

SAN GORGONIO PASS WATER AGENCY

REPORT ON WATER CONDITIONS



Reporting Period 2006 - 2007



San Geronio Pass Water Agency
Annual Report on Water Conditions
Reporting Period 2006 - 2007

Prepared by

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December 2008

Prepared by

San Geronio Pass Water Agency
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SAN GORGONIO PASS WATER AGENCY

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On the cover: Wells in the San Gorgonio Pass can take on many faces, depending on whether they are currently in production or abandoned. Each of the wells shown is in the Agency's monitoring network.

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December 2008

To the Reader:

The San Geronio Pass Water Agency publishes this report on an annual basis. The purpose of the report is to report 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. This report covers the period from January 2006 through December 2007.

The Agency has produced a similar report, under different names, since at least 1990. The scope and title of the report has changed over the years, but the primary goal is still to maintain and update a database on local water resources that can be used by the Agency or by others to make important decisions regarding water use and replenishment.

This Annual Report complies with the Stipulation for Entry of Judgment, Cherry Valley Environmental Planning Group vs. San Geronio Pass Water Agency, Case No. 249947 (Riv. Sup. Ct. 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 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."

Over the past few years, the general format of the report has been expanded to include a number of appendices and additional information on the Agency's activities. We make an effort to not repeat the same text year after year, but to continually add information and to emphasize different areas each year. While the report includes a great deal of data, groundwater extraction data by individual basin by well owner represents key information that can be utilized in many ways by many entities.

The extraction data in particular are difficult to obtain in a timely manner. These data are typically not available until nearly a year after the calendar year ends. Thus, of necessity these annual reports are published well after the data year is over. While this makes it difficult for these reports to serve as detailed management tools on a year to year basis, they do serve to help identify and analyze long-term trends and thus to help make long-term water management decisions. The Agency is committed to publishing these reports in as timely a manner as possible, given the nature of the data collection and Agency manpower availability.

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 web site, www.sgpwa.com, under the Reports page, or available from the Agency's office in hard copy. If you have suggestions on how to make the report better in the future, please do not hesitate to contact us.

In reading this report, or even in perusing it, we hope that you learn more about our region's most precious natural resource—water. Groundwater is truly the Pass's buried treasure.

A handwritten signature in black ink, appearing to read "Jeff Davis". The signature is fluid and cursive, with the first name "Jeff" and last name "Davis" clearly distinguishable.

Jeff Davis
General Manager

December 2008

1. Overview

1.1 San Geronio Pass Water Agency Act

The San Geronio Pass Water Agency Act states that “...in allocating water received from the State Water Project pursuant to this act, the highest priority shall be given to eliminating groundwater overdraft conditions within any agency or district receiving the water” (Section 15.5). In order to understand which groundwater basins are in overdraft, the San Geronio Pass Water Agency (Agency), in conjunction with the United States Geological Survey (USGS), maintains an extensive database of water levels, water quality, and production information for wells in the Agency service area and some neighboring areas.

The Agency has also sponsored a number of studies of the water resources within the Agency area. These studies provide critical information on resource availability and the need for supplemental supplies for any basins in overdraft. This Annual Report, which the Agency has been publishing since 1990, provides an overview of Agency-sponsored programs, data collection and analysis, State Water Project deliveries, and the state of overdraft, to the extent known, in the major groundwater basins within the Agency’s service area.

The Beaumont Basin Watermaster and the San Timoteo Watershed Management Authority also publish reports containing groundwater data. For a number of reasons, data in this report may not match exactly with data in those reports. The Agency considers the data and information contained in this report to be the official data used by the Agency to make management decisions.

1.2 Groundwater Basins

The terrain within the San Geronio Pass area is profoundly affected by faulting – the San Andreas Fault system traverses the area. While the effects of this faulting on groundwater flow are not well understood in all areas, the faults serve to define separate groundwater units within the Agency area. For purposes of this report, these units are referred to interchangeably as **storage units** or as **groundwater basins**. The degree of hydrologic connection between groundwater basins varies. However, they serve as useful divisions for purposes of organizing hydrologic data and defining water resource needs and water resource availability.

In Annual Reports prior to reporting period 2002, hydrologic data were organized and reported according to storage unit boundaries as mapped by the U. S. Geological Survey (USGS) in 1971 (Bloyd). Extensive work by the USGS since that time has resulted in revisions to those boundaries (Rewis et al, 2006). In some cases those revisions have been significant. **The data contained in this report are organized according to these revised storage unit boundaries.** It is important to note that the boundaries of the Beaumont Basin, as defined in this report, are different from those defined in the 2004

data in this report may not match exactly with data in those reports. The Agency considers the data and information contained in this report to be the official data used by the Agency to make management decisions.

