	965	742	781	753
East Valley Golf Club LLC	0	0	386	1,688	1,325	1,227	1,382	1,368	1,227	1,823	1,484	1,133	1158
Merlin Properties, LLC	540	550	545	535	530	530	520	500	500	100	100	150	175
Oak Valley Partners	312	311	421	446	401	383	453	430	350	312	312	311	311
Plantation on the Lake	263	237	264	289	286	280	300	310	320	351	345	354	354
Rancho Calimesa Mobile Home Ranch	170	170	170	150	198	206	202	202	60	61	61	40	40
Sharondale Mesa Owners Association	180	166	197	167	190	185	182	158	181	189	183	196	154
Sunny-Cal Egg & Poultry, Inc.	1,063	1,366	1,731	1,762	1,876	1,475	1,475	1,477	1,153	50	50	50	50
Diocese of San Bernardino, The	90	97	105	114	114	140	140	140	70	70	70	0	0
Yucaipa Valley Water District	874	779	888	774	1,374	1,804	1,738	1,833	1,281	2,027	1,683	572	494
TOTALS FOR BEAUMONT BASIN	7,848	7,343	10,548	13,937	14,474	19,149	19,624	17,756	13,670	17,444	19,331	17,571	14,948
CABAZON BASIN													
Cabazon Water District	441	728	949	477	1,042	1,434	882	1,092	915	824	780	737	749
Olsen Hills Premium Outlets	0	0	0	0	136	146	153	169	154	142	143	138	156
Mission Springs Water District	0	0	0	0	0	165	169	157	171	190	206	184	162
Robertson's Ready Mix	195	109	114	117	4	4	4	186	139	158	337	373	191
TOTALS FOR CABAZON BASIN	638	837	1,063	594	1,182	1,749	1,208	1,604	1,379	1,314	1,466	1,412	1,258

Table 3: Groundwater Production in San Geronio Pass Water Agency by Purveyor by Basin (1997 through 2009 as reported)

**San Geronio Pass Water Agency
Totals by Owner by Basin
Non-Verified Production Data
(in acre feet)**

Owner	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
CALIMESA BASIN													
Illy, Katharina	267	267	267	267	267	267	267	267	267	267	265	265	265
Pensils, Jack	46	46	46	40	40	40	40	40	40	0	0	0	0
South Mesa Water Co.	662	797	69	858	1,044	952	1,117	976	782	882	954	842	930
Yucaipa Valley Water District	428	438	433	470	338	298	301	252	486	296	313	26	120
TOTALS FOR CALIMESA BASIN	1,603	1,548	815	1,635	1,689	1,557	1,725	1,535	1,575	1,445	1,532	1,133	1,315
EDGAR CANYON BASIN													
Beaumont-Cherry Valley Water District	2,835	3,102	3,136	2,754	1,643	1,674	1,513	1,503	1,463	2,548	1,935	2,127	1,685
Hudson, Merton Lonnie	460	472	475	385	510	465	430	430	430	435	445	435	430
Los Rios Inc & The Wildlands Conservancy	579	717	383	359	250	242	226	194	343	343	470	435	386
Shiloh's Hill LLC	0	0	0	0	0	107	11	121	160	146	150	61	172
Wildlands Conservancy, The	205	0	386	381	433	460	317	462	283	301	9	21	40
Yucaipa Valley Water District	77	85	100	100	90	91	52	49	87	99	76	61	71
TOTALS FOR EDGAR CANYON BASIN	4,156	4,376	4,480	3,979	2,926	3,039	2,549	2,759	2,766	3,872	3,985	3,140	2,784
MILLARD CANYON BASIN													
Airhead Mountain Spring Water Co.	0	0	0	0	256	1,366	675	823	595	707	842	757	750
TOTALS FOR MILLARD CANYON BASIN	0	0	0	0	256	1,366	675	823	595	707	842	757	750
SAN TIMOTEO BASIN													
El Cusco Lake Ranch	160	160	160	160	160	160	160	160	160	160	160	160	160
Riverside Land Conservancy										5	5	5	5
South Mesa Water Co.	968	877	1,012	1,193	992	1,258	1,183	1,220	1,133	1,184	1,219	1,368	1,202
SunCal Companies	204	145	132	97	82	47	49	89	839	555	0	0	0
TOTALS FOR SAN TIMOTEO BASIN	1,332	1,182	1,304	1,450	1,234	1,465	1,392	1,469	2,132	1,904	1,384	1,533	1,367
SINGLETON BASIN													
South Mesa Water Co.	599	467	579	558	547	535	345	483	636	645	666	471	382
Yucaipa Valley Water District	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTALS FOR SINGLETON BASIN	599	467	579	558	547	535	345	483	636	645	666	471	382
SOUTH BEAUMONT BASIN													
Dowling, Frances M. Jr.	77	68	78	77	77	92	95	92	85	83	94	79	72
Summit Cemetery District													25
TOTALS FOR SOUTH BEAUMONT BASIN	77	68	78	77	77	92	95	92	85	83	94	79	97
TOTALS FOR ALL BASINS													
	24,369	23,230	26,250	28,501	29,577	33,886	33,528	32,349	30,304	35,652	35,773	32,631	29,874

Notes:

Amounts shown are rounded to nearest acre-foot

Amounts as reported to the SWRCB Division of Water Rights, made available by a purveyor, reported by Beaumont Basin Watermaster or estimated by SGPWA

Data revised to agree with basin boundaries as defined in USGS 2004 report

(1) Amount adjusted for production in 2006, 2007, 2008 & 2009 by BGVWD for City of Banning from co-owned wells

Table 3: Groundwater Production in San Geronio Pass Water Agency by Purveyor by Basin (1997 through 2009 as reported)

State Water Project Deliveries to
San Geronio Pass Water Agency Service Area

Calendar Year	Amount in Acre-Feet	Allocation
2003 (1)	116	
2004	814	
2005	687	
2006 (2)	4420	100%
2007 (2)	4815	60%
2008 (2)	4905	35%
2009 (2)	6609	40%

(1) Start Up / Partial Year

(2) Includes deliveries to Yucaipa Valley Water District

Deliveries to Beaumont Cherry Valley Water District began in September 2006

Source: San Bernardino Valley Municipal Water District Operations Manager

Table 4: State Water Project Deliveries to
San Geronio Pass Water Agency Service Area

Water Quality Analysis at Devil Canyon Afterbay

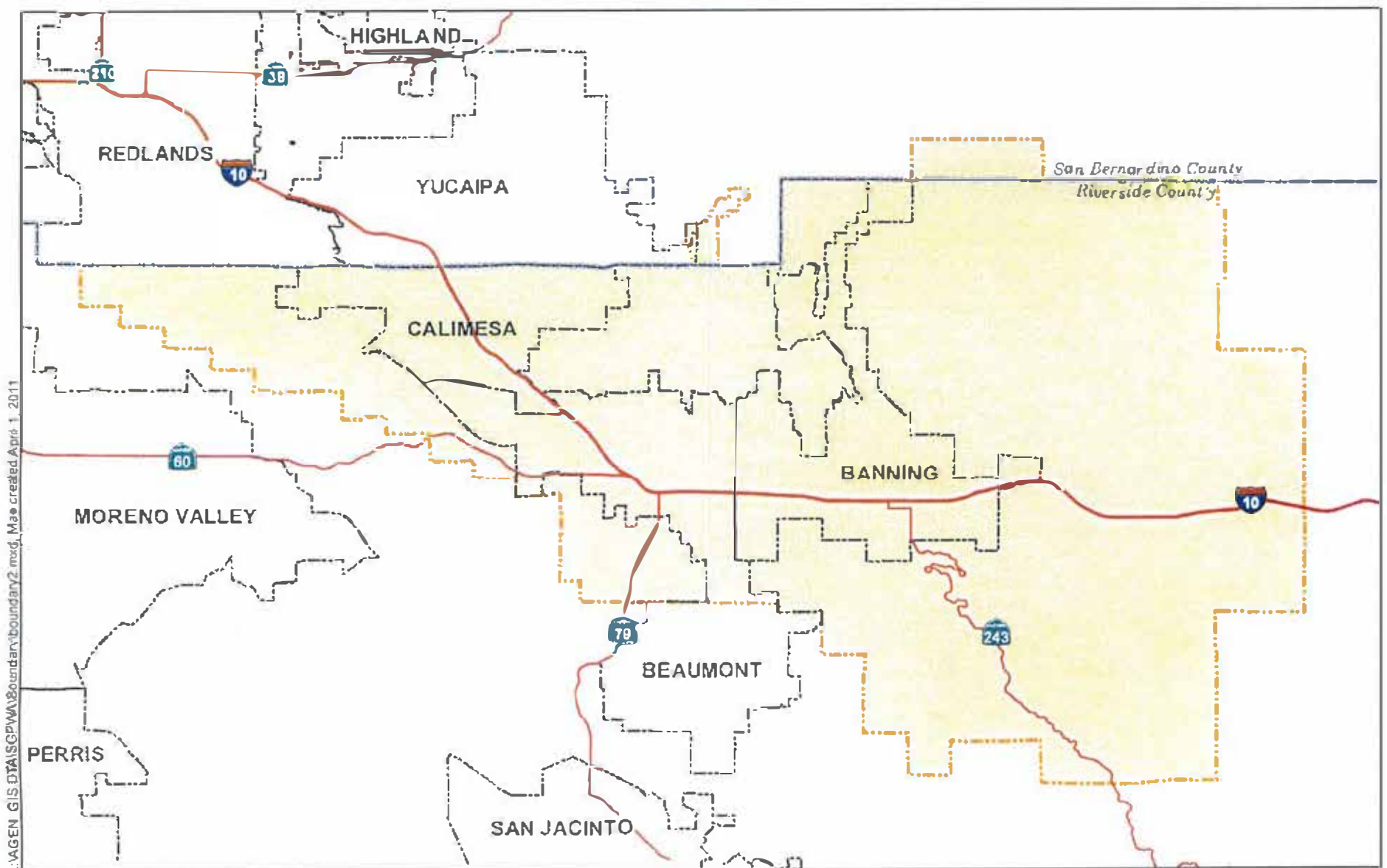
DATE	TDS mg/L	Chloride mg/L	Sodium mg/L	Sulfate mg/L	Nephelometric Turbidity Units	Nitrate+ Nitrite mg/L
Jan-06	299	97	63	36	4	0.87
Feb-06	219	54	39	35	2	0.78
Mar-06	NR	42	34	38	2	0.79
Apr-06	157	31	29	32	1	0.54
May-06	139	22	22	22	4	0.40
Jun-06	110	23	21	17	5	0.25
Jul-06	162	36	28	24	3	0.42
Aug-06	172	43	32	26	6	0.30
Sep-06	NR	42	32	24	11	0.33
Oct-06	169	36	28	20	1	0.43
Nov-06	171	32	27	20	2	0.58
Dec-06	208	53	40	31	13	0.78
Jan-07	268	75	54	35	1	0.86
Feb-07	309	95	65	41	6	0.94
Mar-07	NR	74	54	48	1	1.10
Apr-07	258	63	51	45	2	0.99
May-07	245	61	46	39	1	0.72
Jun-07	252	66	47	38	2	0.50
Jul-07	258	60	45	36	4	0.60
Aug-07	297	50	38	26	1	0.40
Sep-07	NR	80	53	26	3	0.36
Oct-07	292	97	69	31	16	0.53
Nov-07	283	87	62	36	3	0.80
Dec-07	276	80	58	39	11	0.95
Jan-08	272	73	58	41	2	1.06
Feb-08	271	74	58	43	1	1.20
Mar-08	N/R	73	57	46	3	1.23
Apr-08	285	70	56	50	1	1.20
May-08	282	76	58	50	1	0.78
Jun-08	279	79	58	46	1	0.82
Jul-08	294	81	58	44	<1	0.70
Aug-08	285	71	54	42	3	0.49
Sep-08	N/R	72	53	42	1	0.48
Oct-08	267	71	58	43	2	0.54
Nov-08	293	76	61	48	<1	0.59
Dec-08	308	76	61	48	1	1.00
Jan-09	276	76	61	47	<1	0.76
Feb-09	266	70	58	43	<1	0.79
Mar-09	270	72	55	44	1	0.65
Apr-09	282	73	63	47	1	0.52
May-09	299	76	64	52	2	0.61
Jun-09	295	77	62	54	1	0.43
Jul-09	325	89	67	52	4	0.35
Aug-09	225	58	42	30	5	0.33
Sep-09	235	78	56	26	1	0.15
Oct-09	287	93	63	33	1	0.37
Nov-09	274	83	62	37	1	0.56
Dec-09	245	69	52	35	4	0.76

