SAN GORGONIO PASS WATER AGENCY

REPORT ON WATER CONDITIONS



Reporting Period 2008

San Gorgonio Pass Water Agency

Annual Report on Water Conditions

Reporting Period 2008

Prepared by

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

December 2009

SAN GORGONIO PASS WATER AGENCY

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Ted Haring	Vice President
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On the cover:

The approximate boundaries of the Beaumont Groundwater Basin are superimposed on an aerial photograph of the region. The City of Beaumont is located in the lower center of the photo. Cherry Valley is in the upper center of the photo. The City of Banning is in the lower right corner. Interstate 10 runs from the northwest corner to the southeast corner.

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San Gorgonio Pass Water Agency

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To the Reader:

President: John Jeter

Vice President: Ted Haring

Treasurer: Dave Dysart

Directors: Bill Dickson Ray Morris Barbara Voigt Carl Workman

General Manager & Chief Engineer: Jef Davis, PE

Legal Counsel: McCormick, Kidman & Behrens The San Gorgonio Pass Water Agency publishes this report on an annual basis. While in recent years it has been published biennially, with complete data for the preceding two years, we are publishing this year's version for the calendar year 2008 alone. Unlike previous editions, this is an abridged version that contains the same data, but with less accompanying text. The text that has been omitted in an effort to publish the report in a more timely fashion is not required by the settlement mentioned helow.

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

The Agency has produced a similar report, under different names, since at least 1990. The scope and title have changed over the years, but the primary goal is still to publish our database on local water resources (updated annually) so that it can be used by us or others to make decisions regarding water use and replenishment.

This Annual Report complies with the Stipulation for Entry of Judgment, <u>Cherry Valley Environmental Planning Group vs. San Gorgonio Pass Water</u> <u>Agency</u>, Case No. 249947 (Riv. Sup. Ct. 1996). That judgment requires the Agency to produce such an annual report (the Agency had been publishing one for several years already). 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 within [the Agency's] boundaries from such drilling logs, recordation files, or other sources as may be available to [the Agency]. [The Agency] shall indicate in each annual report those wells where no extraction data is available." This report is available on the Agency's website, <u>www.sgpwa.com</u>, under the Reports page, or available from the Agency's office in hard copy for a nominal copying charge. It is also available in CD form, also for a nominal charge.

In reading or perusing this report, we hope that you learn more about our region's most precious natural resource—water.

Wirns

Jeff Davis General Manager and Chief Engineer

1. Background

In preparing this Annual Report for calendar year 2008, the Agency utilized the most reliable data available. The Annual Report's analysis of water supply, groundwater conditions, and water utilization within the San Gorgonio 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) stunmaries 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, including recently revised basin boundaries.

The extraction data listed in this report were obtained from the State Water Resources Control Board, Division of Water Rights; local sources; the Beaumont Basin Watermaster; 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 are not filing 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 meterod, most wells do not include meters. Most of the 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/Sau Joaquin Delta.

2.0 Description of Area

The San Gorgonio Pass Water Agency covers approximately 225 square miles in northwestern Riverside County, including three square miles in Sau Bernardino County (see Figure 1).

The area 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.

3.2 Wastewater

There are three agencies that discharge treated sewage within the service area—the cities of Beaumont and Bauning, and the Yucaipa Valley Water District. The cumulative discharges for these three sewage treatment entities since 1987 are shown on Figure 5.

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

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 2008. The table shows a gradual increase over the past three years. Deliveries of SWP water arc 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 2009 was 40%, just slightly higher than the 2008 allocation of 35%. It is anticipated that deliveries will be slightly higher in 2009 because of this. The 2007 allocation was 60%. 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 into local groundwater basins.

4.0 Groundwater Conditions

4.1 Groundwater Extractions

Table 3 provides a detailed breakdown of extractions by each reporting producer (including some based in San Bernardino County) for the twelve 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. Because of this, the total diversions summarized in the tables are different for 2007 than the previous report. The numbers for Edgar Canyon represent both groundwater withdrawals and surface water diversions. Figure 8 illustrates the percentage share for each basin's total extraction within the Agency's service area in 2008.

Figure 6 illustrates the long-tenu 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 increase in groundwater withdrawals both over the long term and over the past 13 years.