Beaumont Basin Judgment. The boundaries defined in this report are based on the aforementioned United States Geological Survey study of the Beaumont Basin; the Beaumont Basin Judgment did not have access to this report in 2004.

1.3 Strategic Plan

In March 2006 the Agency adopted a strategic plan, which included, among other things, a mission statement, a vision statement, and a series of priorities and objectives for the Agency. The plan also identified the definition of the Agency role as a critical factor for success. The Strategic Plan and Agency Role are included in the Agency's 2004-2005 Report on Water Conditions, and may also be found on the Agency's web site. One of the key goals defined in the strategic plan is for the Agency to preserve local groundwater basins for future generations.

2. Background

2.1 Annual Report

The Agency is continuing its program to import supplemental State Water Project (SWP) water into the San Geronio Pass area. As part of the program, this Annual Report provides a record of water conditions in the San Geronio Pass Water Agency service area. These annual reports also provide information upon which to base management decisions regarding SWP water requests and deliveries within the Agency service area. The Annual Report provides an annual accounting of imported water deliveries as well as overall water conditions in the area.

Annual Reports also provide a basis for management decisions on the amount of imported water to be delivered to the San Geronio Pass Water Agency for (1) recharge of groundwater basins to offset any long-term overdraft conditions, (2) scheduling deliveries for water banking in the basins, and (3) meeting any increased “put-and-take” groundwater replenishment-pumping operation needs.

These operations are subject to capacity availability in existing and planned recharge facilities, capacity in the East Branch Extension, and water availability from the State Water Project. Annual Reports will continue to estimate the amount of annual overdraft, if any, in the Beaumont Basin. Other basins may be added to future reports as the understanding of basic hydrologic conditions within these basins is improved, and as their state of overdraft is better defined.

2.2 Data Collection and Reporting

In preparing this Annual Report for calendar years 2006 and 2007, 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, 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

2.2 Data Collection and Reporting

In preparing this Annual Report for calendar years 2006 and 2007, the Agency utilized

tables represent the Agency's best estimate of actual pumping, based on both actual data and production estimates. These estimates are made based on personal interviews, a review of previous pumping records, or both. While wells owned by appropriators (water purveyors) are metered, 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 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 system. 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 Agency participates, with a number of other State Water Contractors, in the Municipal Water Quality Investigation program (MWQI). The purpose of this program is to monitor water quality throughout the State Water Project, particularly in the Delta, and to maximize the water quality obtained in SWP deliveries on the part of the participants.

3. Description of the Area

3.1 San Gorgonio Pass Water Agency

The Agency was created in 1961 by an Act of the State legislature to import water from the State Water Project and to “*acquire, control, distribute, store, spread, sink, treat, purify, reclaim, recapture, and salvage any water including sewage and storm waters, for the beneficial use or uses and protection of the Agency or its inhabitants or the owners of rights to water therein....*” It covers about 225 square miles in the north central area of Riverside County in the San Gorgonio Pass area, between the cities of Riverside and Palm Springs, as shown on **Figure 1**. It is a wholesale water agency, selling water to local water retailers but not to the end user. The principal cities are Banning, Beaumont and Calimesa. Also included are the communities of Cabazon and Cherry Valley and the Morongo Indian Reservation.

In 2007, the Agency completed an annexation of three sections of land in San Bernardino County within the San Bernardino National Forest. The annexed area contains no residents; the purpose of the annexation was to help preserve a watershed for water quality purposes. This annexation is not reflected on the maps in this report in order to publish the report in as timely a manner as possible.

The Agency is bounded on the north by the Little San Bernardino Mountains, on the south by the San Jacinto Mountains, on the south and west by the San Timoteo Badlands, and on the east by the pass opening to the upper Coachella Valley. Topographical relief is dramatic, ranging from about 1,600 feet just east of Cabazon, to over 10,000 feet in the adjacent mountains. Average annual precipitation in the Pass area varies from less than six inches to over 36 inches, with average annual precipitation in the surrounding mountain watersheds reaching over 40 inches.

The Agency service area had an estimated population of over 65,000 in 2005, an increase of approximately 15,000 or 30% since 2000 (US Bureau of the Census). This approximates the 33% increase in Riverside County population over the same period of time. Agricultural land use in the Pass area has declined and has been replaced with residential and commercial land uses. Groundwater is the primary source of water supply to the area, supplemented primarily by local stream diversions and State Water Project water.