mg/L: milligrams per liter

Source: SWP/DWR O & M, Table 32 DWR Monthly OPS Report

NR: Not Reported

Table 5: Water Quality Analysis at Devil Canyon Afterbay near San Bernardino
(Selected Constituents)



Sources: Riverside Co. LAFCO, Jan. 2010;
Riverside County GIS, 2008.

0 2 4 6
Miles



San Geronio Pass Water Agency
Service Area Boundary

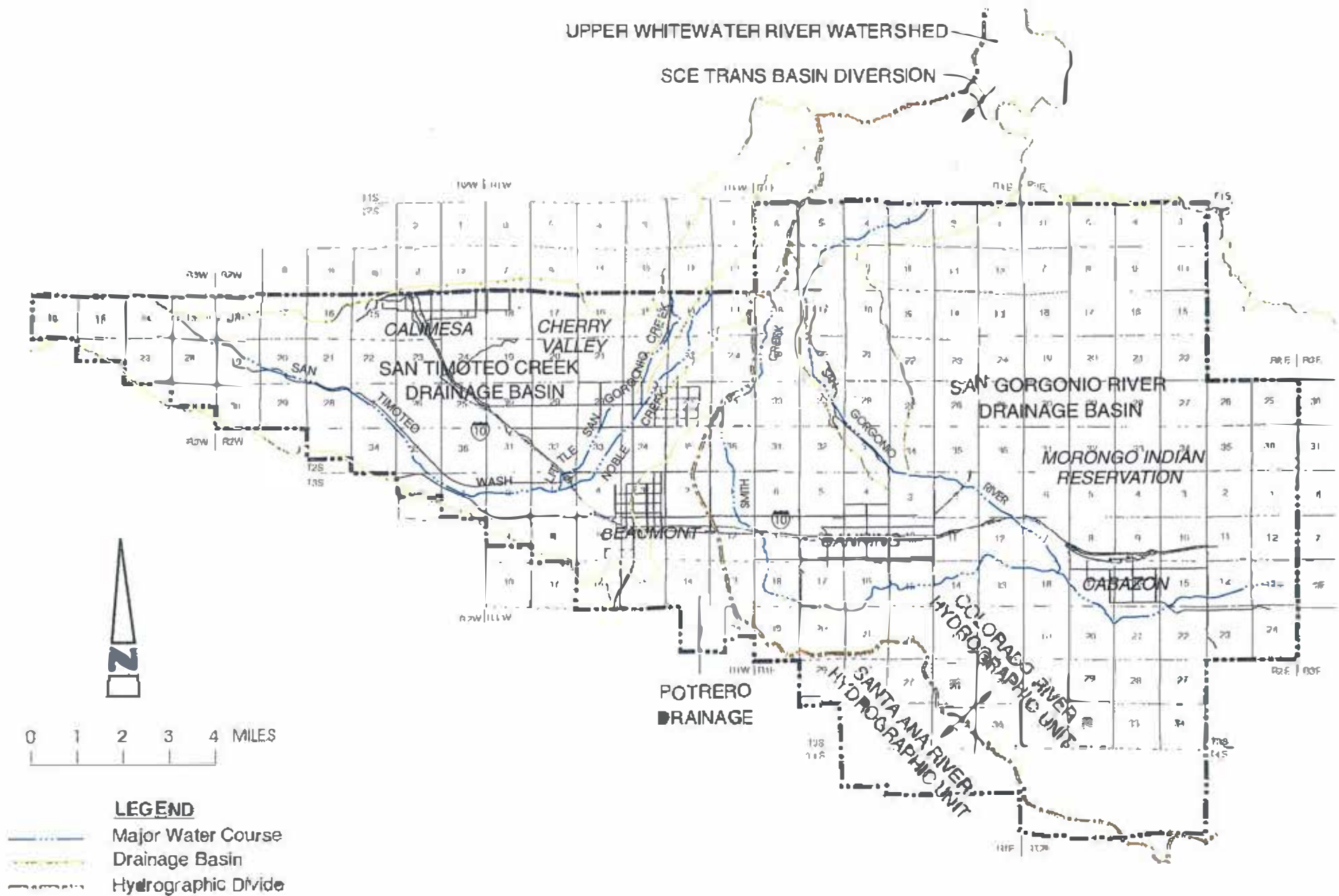
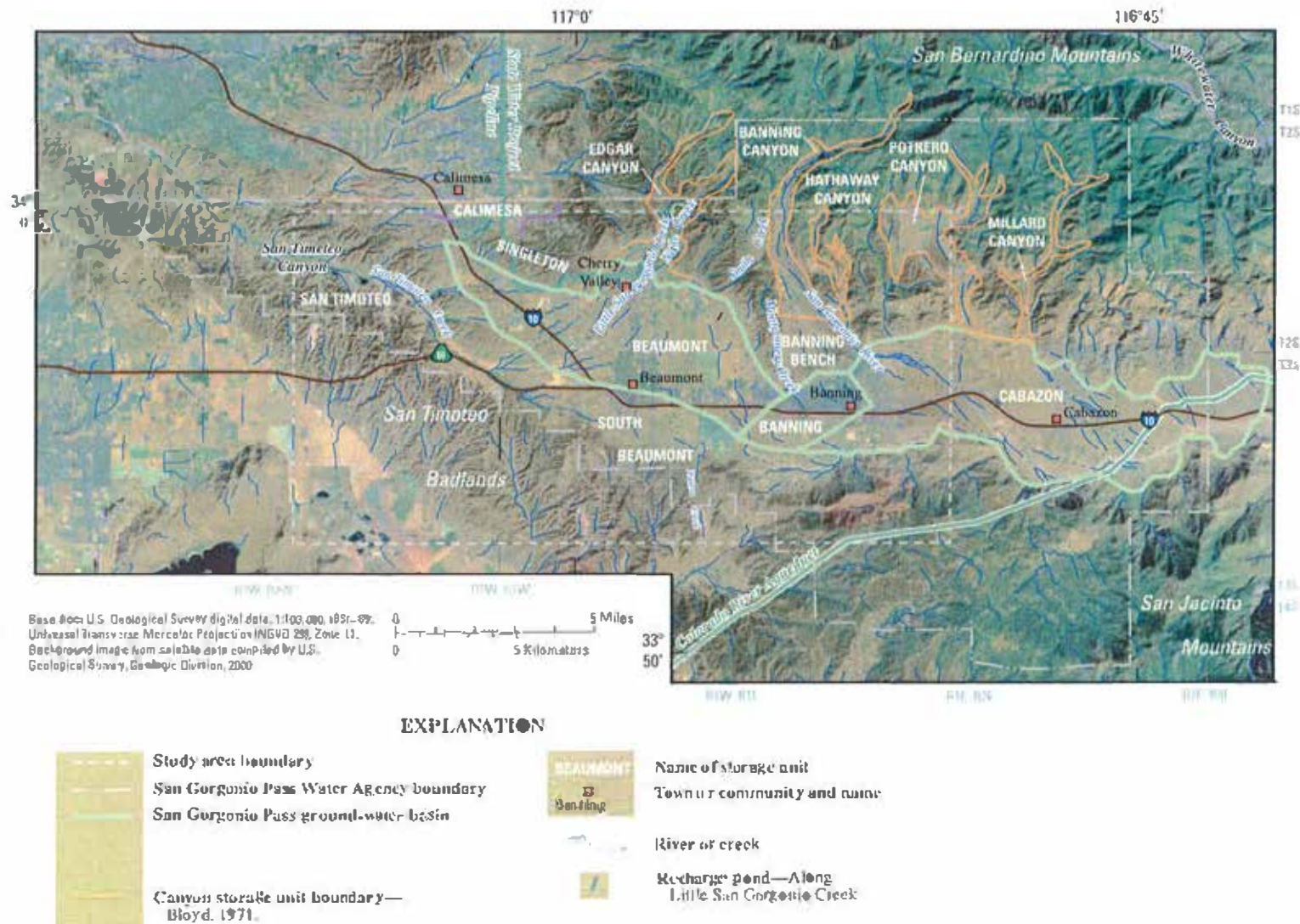