Table 3 indicates that production (also known as extractions or withdrawals) in the Beaumont Basin decreased about 9% in 2008 from 2007, about the same as the increase from 2006 to 2007. This resulted in 2008 production being nearly the same as 2006 production, with a higher production in 2007. The peak production year for the Beaumont Basin remains 2003. In three separate years—2002, 2003, and 2007—production in the Beaumont Basin exceeded 19,000 acre-feet.

The 9% reduction in 2008 primarily represents a reduction in pumping by the Yucaipa Valley Water District, which dedicated a new filtration plant in mid-2007. Withdrawals from YVWD in the Beaumont Basin decreased from 2,027 AF in 2006 to 1,683 in 2007 and 572 in 2008. The East Valley Golf Club also reduced production in 2008, from 1484 AF to 1133 AF. The biggest appropriator, the Beaumont Cherry Valley Water District, reduced withdrawals from 11,096 AF in 2007 to 10,617 in 2008. It is likely that this is primarily the result of reduced construction water demands.

Taking these three organizations out of the totals, production in the Beaumont Basin actually increased from 2007 to 2008 from the rest of the pumpers by about 200 AF. Virtually all of this is accounted for by the City of Banning, which increased production in the Basin from 2,947 to 3,154 AF. There were no other significant increases or decreases from 2007 to 2008 in the Beaumont Basin.

Total extractions or withdrawals within the Agency's service area are summarized by well owner in Table 2, and by well owner and basin in Table 1. Table 2 indicates that total production decreased by approximately 9%, from 35,773 AF in 2007 to 32,631 AF in 2008. Well owners that exhibited significant decreases in extractions from 2007 to 2008 include the Yucaipa Valley Water District, from 2,072 AF to 659; the Beaumont Cherry Valley Water District, from 13,031 AF to 12,744 AF; and the City of Banning,

from 10,223 to 9,583 AF. The East Valley Golf Club, with the aforementioned reduction of about 300 AF, led the rest of the well owners in the year over year comparison. These four owners accounted for about 2700 of the approximately 3100 AF decrease in production. Most other owners extracted approximately the same volume of water in 2008 as in 2007, with very minor increases or decreases.

As indicated above, the reduced production is likely the result of YVWD's new surface water filtration plant and reduced demand for construction water in Beaumont. The reason for the 24%, or approximately 300 AF, decrease in production from the East Valley Golf Club is not known.

In reviewing Table 1, total production by basin, the most visible differences, aside from the previously discussed Beaumont Basin, are the Barming and Barming Bench basins. The reduction in Barming and Banning Bench Basin production by the City of Barming is partially offset by an increase in production by the City from the Banning Canyon Basin. It is assumed that the differences are due to the City pumping from different basins in different years for internal reasons, as well as an overall reduction in extractions of approximately 600 AF by the City. The City increased its withdrawals from the Beaumont Basin by approximately 800 AF from 2007 to 2008, lending credence to this hypothesis.

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.

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 much 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 overlier water rights.

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 parties to challenge the determinations pursuant to the judgment if those parties demonstrate that they have been banned by the consequences of the adjudication.

Total production during calendar year 2008 within the Beaumont Basin, as reported, is 17,571 acre-feet. Therefore, the Beaumont Basin experienced an apparent overdraft of about 11,471 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 105,498 AF, an average of approximately 8,800 acre-feet per year over the past 12 years. Figure 9 depicts this graphically.

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. These generally show a longterm trend of lower water levels at most sites, as one would expect in an overdrafted basin.

The implications of increasingly 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.

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 are regulated by the US Environmental Protection Agency through Primary Drinking Water standards. 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.

6. Summary

Groundwater extractions within the Agency's service area decreased by 9%, or approximately 3,000 AF, in 2008. Nearly half of this reduction is attributed to the Yucaipa Valley Water District's new surface water filtration plant. With construction of new homes in the area coming to a virtual standstill, much of the rest of the reduction is likely attributable to reduced construction water usage.

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 required attention. Implementation of these systems over the next few years should reduce groundwater extractions significantly.

Calendar year 2008 was again relatively dry. Weather has consistently been shown to be one of the largest influences on groundwater production. In wet years, homeowners water their lawns less, causing a reduction in groundwater production. In dry years, more water is needed, and groundwater production increases. This is most easily seen in Table I for the years 2004 and 2005. The spring of 2005 included a large number of drenching rains over a period of several months. Consequently, overall groundwater production in 2005 actually decreased by nearly 7% from 2004, despite the large number of new homes constructed that year.