3.2 Retail Water Suppliers

Water is supplied within the San Gorgonio Pass Water Agency by several retail water purveyors, by individual well owners located throughout the area, and within the Morongo Indian Reservation by its own local irrigation and domestic water system. The large majority of the area’s population is served potable water from seven retail water purveyors. The City of Banning Water Department and the Beaumont-Cherry Valley Water District currently serve the largest number of customers in the Agency’s service area. The Yucaipa Valley Water District serves the Calimesa area (as well as Yucaipa, which is not in the Agency’s service area) and future areas of growth in the

adjacent mountains. Average annual precipitation in the Pass area varies from less than six inches to over 36 inches, with average annual precipitation in the surrounding mountain watersheds reaching over 40 inches.

unincorporated western portion of the Agency service area. South Mesa Water Company serves domestic water in portions of both Calimesa and Yucaipa. The Cabazon Water District serves most of the eastern portion of the Agency's service area, with the exception of a small area (Verbenia) served by Mission Springs Water District. The Banning Heights Mutual Water Company serves the Banning Bench area. The Idyllwild area is served by the Hi Valleys Water District.

3.3 Surface Water Drainage Basins

There are two principal surface drainage systems, both originating in the Little San Bernardino Mountains, as shown on **Figure 2**: (1) Little San Gorgonio and Noble Creeks, and tributaries, which drain the western portion of the San Gorgonio Pass Water Agency into San Timoteo Creek, a tributary of the Santa Ana River; and (2) the San Gorgonio River and tributaries, which drain the eastern portion of the San Gorgonio Pass Water Agency into the Whitewater River System, which is part of the Colorado River Basin. Minor drainage from the south of Beaumont and Banning flows south into Potrero Canyon and the San Jacinto River system, which is tributary to the Santa Ana River.

3.4 Surface Water Diversions

The Southern California Edison Company and its predecessors historically diverted water from the East Fork and the South Fork of the East Fork of the Whitewater River watershed into the upper San Gorgonio River (Banning Canyon, sometimes referred to as Water Canyon). In the past, the water was used for hydroelectric power generation and water production. After power generation, the water was used by the Banning Heights Mutual Water Company and the City of Banning. Because of a conveyance system failure in 1998, no hydroelectric power has been produced in recent years, however water continues to be diverted into Banning Canyon via Burnt Canyon, and is diverted to serve the Banning Bench. A portion of this water runs down the San Gorgonio River to wells owned by the City of Banning in Banning Canyon.

The Beaumont-Cherry Valley Water District diverts runoff from the upper reaches of Edgar Canyon in San Bernardino County. This water has primarily been used to recharge local groundwater basins. Specific data on this diversion is not included in this report, though production data are included.

3.5 Groundwater Basins

Substantial amounts of groundwater have accumulated in the sediments that comprise the lands within the Agency. The areas of coarse-grained sediments are of significance in the basin due to their high infiltration characteristics. These are the areas of major natural recharge.

The complex geology of the San Gorgonio Pass area has been formed largely from the rise of the surrounding mountain ranges, from erosion and sedimentation processes, and from seismic activity. Numerous faults have been mapped in the area based upon field

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failure in 1998, no hydroelectric power has been produced in recent years, however water continues to be diverted into Banning Canyon via Burnt Canyon, and is diverted to serve the Banning Bench. A portion of this water runs down the San Gorgonio River to wells

verification or postulated from indirect evidence gained from water well records, geophysics, and other information.

The concept of groundwater storage units or groundwater basins is central to defining the geohydrologic behavior of the San Gorgonio Pass area. Groundwater basins have been defined in the area based upon extensive recent investigations conducted by the USGS (Rewis et al, 2006). **Figure 3** shows the approximate boundaries of these groundwater basins as currently defined by the USGS. These boundaries are the ones used by the Agency for all its reports.

It is estimated that the Beaumont and Cabazon basins have the largest amount of water in storage and also the largest amount of usable storage capacity. The usable storage capacity in the Beaumont basin has been previously estimated to be in the range of 400,000 acre-feet (DWR, 1987). Recent studies of the Cabazon basin indicate the possibility of over 400,000 acre-feet of usable storage (San Gorgonio Pass Water Agency 2005).