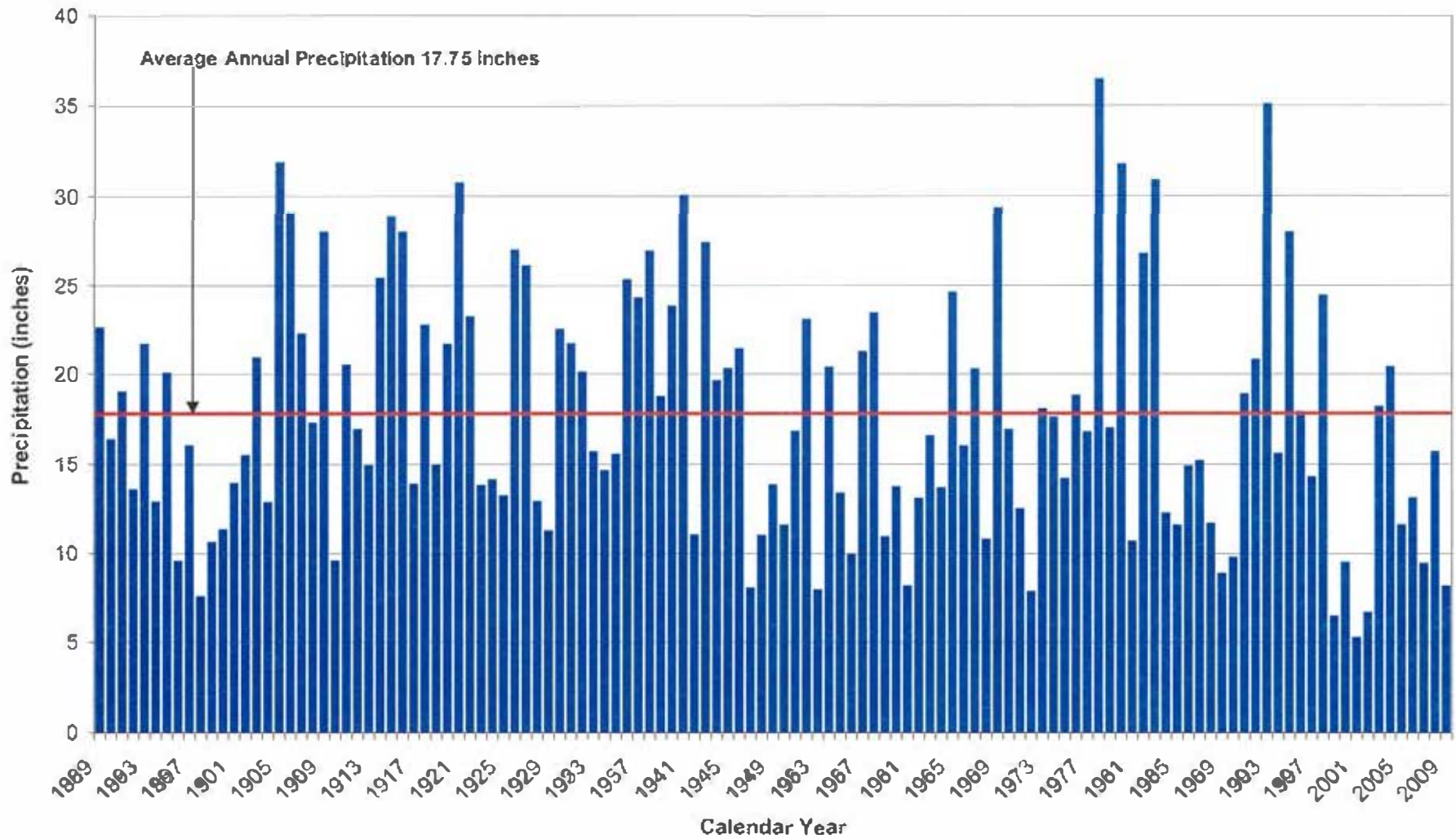
Figure 2: Drainage Basins and Principal Streams



Source: USGS Scientific Investigations Report 2006-5026

Figure 3: Groundwater Storage Units

Long Term Mean Annual Precipitation
Beaumont Station 3S/1W-10P, Elevation 2613'
Mean Annual Precipitation = 17.75"



Source: Riverside County Flood Control and Water Conservation District

Figure 4: Long Term Mean Annual Precipitation at Beaumont

Wastewater Discharge Totals by Discharger by Calendar Year

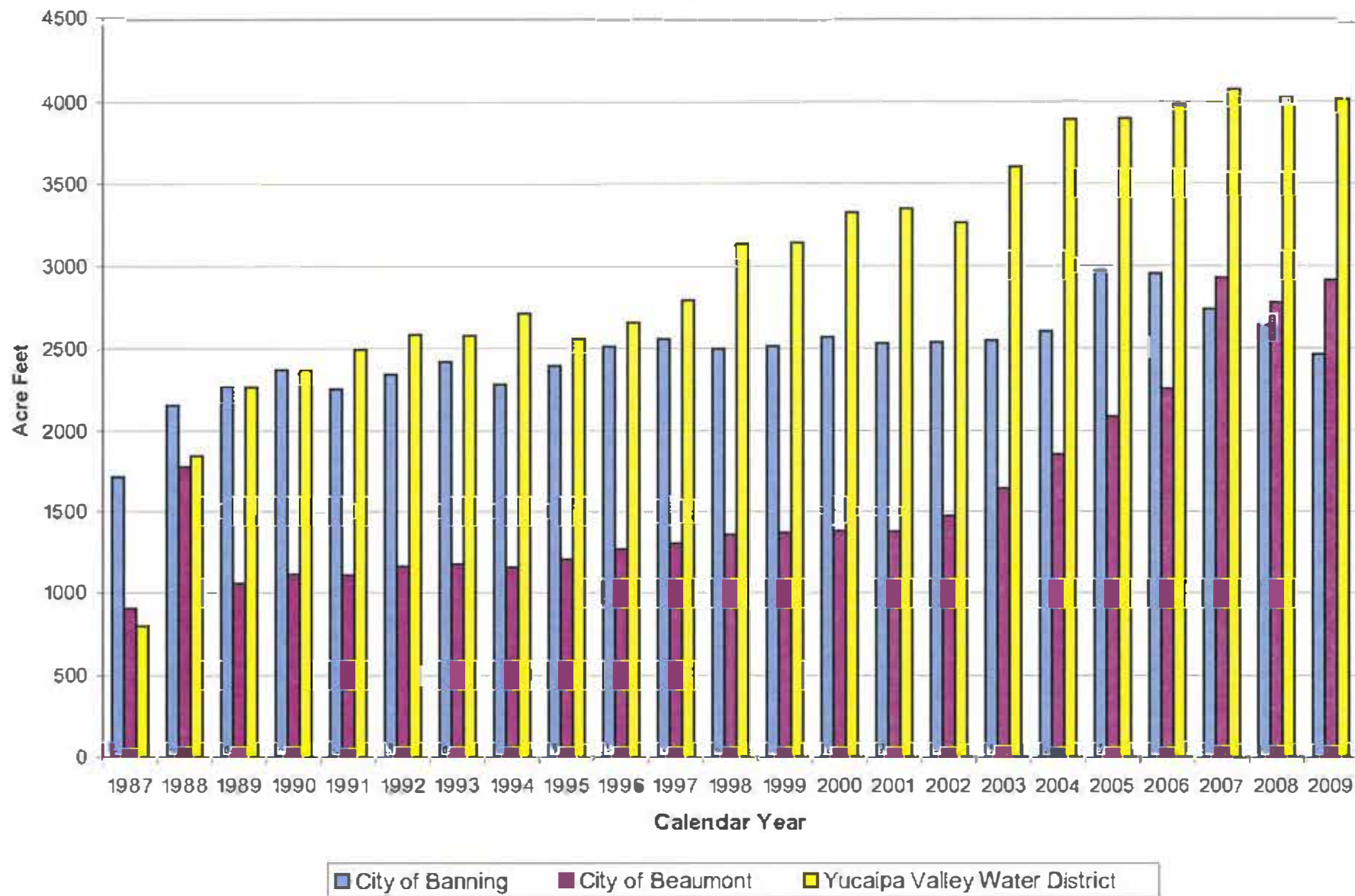


Figure 5: Wastewater Discharge Totals by Discharger by Calendar Year

**San Geronio Pass Water Agency
Production All Basins
1947 through 2009**

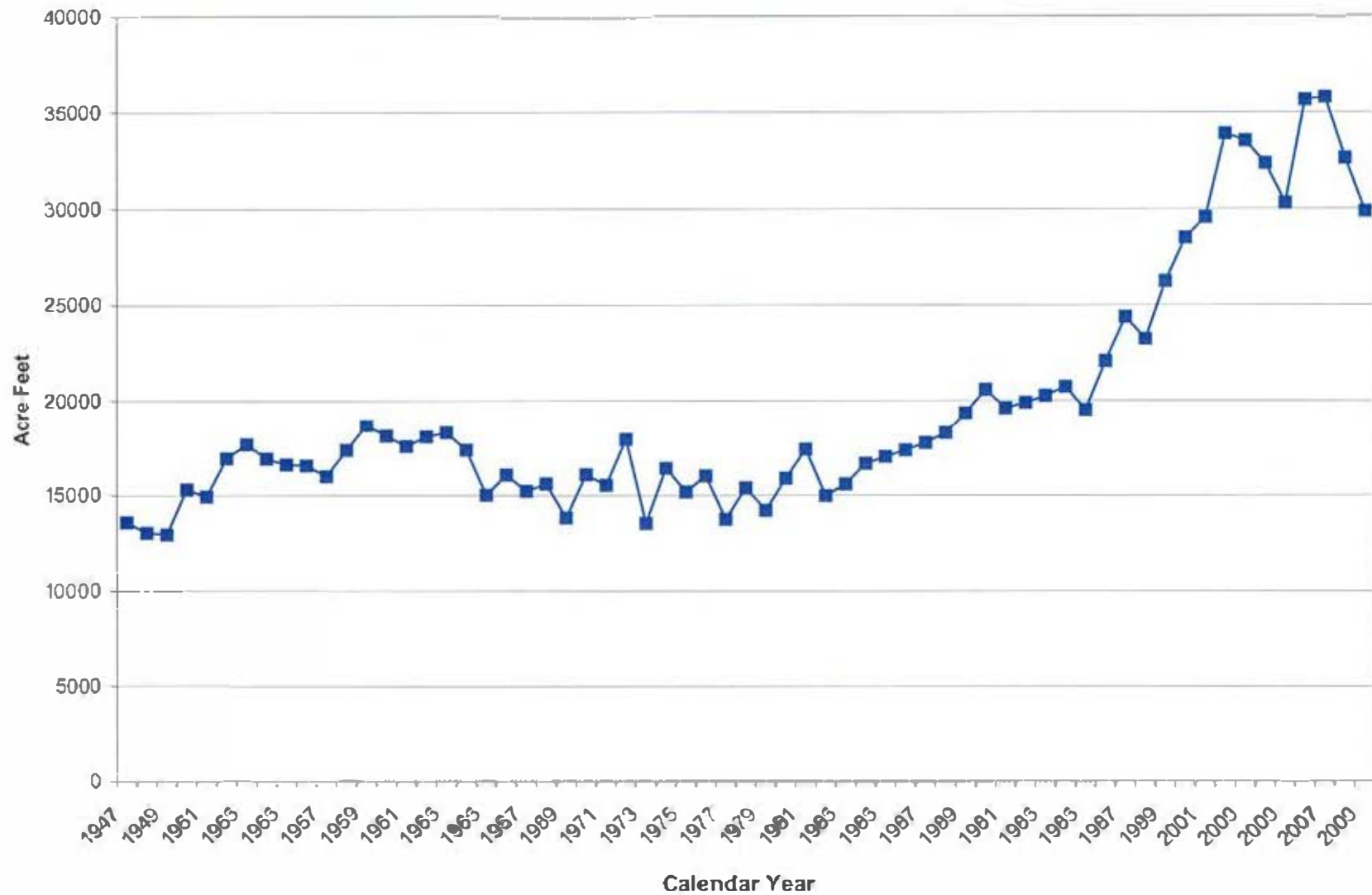


Figure 6: Historical Groundwater Production All Basins 1947 through 2009 (as reported)