Water levels in local basins continue to fall for the most part. While the overdraft in the Beaumont Basin is measurable, it cannot be determined at this time whether the other basins in the region are also in overdraft, as not enough data are available. The Agency is studying the Cabazon Basin in detail and hopes to have a safe yield identified within the next two years.

The continued overdraft in the Beaumont Basin points up the need to maximize the importation of supplemental water into the region. The Agency's efforts to complete Phase 2 of the East Branch Extension, purchase additional permanent water supplies, and construct additional recharge facilities are all geared toward the goal of reducing and eventually eliminating this overdraft and supplying water for the residents and businesses in its service area. The Agency is working closely with local water retailers and land use planning agencies to accomplish this goal.

7.0 References

- Bloyd, R. M., 1971. Underground Storage of Imported Water in the San Gorgonio Pass Area, Southern California. U. S. Geological Survey Water-Supply Paper 1999-D, 37p
- Rewis, D.L. ct al, 2006. Geology, Ground-Water Hydrology, Geochemistry, and Ground-Water Simulation of the Beaumont and Banning Storage Units, San Gorgonio Pass Area, Riverside County, California. U. S. Geological Survey Scientific Investigations Report 2006-5026, 173p
- San Gorgonio Pass Water Agency Act (1960)
- San Timoteo Watershed Management Authority v. City of Banning et al, Riverside County Superior Court Case No. RIC 389197 (Beaumont Basin Judgment or Adjudication)
- Cherry Valley Environmental Planning Group v. San Gorgonio Pass Water Agency, Riverside County Superior Court Case No. 249947
- Boyle Engineering, 1995. Safe Yield Study: Beaumont Storage Unit.
- Boyle Engineering, 2002. Technical Memorandum: Beaumont Storage Unit
 Basin Yield Update.
- San Gorgonio Pass Water Agency, 2005. Cabazon Groundwater Recharge Project Feasibility Investigation, draft report (Boyle Engineering).
- California Department of Water Resources, 1987. Ground Water Storage, Movement, and Quality Data, San Gorgonio Pass Water Agency. Letter Report.
- Beaumont Basin Recharge Study, 2008
- Wildemuth Environmental, 2007. 2007 Report on Water Supply Conditions in the San Gorgonio Pass Region.
- California Department of Water Resources, 2008. The State Water Project Delivery Reliability Report 2007.

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
LAFCO	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 Gorgonio 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 Gorgonio 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
Banning	270	179	424	586	839	1,103	2,381	1,180	1,485	1.787	2,512	1,999
Banning Bench	3,109	2,182	1,743	730	753	807	952	1,319	2,332	2987	2,199	1,299
Banning Canyon	4,739	5.048	5,216	4,955	5,600	3,024	2,582	3,329	3649	3,464	2,662	3,237
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
Cabazon	636	837	1,063	594	1,182	1,749	1,208	1,604	1.379	1,314	1.466	1,412
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
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
Millard Canyon	-		-		256	1,366	675	823	595	707	842	757
San Timoteo	1,332	1,182	1,304	1,450	1,234	1.465	1.392	1.469	2,132	1904	1,384	1,533
Singleton	599	467	579	558	547	535	345	483	636	645	666	471
South Beaumont	77	68	78	77	77	92	95	92	85	83	94	79
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

Notes:

Amounts shown are rounded to nearest acrefoot

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

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

Owner	1997	1998	1999	20:00	2001	2002	2003	2004	2005	2006	2007	2008
Albor Properties III. LP			92	122	151	164	163	163	165	170	175	200
Arrowhead Mountain Spring Water Co.					256	1.366	675	823	595	707	842	757
Banning Heights Mutual Water Co.	27	128	242	120	153	275	207	32	73	21	22	31
Banning, City of (1)	8959	8,420	9.037	9,490	10,338	9.528	10.053	8934	9082	10,182	10223	9,583
BeaumontCherry Valley Waler Dishict (1)	5,416	5007	8,094	6.522	5.614	8,762	9,205	8606	7070	11.748	13 031	12,744
Beckman, Walt										116	83	13
Brinton, Barbara	10	10	10	10	10	10	10	10	10		10	10
Cabazon County Water District	441	728	949	477	1042	1.434	882	1092	915	824	780	737
California Oak Valley Management	852	558	830	718	884	925	950	852	991	965	742	781
Desert Hills Premium Outlets					136	146	153	169	154	142	143	138
Doviling, Frances M. Jr.	77	68	78	77	77	92	95	92	85	83	94	79
East Valley Golf Club LLC			386	1,688	1.325	1227	1.382	1,368	1227	1,823	1.484	1.133
El Casco Lake Rande	160	160	160	160	160	160	160	160	160	160	180	160
Hudson, Merton Lonnie	460	472	475	385	510	465	430	430	430	435	445	435
Illy, Katharina	267	267	267	267	267	287	267	267	267	267	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
Merlin Properties, LLC	540	550	545	535	530	530	520	500	500	100	100	150
Mission Spring Water District						165	169	157	171	190	206	164
Oak Valley Paitners	312	311	421	446	401	383	453	430	350	312	312	311
Perislis, Jack	46	46	46	40	40	40	40	40	40			
Planlation on the Lake	263	237	264	289	286	280	300	310	320	351	345	354
Rancho Calimesa Mobile Home Ranch	170	170	170	150	198	206	202	202	60	61	61	40
Shiph's Hill LLC						107	11	121	160	146	150	61
Riverside Land Conservancy										5	5	5
Robertson's Ready Mix	195	109	114	117	4	4	4	186	139	158	337	373
Sharondale Mesa Owners Association	190	166	197	167	190	185	182	158	181	189	183	196
South Mesa Waler Co.	2,429	2,141	1,660	2.609	2,583	2,745	2645	2.679	2,551	2,711	2,839	2,681
Summil Cemetery District:	35	55	55	55	65	65	65	65	85	65	85	65
Sun Cal Companies	204	145	132	97	82	47	49	89	839	555		
Sunny-Cal Egg & Poultry, Inc.	1083	1,366	1.731	1,762	1,876	1475	1,475	1.477	1,153	50	50	50
The Diocese of San Bernardino	90	97	105	114	114	140	140	140	70	70	70	
Wildlands Conservancy, The	205		388	381	433	460	317	462	283	301	9	21
Yucaipa Valley Water District	1,379	1,302	1.421	1.344	1802	1993	2,091	2.134	1,854	2,422	2,072	659
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

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 by BCVWD for City of Banning from co-owned wells

Table 2: Groundwater Production in San Gorgonio Pass Water Agency by Purveyor (1997 through 2008 as reported)

San Gorgonlo Pass Water Agency Tota's by Owner by Basin Non-Verified Production Data (in acre feet)

- WIIG	18/8/7	1990	1999	2000	2001	2002	2003	2004	2005	2005	2007	2008
BANNING BASIN												
Banning, City of	270	179	424	586	839	1,103	2,381	1,180	1,485	1.787	2.512	1,999
TOTALS FOR BANNING BASIN	270	179	424	586	839	1,103	2.381	1.180	1.485	1.787	2.512	1.999
BANNING BENCH BASIN												
Banning, City of	3,084	2,117	1678	665	678	732	877	1,244	2,257	2922	2.124	1.224
Brlinton, Baibara	10	10	10	10	10	10	10	10	10	0	10	10
Summit Cemetery District	35	55	55	55	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	2,19)9	1,299
BANNING CANYON BASIN												
Banning Heights Mutual Water Co.	27	128	242	120	153	275	207	32	73	21	22	31
Banning, City of	4.712	4,920	4974	4.835	5,447	2749	2.368	3290	3,575	34.43	2.640	3.206
Lane, Christie	0	0	0	0	0	0	7	7	1	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
BEAUMONT BASIN												
Albor Properties III, LP	0	0	92	122	151	164	163	163	165	170	175	200
Banning, City of (1)	913	1,204	1961	3,404	3,374	4,942	4,427	3,220	1,765	2,010	2.947	3,154
Beaumont-Cheny Valley Waler 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
Walt Beckman				112.0			1.22			116	83	13
California Oak Valley Management	852	5.58	830	718	684	925	9.50	852	991	965	742	781
Meilin Pipperiles, LLC	540	550	545	535	530	530	520	500	500	100	100	150
Oak Valley Pariners	312	311	421	446	401	383	453	430	350	312	312	311
Plantation on the Lake	263	237	264	289	288	280	300	310	320	351	345	3.54
Rancho Calimesa Mobile Home Ranch	170	170	170	150	198	208	202	202	60	61	§ 1	40
Sharondale Mesa Owners Association	190	166	197	167	190	185	182	158	181	189	183	196
East Valley Golf Club LLC	0	0	386	1.688	1,325	1,227	1,382	1,368	1227	1823	1,484	1,133
Sunny Cal Egg & Poultry, Inc.	1,063	1,366	1731	1,762	1876	1.475	1,475	1,477	1,153	50	50	50
Diocese of San Beroardino, The	90	97	105	114	114	140	140	140	70	70	70	0
Yucalpa Valley Water District	874	779	888	774	1374	1,604	1,738	1,833	1,281	2.027	1,883	572
TOTALS FOR BEAUMONT BASIN	7.848	7,343	10,548	13,937	14,474	19,149	19,624	17,758	13,670	17,444	19,331	17,571
CABAZON BASIN												
Cabazon Water District	441	728	949	477	1042	1,434	882	1,092	915	824	780	737
Deset Hills Promium Outlets	0	0	0	0	136	146	153	169	154	142	143	138
Mission Sprlings Water District	0	0	0	0	0	165	169	157	171	190	208	164
Robertson's Ready Mix	195	109	114	117	4	4	4	186	139	158	337	373
TOTALS FOR CABAZION BASIN	638	837	1,083	594	1,182	1,749	1,208	1,604	1,379	1, 314	1,466	1,412
CALIMESA BASIN												
lliny, Kalharina	267	267	267	267	267	267	267	267	267	267	265	265
Perisits, Jack	46	46	46	40	40	40	40	40	40	0	0	0
South Mesa Water Co.	802	797	69	858	1044	952	1,117	976	782	882	954	842
Yucaipa Valley Water District	428	4 38	433	470	338	298	301	252	496	296	313	26
TOTALS FOR CALIMESA BASIN	1.603	1,548	815	1.635	1689	1.557	1.725	1 535	1 575	1 44 5	1 532	1,133