3.6 Beaumont Basin Adjudication

On February 20, 2003, the San Timoteo Watershed Management Authority (STWMA) filed an action in Riverside County Superior Court for the purpose of adjudicating groundwater rights in the Beaumont Basin. On February 4, 2004, a stipulated judgment was entered adjudicating these rights as among the parties to the action (San Timoteo Watershed Management Authority v. City of Banning et al). A detailed summary of this action was provided in the 2004-2005 Report on Water Conditions (San Gorgonio Pass Water Agency, 2007). The Agency is not a party to the judgment.

The safe yield defined in the Judgment (8,550 acre-feet per year) is between 2400 and 3500 acre-feet higher than safe yields defined in studies by the Agency. These studies defined the safe yield at between 5000 and 6100 acre-feet per year (Boyle, 1995 and Boyle, 2002).

The Stipulated Judgment allows the Appropriators to continue to meet increasing water demands while overdrafting the Basin for at least ten years (through February 2014). During this time, the groundwater table will likely fall further, possibly endangering shallower wells. Implementation of the Stipulated Judgment will make elimination of overdraft more difficult in the near term, as an additional 160,000 acre-feet are being and will continue to be withdrawn without replenishment between February 2004 and February 2014.

The safe yield defined in the Judgment (8,550 acre-feet per year) is between 2400 and 3500 acre-feet higher than safe yields defined in studies by the Agency. These studies

4. Agency Programs

4.1 East Branch Extension of the California Aqueduct

Dedication ceremonies were held in March 2003, marking the completion of Phase I of the East Branch Extension pipeline and pump stations, and bringing SWP water to the region. This project marked the culmination of over 10 years of planning, engineering, and construction, and represented a major milestone for the Agency in its efforts to eliminate overdraft conditions in the San Geronio Pass Area.

The extension of the California Aqueduct was planned to be constructed in two phases. Phase II includes additional water transmission facilities as well as additional pumping capacity, primarily in the Mentone area. The Draft Environmental Impact Report (DEIR) for the Phase II project was released in late July 2008. Phase II includes approximately six miles of 72- and 78-inch pipe under the Santa Ana River, a new pump station and regulating reservoir in Mentone, and additional pumps for the Crafton Hills and Cherry Valley Pump Stations.

The Phase II project will correct a “bottleneck” in the system. While the pipeline is correctly sized for the Agency’s full allotment of State Water Project water on either end, the middle section, which includes a crossing of the Santa Ana River, must be enlarged.

The Final Environmental Impact Report should be published in early 2009, enabling final design and equipment procurement to begin in early 2009. The planned facilities will be sized for the Agency’s full 17,300 acre-feet per year allotment from the SWP. The facilities should be “on line” by 2013.

4.2 Supplemental Water Master Plan

In 2006, the Agency began working on a supplemental water master plan in order to determine how best to address future water demands with regard to timing, amount, and conveyance capacity. This report is being finalized and should be completed in early 2009. Once it is completed and presented to the Agency’s Board of Directors, it will be posted on the Agency’s web site.

This report will identify various alternatives for bringing additional supplemental water to the region once capacity in EBX is full. It is anticipated that the ultimate regional supplemental water demand will exceed the capacity of the EBX and that additional conveyance facilities will be required at that time. The Agency would have to purchase additional supplemental water beyond its 17,300 acre-feet allotment in order to meet ultimate supplemental water demands in the region.

4.2 Existing and Planned Recharge Facilities

Since March 2003, the Agency has been importing State Water Project water for direct recharge of the Beaumont Basin in the Agency’s Little San Geronio Creek Recharge Facility. In that time, the Agency has recharged approximately 3000 acre-feet (as of December 2007) in this facility. This facility has a recharge capacity of approximately

4.2 Supplemental Water Master Plan

In 2006, the Agency began working on a supplemental water master plan in order to

1800-2000 acre-feet per year. Because of this limitation, the Agency is involved in studies searching for other recharge sites.

In May 2008 (after the period of this report), the Agency published “Evaluation of Potential Recharge Sites for San Geronio Pass Water Agency (San Geronio Pass Water Agency, 2008).” This report identified and ranked a number of potential recharge sites in the Beaumont Basin. This report is posted on the Agency’s web site. The Agency is currently evaluating these sites for potential temporary and long-term recharge facilities.

In addition, the Agency is currently preparing environmental documentation for an instream recharge facility in Noble Creek south of Brookside Avenue. This site, identified in the above study, was previously identified as an excellent recharge site. The Agency plans to have this instream recharge facility online in 2009.

In September 2006 the Beaumont-Cherry Valley Water District started recharging State Water Project water purchased from the Agency in its recharge facility in Cherry Valley. Between September 2006 and December 2007, the Agency delivered approximately 8002 acre-feet to this facility. This facility has a much larger capacity than the Little San Geronio Creek facility, with approximately 23 wetted acres of recharge ponds.