**San Geronio Pass Water Agency
Production All Basins
1997 through 2009**

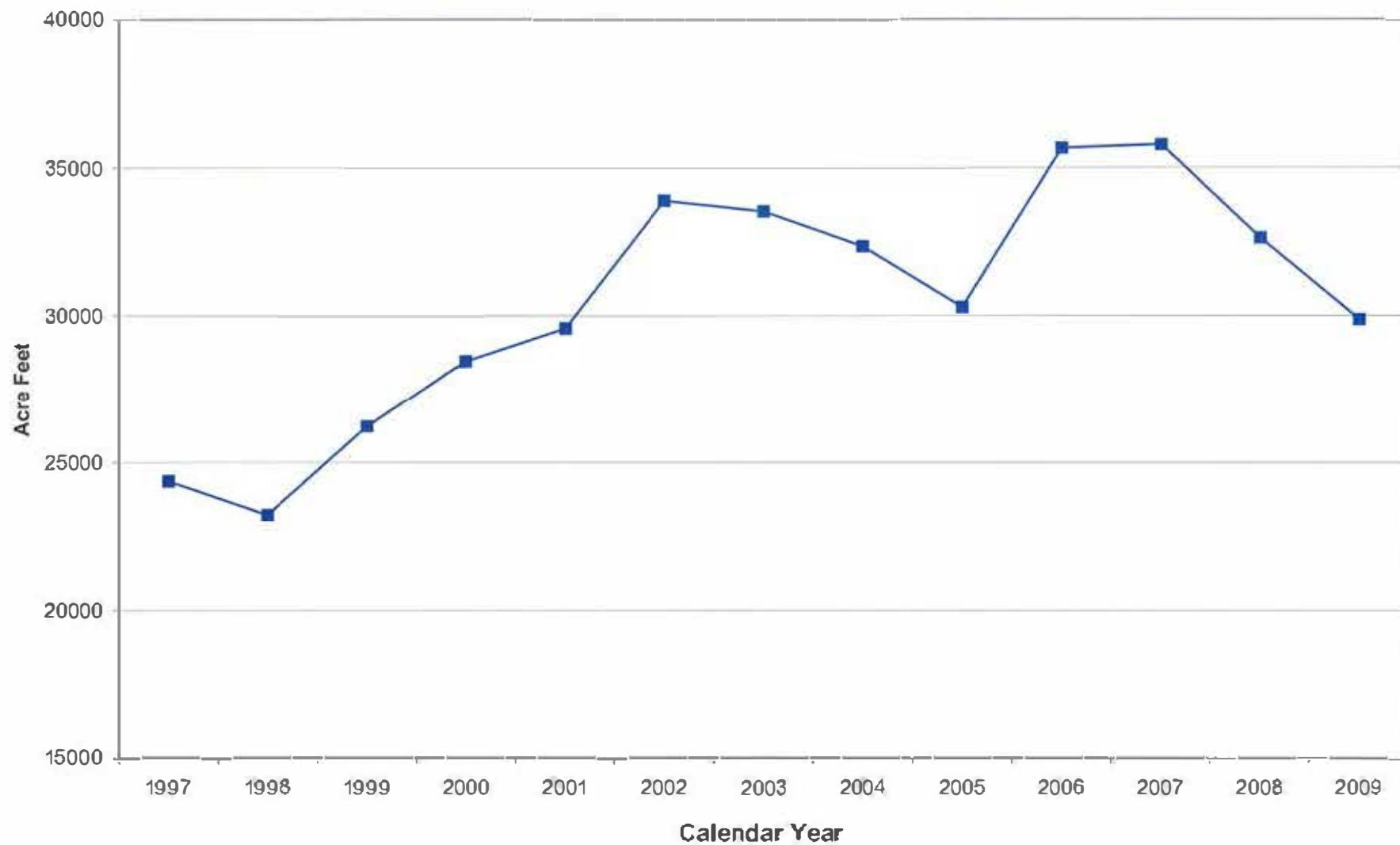


Figure 7: Historical Groundwater Production All Basins 1997 through 2009 (as reported)

Total Production By Storage Unit 2009

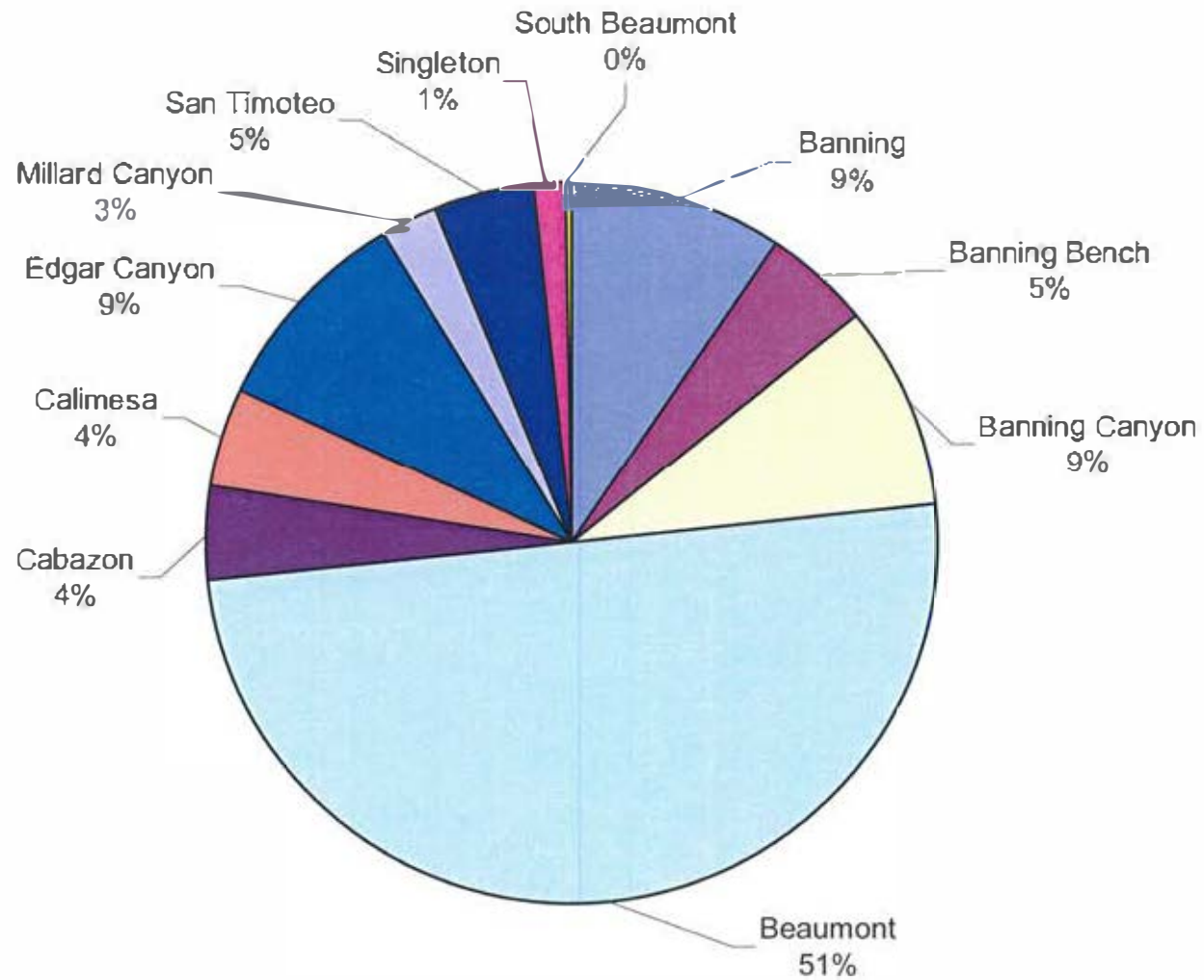


Figure 8: Total Agency Production by Storage Unit in 2009 (as reported)