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Table 3: Groundwater Production in San Gorgonio Pass Water Agency by Purveyor by Basin (1997 through 2008 as reported)

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

Owner	1997	1996	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
EDGAR CANYON BASIN												
Beaumont-Cherry Valley Water Dislict	2.635	3,102	3,136	2754	1.643	1674	1.513	1.503	1.463	2.548	1.935	2.127
Hudson, Merton Lonnie	460	472	475	385	510	465	430	430	430	435	445	435
Los Rios luc & The Wildlands Conservancy	579	717	363	359	250	242	226	194	343	343	470	435
Shuoh's Hill LLC	0	0	0	0	0	107	11	121	160	146	150	61
Wildlands Conservancy, The	205	0	386	361	433	460	317	462	283	301	9	21
Yucaipa Valley Water District	77	85	100	100	90	91	52	49	87	99	76	61
TOTALS FOR EDGAR CANYON BASIN	4.156	4.378	4.480	3,979	2,926	3,039	2.549	2,759	2766	3,872	3,085	3,140
MILLARD CANYON BASIN												
Arrowlead Mountain Spring Water Co.	0	0	0	0	258	1,366	675	823	595	707	842	757
TOTALS FOR MILLARD CANYON BASIN	0	0	0	0	256	1,366	675	823	595	707	842	757
SAN TIMOTEO BASIN												
El Casco Lake Ranch	160	160	160	160	160	160	160	160	160	160	160	160
SunCal Companies	204	145	132	97	82	47	49	89	839	555	0	0
Riverside Land Conservancy										5	5	5
South Mesa Water Co.	968	677	1.012	1.193	992	1,258	1,183	1.220	1,133	1,184	1,219	1.368
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
SINGLETON BASIN												
South Mesa Water Co.	599	467	579	558	547	535	345	483	636	645	666	471
Yucaipa Valley Water District	0	0	0	0	0	0	0	0	0	0	0	0
TOTALS FOR SINGLETON BASIN	599	467	579	558	547	535	345	463	636	645	666	471
SOUTH BEAUMONT BASIN												
Dowling, Frances M. Jr.	77	68	76	77	77	92	95	92	65	63	94	79
TOTALS FOR SOUTH BEAUMONT BASIN	77	68	76	77	77	92	95	92	65	83	94	79
	<i>u</i> i											
TOTALS FOR ALL BASINS	24,369	23,230	26,250	28,501	29,577	33.666	33.528	32,349	30,304	35,652	35,773	32,631

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

Oala revised to agree with leasin boundaries, as defined in USGS 2004 report

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

Table 3: Groundwater Production in San Gorgonio Pass Water Agency by Purveyor by Basin (1997 through 2008 as reported)