The City of Banning is working with Pardee Homes to develop a recharge facility in the vicinity of Smith Creek within the City limits. The site overlies the Beaumont Basin. The City and the Agency have partnered to design a pipeline to connect this planned facility to the East Branch Extension. This pipeline is currently in the design phase, with the Agency funding a design of an oversized (54-inch) version of the City’s planned 24-inch line. The Agency may decide to fund construction of the larger line, which would enable this pipe to be the first phase of an extension of the East Branch Extension to the Cabazon area and would include capacity for this area as well as the City of Banning.

Identifying and constructing additional recharge facilities in the Beaumont Basin is critical to reducing the overdraft of the Basin, and the Agency is committed to accomplishing this goal.

4.4 Whitewater Diversion

This diversion, previously mentioned in Section 3.4, is a hydroelectric system located in the Little San Bernardino Mountains. Water for the project emanates from the Whitewater River system and is transferred into Banning Canyon via a 13-mile flume system. The diversion system can generate up to several thousand acre-feet per year (in wet years) of high quality water supply. As such, it is a relatively major source of water to the region. The Southern California Edison Company (SCE) and its predecessors operated the system for many years under licenses from the Federal Energy Regulatory Commission (FERC).

In 1999 SCE gave notice that it would not renew its license that expired in April of 2004. In early 2000 the water rights holders receiving water from the system approached the Agency to ask for help to continue the delivery of water from the diversions.

inch line. The Agency may decide to fund construction of the larger line, which would enable this pipe to be the first phase of an extension of the East Branch Extension to the Cabazon area and would include capacity for this area as well as the City of Banning.

In early 2008 (after the period of this report) the Agency's Board formally approved a four party agreement whereby SCE would be responsible for certain improvements and upgrades to the system and would transfer the system to local control. The Banning City Council also approved the agreement. However the Banning Heights Mutual Water Company has not signed the agreement; thus work has not begun on the improvements. It is unclear when or if Banning Heights Mutual Water Company will sign the agreement.

The transfer, if completed, will include agreements with SCE, the United States Forest Service, and other entities, including possibly the Federal Energy Regulatory Commission (FERC). It will also include the proper environmental clearances.

The Agency has worked hard to bring the proposed repairs to fruition so that the conveyance system can be upgraded to more easily withstand storms. If the repairs are not made soon it is feared that the entire system may fail, causing an outage that could last several months. This would have a great impact on water supply to residents of the Banning Bench.

4.5 USGS Beaumont/Banning Water Resource Investigation

A finite-difference ground-water flow model of the Beaumont and Banning basins was completed by the USGS in 2005. A report documenting the model and supporting investigations was published in 2006 (Rewis et al). The model is the culmination of a broad range of scientific and technical investigations of the Agency service area, with emphasis on the Beaumont and Banning Basins.

The Agency will use this model over the next few years as a management tool for the Beaumont Basin. It is currently being used, with additional modules, to monitor water quality impacts of a planned instream recharge facility in Noble Creek. The Agency is working with the USGS to extend the model to the Cabazon Basin so that the major groundwater basins in the region can be studied in order to determine how best to manage them.

4.6 Cabazon Basin Investigations

In recent years the Agency has turned its attention eastward toward the Cabazon Basin, the other large groundwater basin in the Agency's service area. The Cabazon Basin is the primary source of drinking water for the Cabazon Water District and a source of water for the Morongo Band of Mission Indians. The Agency is interested in learning more about the Basin, including its storage capacity, safe yield, and whether or not it is in overdraft.

Toward that end, the Agency has contracted with the USGS to perform various studies on the Cabazon Basin. In recent years the Agency has drilled four monitoring wells in the Basin at various locations, and has performed gravity studies that yield data related to the water-bearing capacity of the subsurface. This annual report includes data on water surface elevations in the Cabazon Basin.

The Agency will use this model over the next few years as a management tool for the Beaumont Basin. It is currently being used, with additional modules, to monitor water quality impacts of a planned instream recharge facility in Noble Creek. The Agency is

The Agency hopes to identify whether the Cabazon Basin is in overdraft within the next year or two. At such time as the East Branch Extension is extended to the Cabazon area, the Agency would be able to recharge the Basin with State Project Water. Since the Colorado River Aqueduct traverses the Cabazon area, there could be opportunities in the future to utilize the Cabazon Basin conjunctively once more data are obtained and once a pipeline is constructed to the area. This could include banking of water from the State Water Project, the Colorado River, or both.