**Accumulated Overdraft in the Beaumont Basin
1997 through 2009**

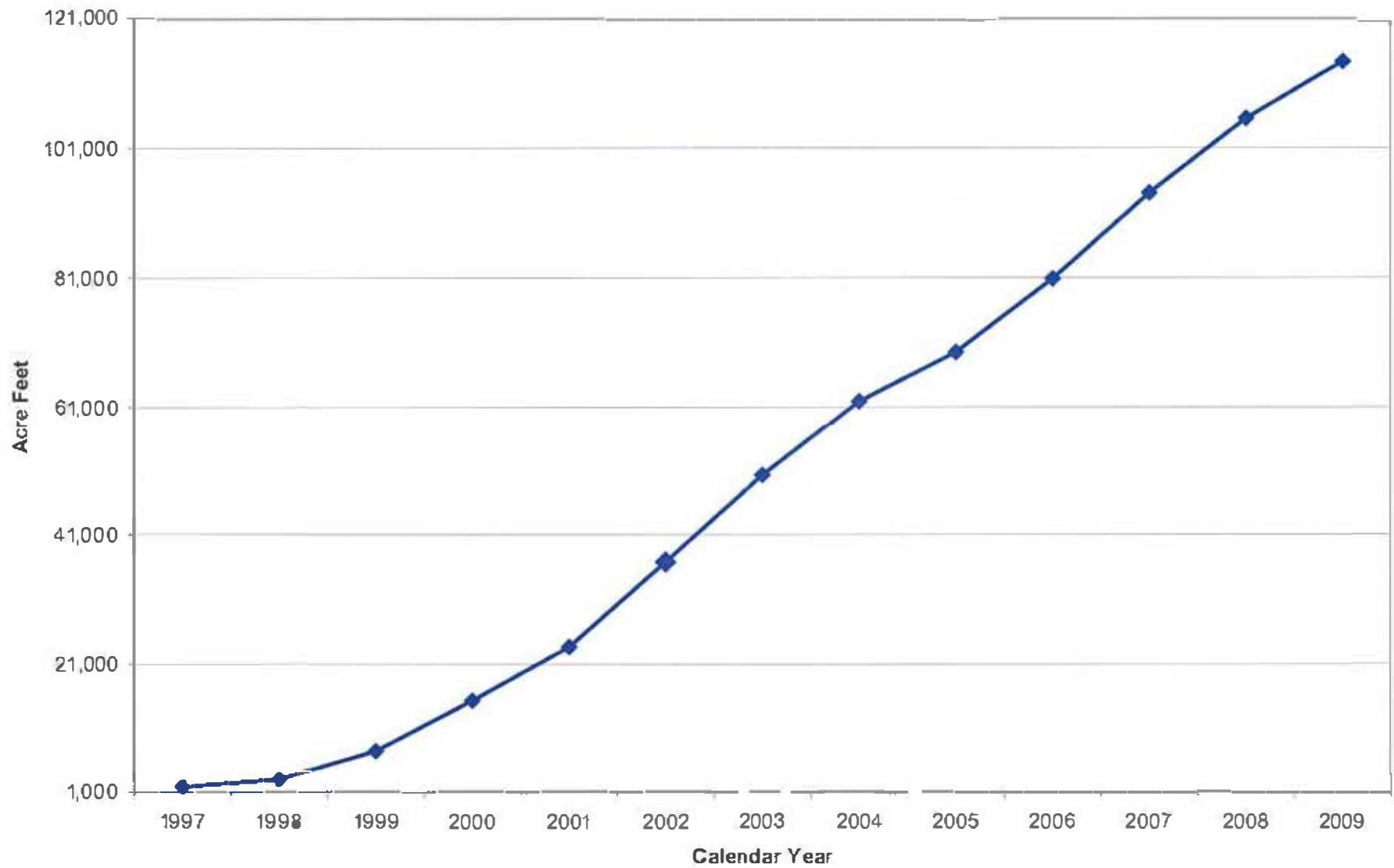


Figure 9: Accumulated Overdraft in the Beaumont Basin 1997 through 2009

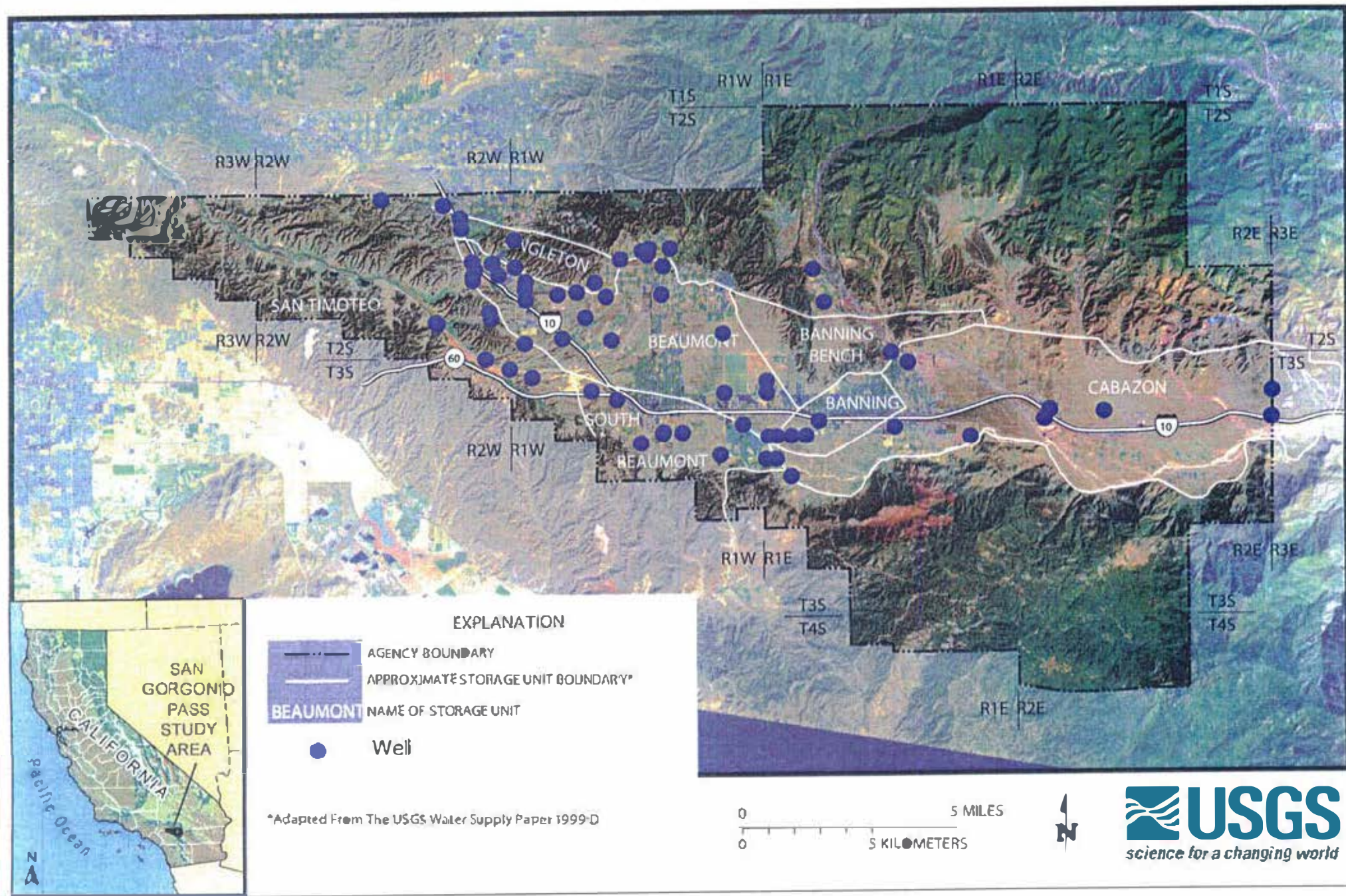
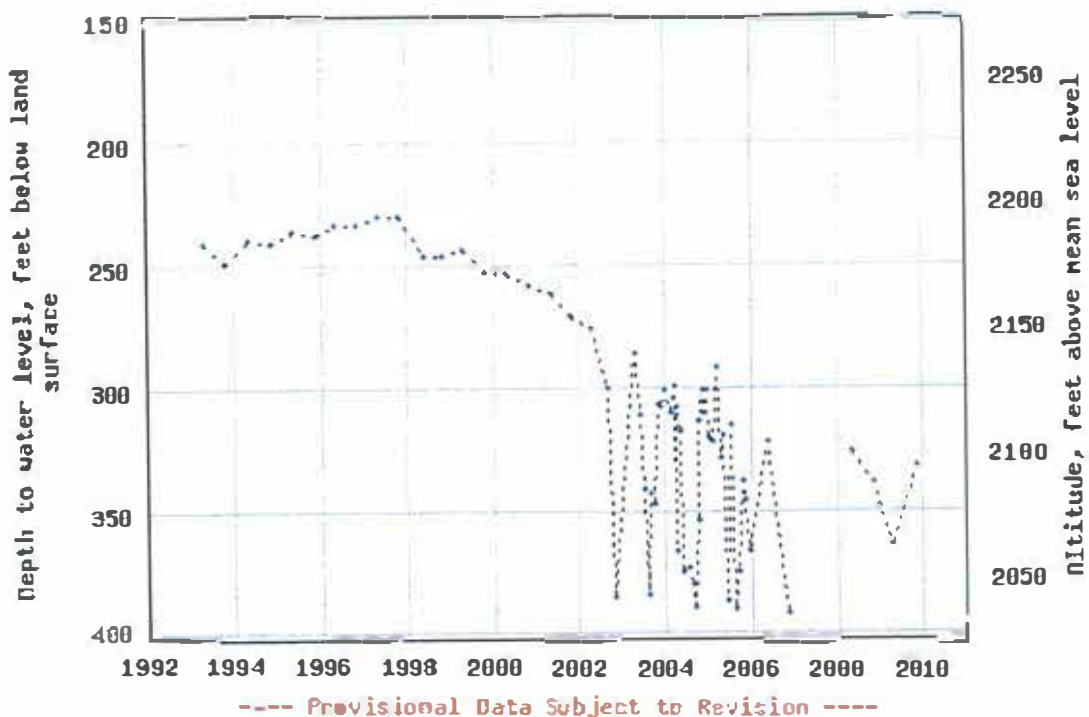


Figure 10: Water Level Network in the San Geronio Pass Area



USGS 335504116544201 003S001E18A001S



USGS 335504116552601 003S001E18C001S

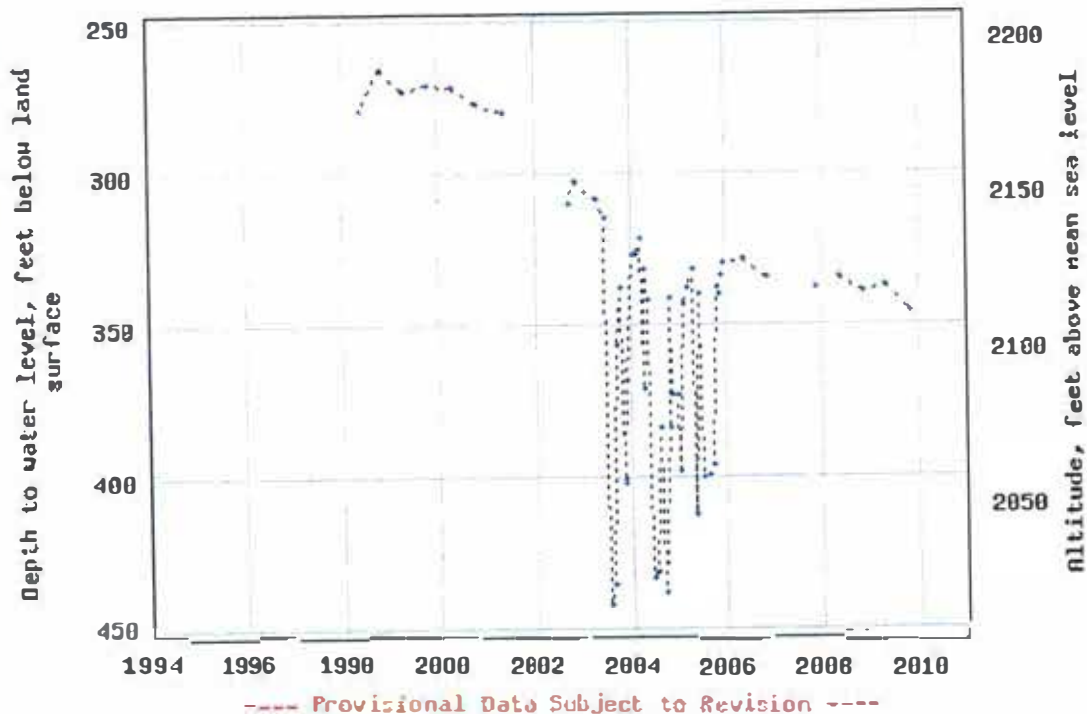
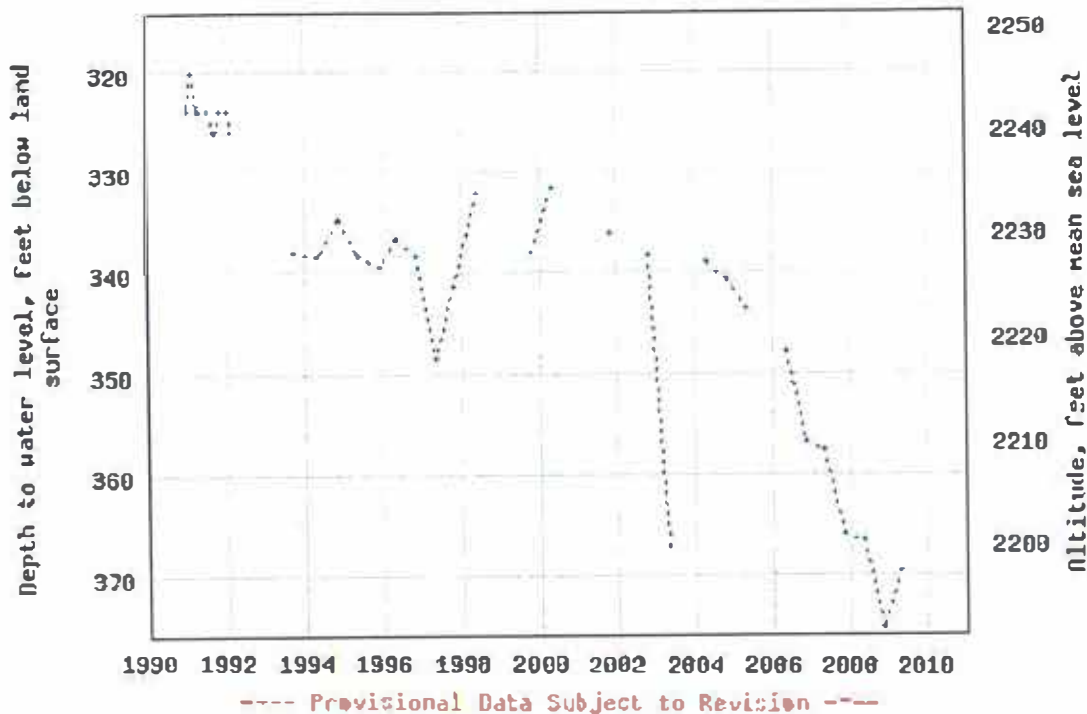