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

Calendar Year Amount in Acre-Feet

2003 (1)	116
2004	814
2005	687
2006 (2)	4420
2007 (2)	4815
2008 (2)	4905

- (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 Bemardino Valley Municipal Water District Operations Manager

Water Quality Analysis at Devil Canyon Afterbay

						Nitrate+
	TDS	Chloride	Sodium	Sulfate	Nephelometric	Nitrite
DATE	mg/L	mg/L	mg/L	mg/L	Turbidity Units	mg/L
Jan-05	207	54	38	28	E	1.10
Feb-05	251	70	48	40	8	1.40
Mar-05	NR	56	46	49	4	1.40
Apr-05	265	58	48	58	3	1.10
May-05	242	56	45	47	2	2 0.82
Jun-05	NR	54	41	39	5	0.72
Jul-05	173	36	29	28		0.54
Aug-05	181	42	31	28	1	0.43
Sep-05	185	46	34	24	2	0.28
Oc1-05	204	56	39	24	2	0.41
Nov-05	218	60	40	25	1	0.52
Dec-05	288	91	63	36	1	0.78
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	Ę	0.25
Jul-06	162	36	28	24	3	0.42
Aug-06	172	43	32	26	e	0.30
Sep-06	NR	42	32	24	11	0.33
Oc1-06	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	e	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		0.60
Aug-07	297	50	38	26	1	0.40
Sep-07	NR	80	53	26	3	0.36
Oc1-07	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
Mav-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	2	0.40
Sen-08	N/R	72	53	42	1	0.45 Λ ΔΑ
Oct-08	267	71	58	43	2	0.54
Nov-0.8	203	76	61	40	<1	0.54
Dec-08	308	76	61	48	1	1.00
			51	10		1.00

mg/L: milligrams per liter

Source: SWP/DWR O & M. Table 32 DWR Monthly OPS Report NR: Not Reported

Inventory of Groundwater Quality at Selected Wells Select Physical and Inorganic Parameters

Basin	Well Identification	Date of Analysis	Specific Conductance uS/cm @ 25C	pH std units	Nitrite+ Nitrate mg/L as N	Sodi um mg/L	Chloride mg/L	Sulfate mg/L	Alkalinity mg/L as CaCO ³
Beaumont	2S/1W28A1	7/14/2003	431	7.5	7.54	17.4	13.7	18.3	157
Beaumont	3S/1W03K2	6/23/2004	296	7.9	1.3	26.8	9.74	7.8	136
Banning	3S/1E17C1	7/27/2005	311	8.5	1.49	47.7	13.9	8.7	121
Banning	3S/1E18D1	8/29/2006	330	8.4	2.25	52.7	15.9	2.3	138
Cabazon	3S/2E09E1	8/29/2006	413	7.7	2.05	21.8	9,44	19 .1	177
San Timoteo	2S/2W28C2	6/14/2000	953	7.6	0.05	123	68	32.5	392
Calimesa	2S/2W14C1	6/24/2004	518	7.6	4.33	42.4	29.8	18.8	205

uS/cm = microsiemens per centimeter mg/L = milligrams per liter

Source: U.S.G.S.

Table 6: Water Quality for Selected Wells in San Gorgonio Pass Water Agency Service Area



Figure 1: San Gorgonio Pass Water Agency





Source: USGS Scientific Investigations Report 2006-5026

Long Term Mean Annual Precipitation Beaumont Station 3S/1W-10P, Elevation 2613' Mean Annual Precipitation = 17.7"



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 Gorgonio Pass Water Agency Production All Basins 1947 through 2008



Figure 6: Historical Groundwater Production All Basins 1947 through 2008 (as reported)

San Gorgonio Pass Water Agency Production All Basins 1997 through 2008



Figure 7: Historical Groundwater Production All Basins 1997 through 2008 (as reported)

Total Production By Storage Unit 2008



Accumulated Overdraft in the Beaumont Basin 1997 through 2008



Figure 9: Accumulated Overdraft in the Beaumont Basin 1997 through 2008



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

























Monthly TDS at Devil Canyon Afterbay Near San Bernardino 2004 through 2008

Source: Table 32. DWR Monthly Operations Report

Figure 17: Monthly TDS at Devil Canyon Afterbay Near San Bernardino 2004 through 2008

Average TDS at Devil Canyon Afterbay Near San Bernardino 1990 - 2008



Source: Table 32, OWR Monthly Operations Report

Figure 18: Average TDS at Devil Canyon Afterbay Near San Bernardino 1990 through 2008



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



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