4.7 Water Conservation and Education Master Plan

The Agency recognizes that there are a number of ways to replenish the Beaumont Basin and groundwater basins in general. The use of State Water Project water, either for recharge or in-lieu replenishment, is just one way. Another is to reduce water demands, thereby reducing the need for increased groundwater production. Reduced pumping is a very effective tool to recharge groundwater basins.

Toward this end, the Agency has become more aggressive in its efforts to implement water conservation programs. In 2006, the Agency's board authorized the development of a water conservation and education master plan that identifies a number of water conservation programs and water education programs within the Agency's service area. The goal of these programs is to measurably reduce the short-term and long-term water demands in the region, thereby leaving more groundwater in the local basins. The Agency began implementing these programs in 2007. Experience has shown that public education on water use, especially in California, has reduced per capita water demands.

The Agency has worked hard to obtain grant funding for a water conservation demonstration garden in the region. Such a garden would enable local homeowners to visualize how their own yards could be landscaped to be attractive, while utilizing less water. Approximately 67% of the water used annually in each home in the Pass is used for irrigation.

4.8 Purchase of Additional Water Rights

Due to continually falling water levels in the Beaumont Basin and the decreasing reliability of the State Water Project (**DWR 2007**), the Agency has identified the procurement of additional water rights as one of its highest priorities. The need for additional water was first identified in the Agency's strategic plan in 2006. In 2007, Kennedy-Jenks consultants produced, at the request of the Agency, a report identifying potential sources of water rights that could be purchased. In 2008, after the period of this report, the consultant issued a follow-up report identifying the specifics of some of the alternatives still available.

The Agency has made the purchase of additional supplemental water one of its highest priorities over the past two years and is in the process of developing a finance plan in order to determine how best to fund such a purchase.

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demonstration garden in the region. Such a garden would enable local homeowners to visualize how their own yards could be landscaped to be attractive, while utilizing less water. Approximately 67% of the water used annually in each home in the Pass is used

5. Water Supply Conditions

5.1 Precipitation

Annual precipitation at Beaumont for the period of record (since 1888) is shown in **Figure 4**. The long-term mean annual precipitation in Beaumont is about 18 inches.

Although the amount of recharge from precipitation is one of the most difficult items to determine in an overall water budget of an area, cyclical patterns and magnitudes of cumulative changes in precipitation provide a useful indicator of water surplus or shortage conditions.

Over the historical record depicted in **Figure 4**, the longest period of surplus water conditions, 41 years, occurred from the early 1900's to the mid 1940's, over which the cumulative surplus was plus 105 inches, or 2.56 inches per year. Although this period was interrupted by significant dry years from 1928-1934, the primary surplus trend was not broken. This period was followed by a relatively dry period of about 20 years, from the mid 1940's to the mid 1960's. During this period, the cumulative shortage was 67 inches, or 3.35 inches per year. These trends are more easily seen in **Figure 5**.

Figures 4 and 5 indicate the variability of precipitation. Although the mean annual precipitation in Beaumont over the period of record is 17.9 inches, precipitation has ranged from a low of about five inches in 1999 and 2000 to a high of about 37 inches in 1978. The rain gage is at a lower elevation than much of the Pass. More precipitation would be expected at higher elevations due to orographic cooling.

While 2006 was a relatively wet year, 2007 was one of the driest on record for most reporting stations in Southern California and in other areas of the state. Rainfall records for 2008 (after the period of this report) also show a very dry year. There is no question that California, with consecutive dry years in 2007 and 2008, is in a drought.

5.2 Streamflow

Streamflow measurements were discontinued in the 1980's within the San Geronio Pass and consequently there is little or no recent data available. Data for prior years is sparse, in part because of the limited number of recording stations that were operated, and in part because of the intermittent nature of flows of the tributaries discharging into the Pass area. Local streams are diverted by water agencies for use either as direct deliveries or for groundwater recharge. In particular, streamflow diversions from the Whitewater River are used to meet water demands on the Banning Bench and the City of Banning, and diversions from Edgar and Little San Geronio Canyons are used by Beaumont – Cherry Valley Water District to recharge local basins (see Sections 3.4 and 4.4). This water is then recovered by pumping from wells.