Figure 11: Groundwater Hydrographs – Banning Basin
3S/1E-18A01 and 3S/1E-18C01



USGS 335707116593401 002S001W33L001S



USGS 335807116582201 002S001W27L001S

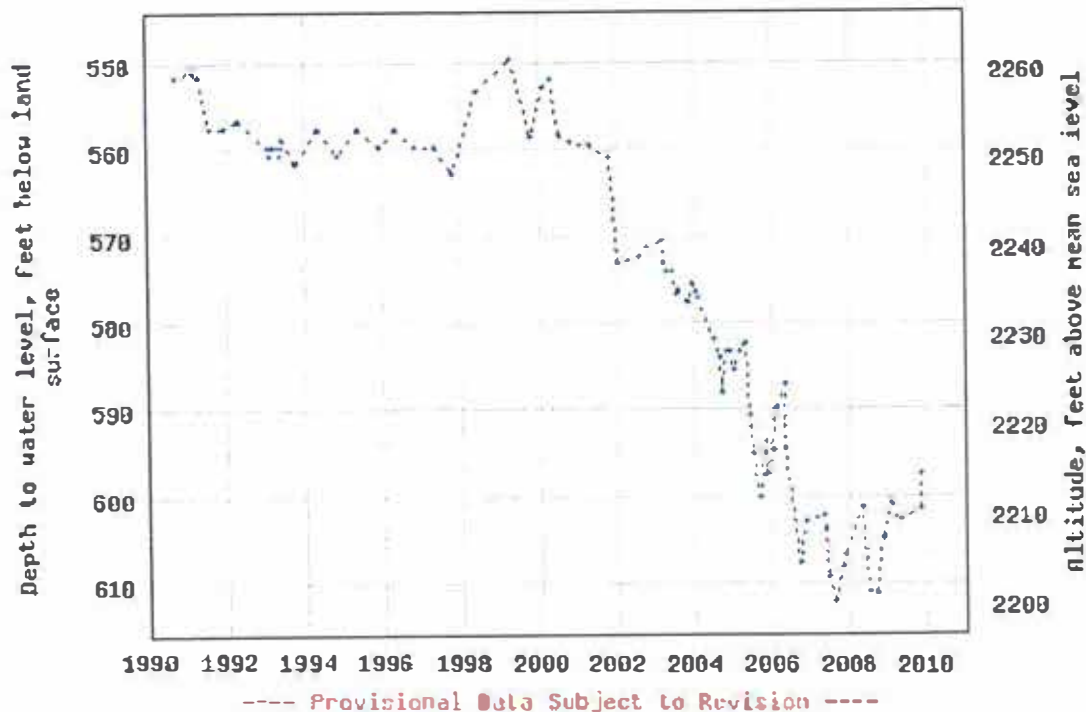


Figure 12: Groundwater Hydrographs – Beaumont Basin
2S/1W-33L01 and 2S/1W-27L01

USGS 335830117022201 002S002W25B001S

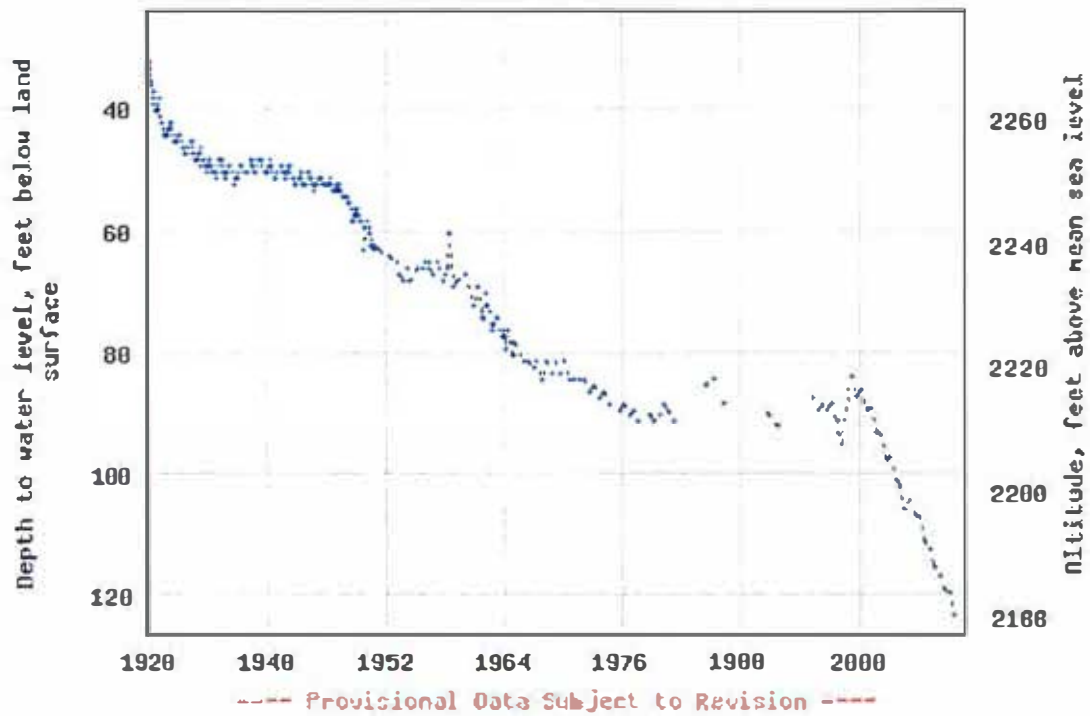
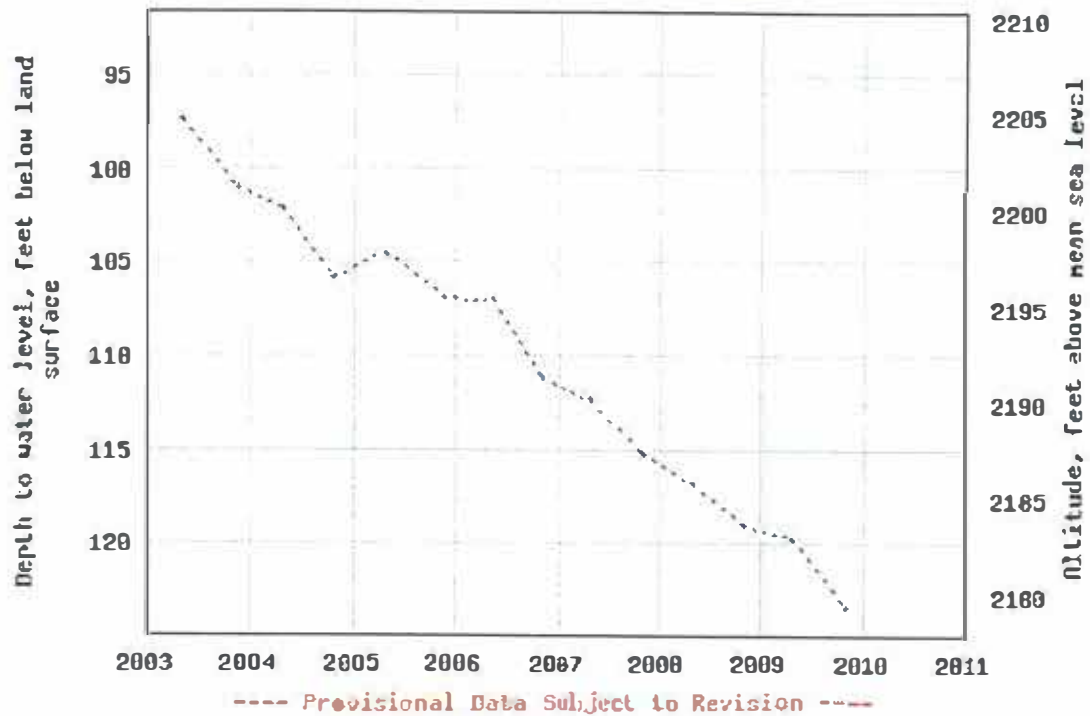


Figure 13: Groundwater Hydrograph – Beaumont Basin
2S/2W-25301



USGS 335830117022201 002S002W25B001S



USGS 335807116582201 002S001W27L001S

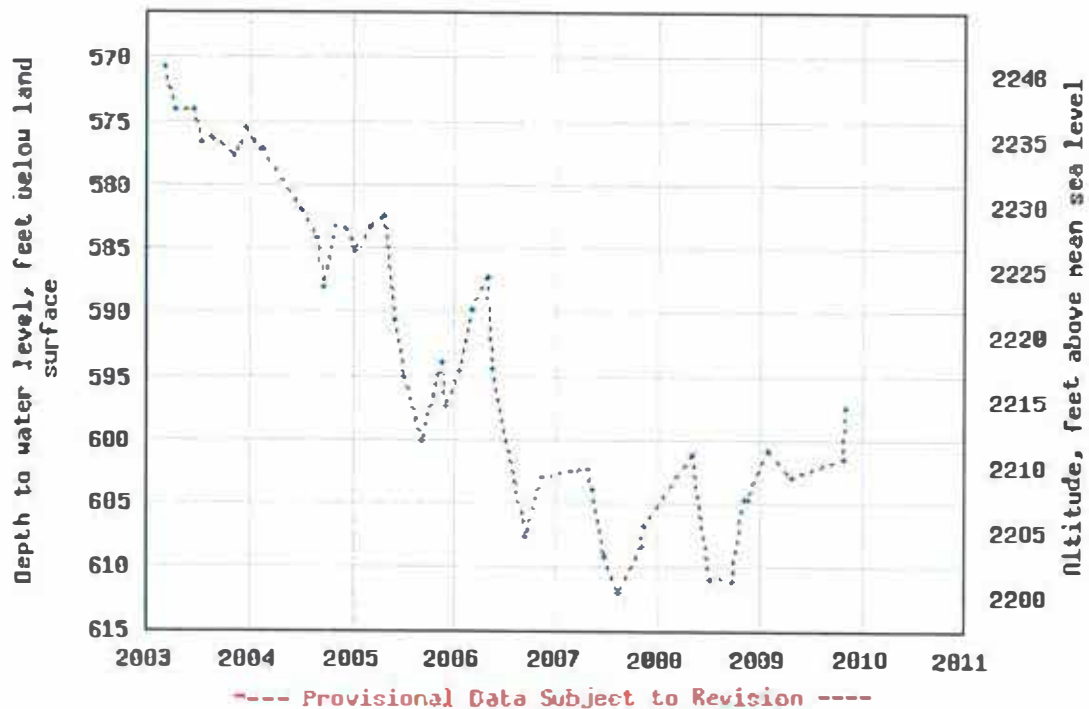
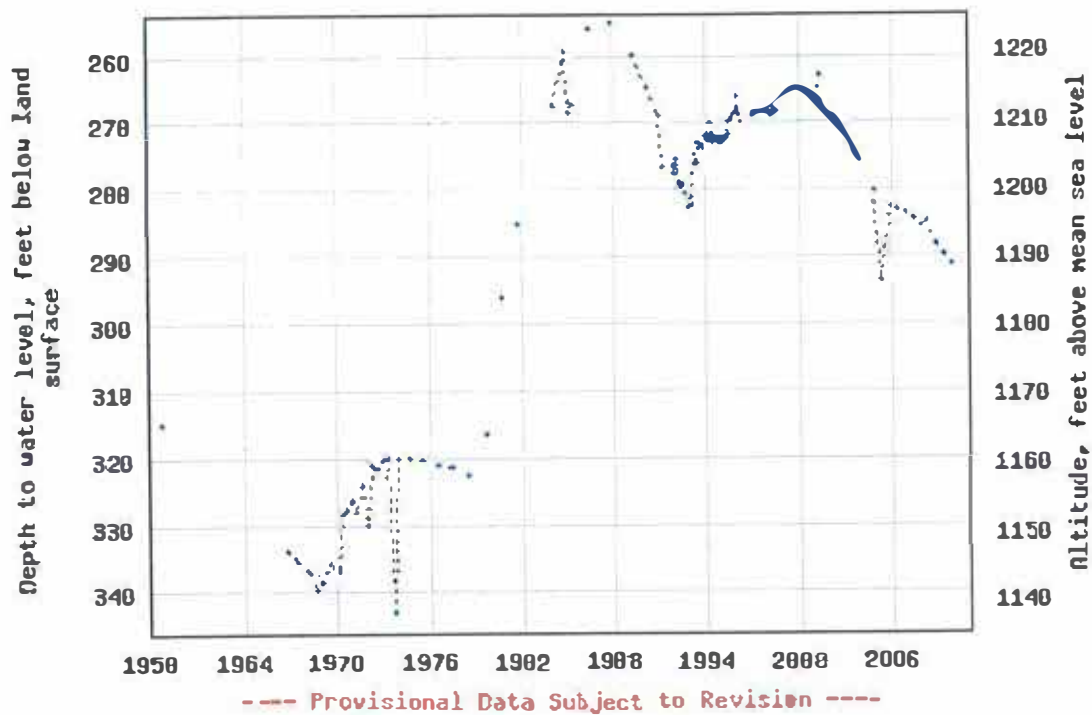


Figure 14: Groundwater Hydrographs – Beaumont Basin 2003 - 2009
2S/2W-25B01 and 2S/1W-27L01



USGS 335522116430701003S003E07M001S



USGS 335532116471701003S002E09E001S

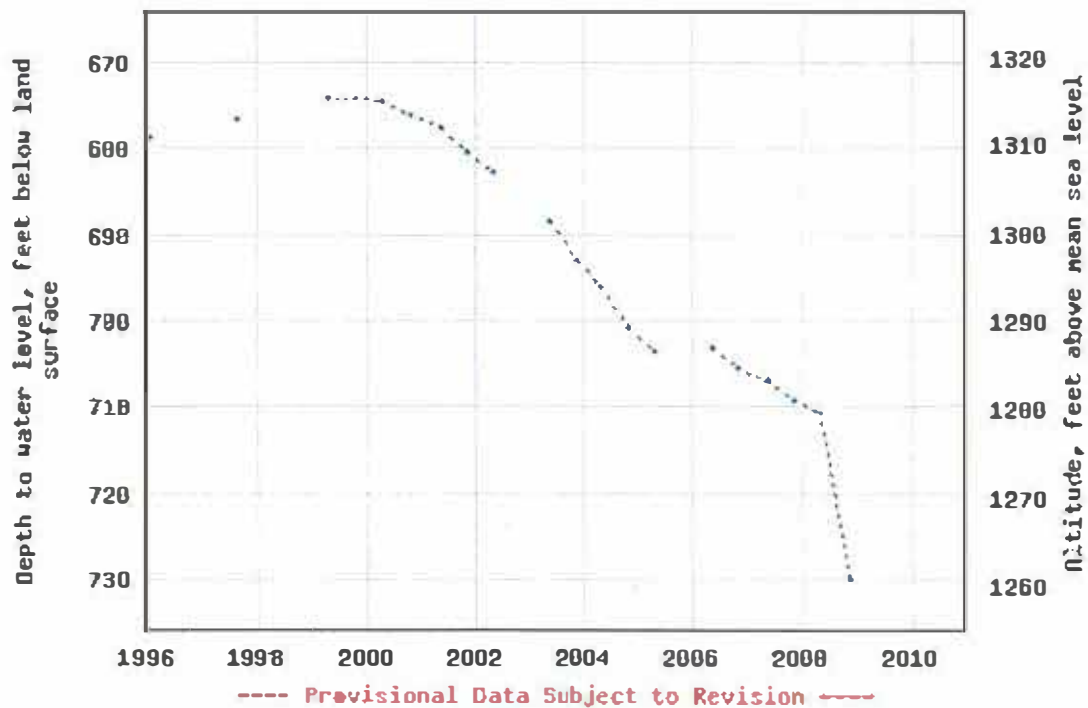
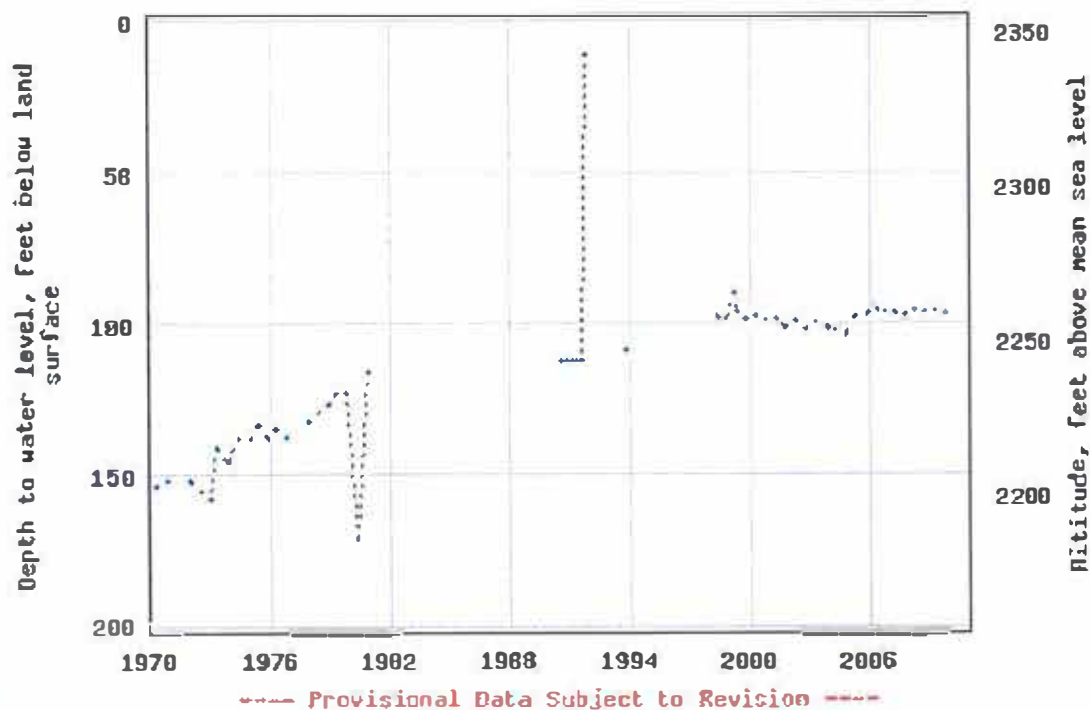


Figure 15: Groundwater Hydrographs – Cabazon Basin
3S/3E-07M01 and 3S/2E-09E01



USGS 335930117032101002S002W14R001S



USGS 335753116541801 002S001E29P001S

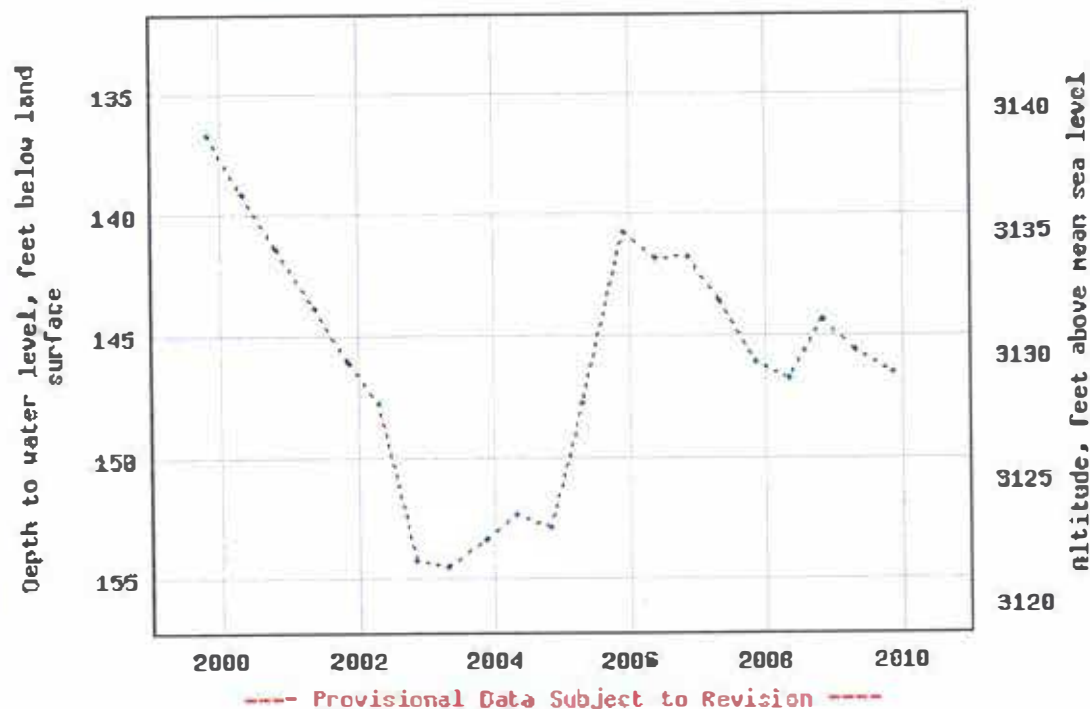
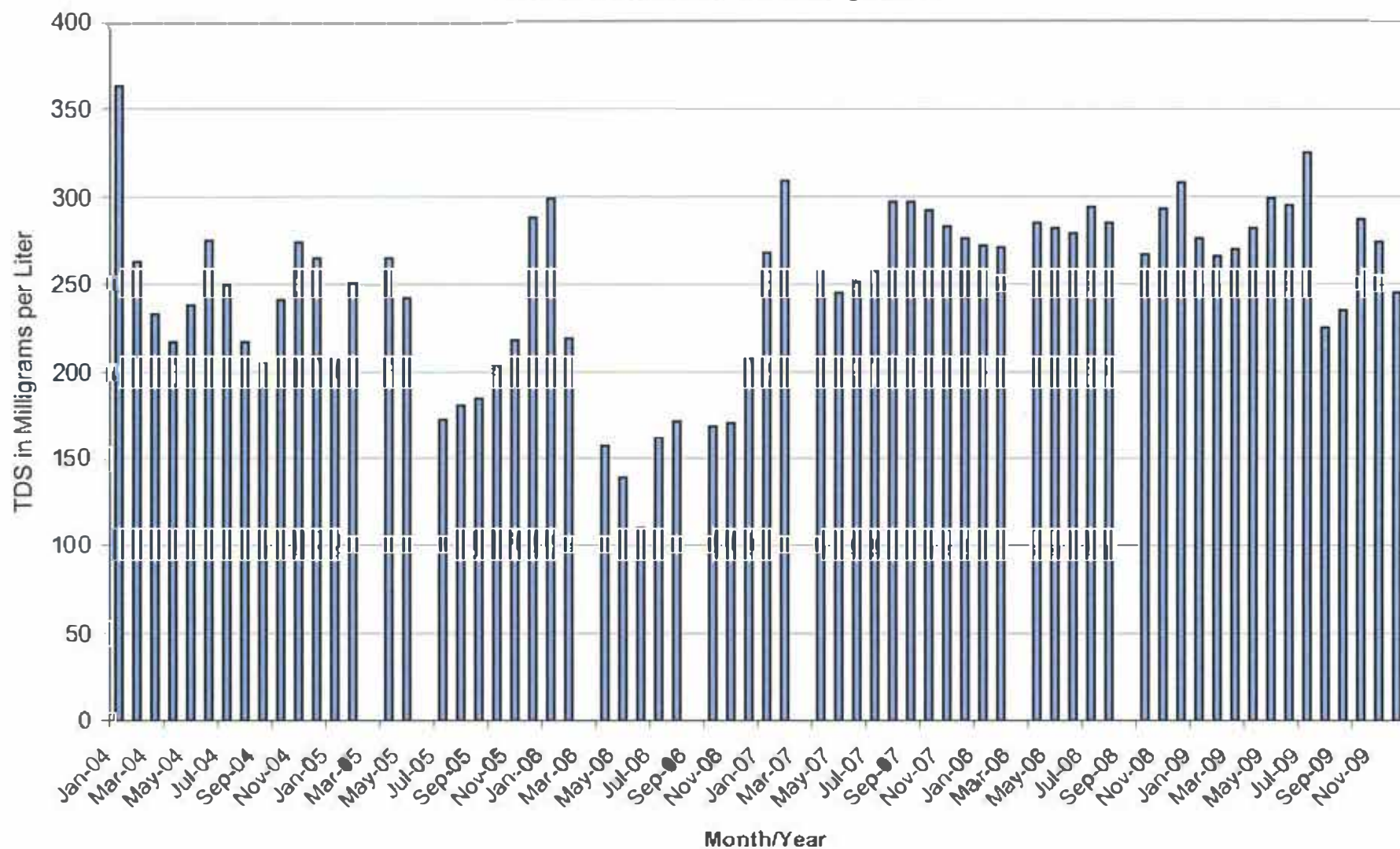