5.3 Wastewater

The City of Beaumont is sewerred, with wastewater treated at a central facility located in the southwest portion of the City. The City of Banning is also sewerred, with wastewater treated at a central facility located in the southeast portion of the City with discharge via percolation basins. The Yucaipa Valley Water District provides sewerage and wastewater treatment service to portions of the Calimesa and Yucaipa areas. Wastewater discharge totals by discharger by calendar year are shown in **Figure 6**.

All three of these agencies are in various stages of planning non-potable water distribution systems for use of treated wastewater, also called recycled water, to irrigate golf courses, parks, schoolyards, median strips, and other public areas. The Yucaipa Valley Water District is planning a dual-plumbing system in Calimesa, with homes having separate meters for potable and non-potable water. When these systems become operational, the demand on local groundwater basins will be significantly reduced, as recycled water will replace groundwater for many irrigation applications.

Wastewater disposal may contribute indirectly to the groundwater supply through percolation from individual on-site wastewater disposal units (septic tanks) and from percolation of discharges from community wastewater treatment plants.

The Cherry Valley area is currently unsewerred and relies on individual on-site treatment and disposal systems (septic tanks). The return flow of septic tank discharges in the Cherry Valley area represents return flow in the upper portion of the Beaumont Basin. The Cabazon area is also on septic tanks. See Section 7, Water Quality, of this report for additional information.

To the extent that recycled water can be used as a water supply, less groundwater will be pumped. This “in-lieu” recharge is commonly used in other areas of Southern California and represents an effective method of recharging groundwater basins.

One caveat related to the use of recycled water is the salinity level. Salinity is also known as total dissolved solids, or TDS. Salinity of recycled water is greater than the original water because this water picks up salts as it travels through our bodies. Greater use of recycled water will result in increased TDS levels in the Beaumont and other groundwater basins. The Santa Ana Regional Water Quality Control Board has mandated maximum levels of TDS in groundwater basins within its jurisdiction. Water purveyors in the Agency service area will need to take steps in the future to mitigate the additional salinity brought about by the use of recycled water. The Agency, as well as members of the San Timoteo Watershed Management Authority, are planning such mitigation measures.

5.4 State Water Project Water

As indicated earlier, the Agency began importing State Water Project water into the region in March 2003. **Table 4** summarizes deliveries of SWP water for the calendar years 2003 through 2007. It is anticipated that 2008 deliveries for SWP water will be reduced due to the allocation of SPW being reduced from 60% in 2007 to 35% in 2008. Deliveries in 2009 may be even less as experts predict a dry year and as levels in reservoirs around the state are greatly reduced.

Other sections of this report detail Phase II of the East Branch Extension which will, when completed, allow the delivery of the Agency's full 17,300 acre-feet of State Project Water allocation, during wet years. The Agency recognizes that water supplies are likely to be low many years over the next 10-15 years, until infrastructure in the Sacramento Delta is improved, and is seeking additional water sources to improve reliability to better meet the water demands of the local water retailers.

5.5 Water Supply and Demand Projections

Water supply and demand projections are a key element of water facility planning. Most public water agencies update their water supply projections and water demand projections on a regular basis. The Urban Water Management Plan Act requires water agencies in California that deliver more than 1,000 acre-feet of water per year to prepare an Urban Water Management Plan (UWMP) every five years. This Plan must include water supply and demand projections and is typically used as part of the environmental planning process and land use approval process for new developments.

The Agency will produce its first Urban Water Management Plan in 2010. In the meantime, the Supplemental Water Master Plan, expected to be finalized in early 2009, will include such projections for ultimate buildout conditions, without regard to water demands or supplies in a particular year. The water demand projections in the Supplemental Water Master Plan are based on approved land use plans, not on population projections. The local water supply projections in this report are based on work done by others (Wildermuth Environmental, 2007). The Agency has not independently confirmed the numbers in this report, included as **Appendix A**.

Water demand projections represent a daunting task for the Agency, as well as for local water retailers. The draft Supplemental Water Master Plan projects an ultimate demand for supplemental water in the Agency's service area of approximately 70,000 acre-feet per year. This includes land within retail water agency service areas and the Morongo Reservation. The Agency's contract with the California Department of Water Resources calls for an annual maximum in wet years of 17,300 acre-feet per year. This represents a difference of over 50,000 acre-feet of water annually that the Agency must procure, convey to the Pass region, and deliver. These draft projections represent a snapshot in time, and could change in the future based on a number of factors, including the economy, seismic events, demographic patterns, and the like.

The total ultimate annual water demand projected in the draft report for the Agency's service area is 125,000 acre-feet, with an estimate of 55,000 acre-feet produced locally. The Agency has not independently confirmed this local production estimate; it is derived from reports by others. The difference, 70,000 acre-feet, represents the ultimate supplemental water demand.