Figure 16: Groundwater Hydrographs – Calimesa and Banning Canyon Basins
2S/2W-14R01 and 2S/1E-29P01

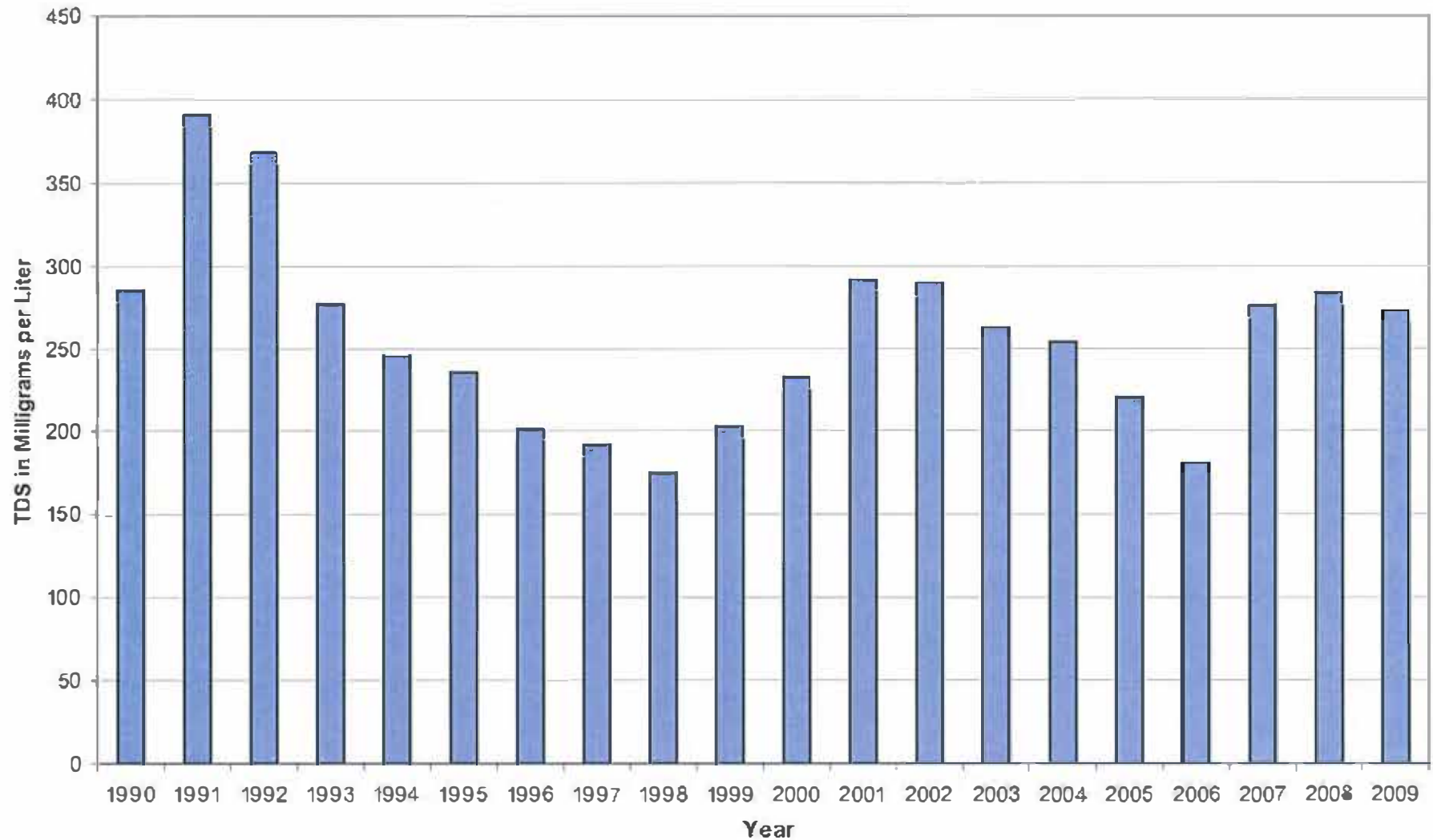
Monthly TDS at Devil Canyon Afterbay
Near San Bernardino 2004 through 2009



Source: Table 32. DWR Monthly Operations Report

Figure 17: Monthly TDS at Devil Canyon Afterbay near San Bernardino 2004 through 2009

**Average TDS at Devil Canyon Afterbay
Near San Bernardino 1990 - 2009**



Source: Table 32. DWR Monthly Operations Report

Figure 18: Average TDS at Devil Canyon Afterbay near San Bernardino 1990 through 2009

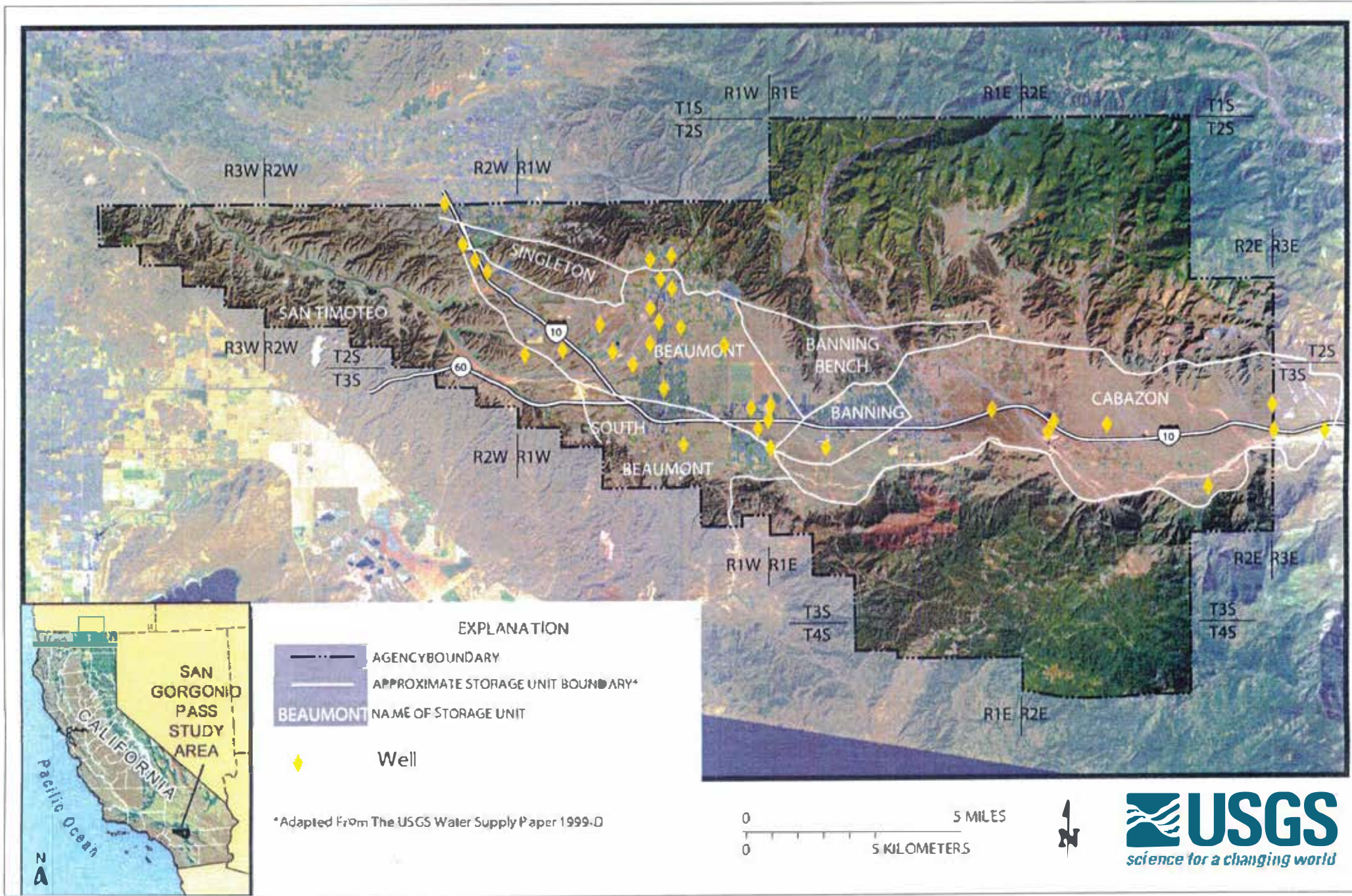


Figure 19: Water Quality Well Network in the San Geronio Pass Area



San Geronio Pass Water Agency
1210 Beaumont Avenue
Beaumont, California 92223
(951) 845-2577