The water supplies and facilities required to meet the projected demands will cost local water retailers (including the Agency) and their ratepayers tens of millions of dollars, and possibly hundreds of millions, over the next two decades. Some of these funds will be

used to procure additional supplemental water supplies, while others will be used to construct infrastructure to deliver the water and to either recharge it or treat it for direct deliveries. The Agency will work to ensure that these funds include facilities to protect all local groundwater basins that are demonstrated to be in a state of overdraft.

The Agency's portion of these costs will come from a combination of capacity fees, taxes, and water rates. It is the Agency's view that growth should pay for its fair share of new water and facilities.

6. Groundwater Conditions

6.1 Groundwater Extractions

State law (California Water Code Section 5004) requires owners of wells in four southern California counties, including Riverside County, to file annual reports to the State Water Resources Control Board (SWRCB) Division of Water Rights, on the quantity of groundwater pumped or surface water diverted. These reports must be filed within the first six months of the succeeding year. This law exempts small individual well owners who pump less than 25 acre-feet per year from the reporting requirement.

The law was enacted in 1955 and allowed filing on production wells beginning in 1947. Groundwater extraction data prior to 1947 are unavailable for the region. Reported extractions are tabulated in **Tables 1 and 2** by storage unit (groundwater basin) and major water purveyor, respectively. Despite the law, not all production is reported to the SWRCB. Whenever possible, the Agency has obtained unreported production amounts from producers. In some cases production has been estimated.

Table 3 provides a more detailed breakdown of extractions by each reporting producer for the twelve most recent years of available data. This table represents surface diversions from the Whitewater River, which have not been included in previous annual reports. The numbers for Edgar Canyon represent both groundwater withdrawals and surface water diversions. **Figures 9 and 10** illustrate the percentage share for each basin's total extraction within the San Geronio Pass Water Agency for 2006 and 2007.

Figure 7 illustrates the long-term trend in reported groundwater production in the region since 1947. **Figure 8** 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 12 years. Since 1995, local groundwater production has increased over 75%, from just under 20,000 acre-feet per year to just over 35,000 acre-feet per year.

Table 3 indicates that production (extractions) from the Beaumont Basin increased significantly in 2006 and 2007, primarily because Beaumont Cherry Valley Water District increased its production from 5,607 acre-feet in 2005 to 9,200 in 2006 and 11,096 in 2007. This represents a 98% increase by Beaumont Cherry Valley over a two-year period. The District's previous maximum production year was 2003, when it extracted 7,692 AF from the Basin. The City of Banning also increased production from the Basin over the past two years, from 1,765 AF in 2005 to 2,010 in 2006 and 2,947 in 2007. This represents a 67% increase from 2005. Over the past two years, Beaumont Cherry Valley Water District has drilled a number of new wells in the Basin, three of which are co-owned by the City of Banning. Thus, production capacity from the Basin increased significantly in the two-year period covered in this report.

In addition to these two appropriators, the Yucaipa Valley Water District increased its withdrawals from the Basin, but by a smaller amount. The YVWD completed a water filtration plant in 2007 and began reducing its dependence on local groundwater. This is

Figure 7 illustrates the long-term trend in reported groundwater production in the region since 1947. **Figure 8** 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 12 years. Since 1995, local groundwater production has

reflected in its production from the Basin, increasing from 1,281 to 2,027 AF from 2005 to 2006 but decreasing to 1,683 AF in 2007. This still represents an increase over the two-year period of 31%.

Most overlayers in the Basin reported relatively constant extraction over the reporting period with some notable exceptions. The Sunny-Cal Egg Ranch decreased its withdrawals from 1,153 AF in 2005 to 50 AF in 2006 and 2007. The East Valley Golf Club (formerly PGA West) increased pumping significantly from 1,227 to 1,823 AF from 2005 to 2006, but decreased in 2007 to 1,484.

Comparing the two highest extraction years in the Beaumont Basin, 2003 and 2007, the totals were very similar (19,624 in 2003 and 19,330 in 2007), but individual production numbers vary greatly. For example, **Table 3** includes the withdrawals of the Beaumont Cherry Valley Water District, City of Banning, and the Sunny-Cal Egg Ranch for those two years. Production from the City and the Ranch were lower by 2,905 AF in 2007, while production from the District increased by 3,404 AF.

It is important to point out that 2007 was one of the driest years on record in Southern California. Precipitation throughout the region either set new records for low rainfall or came close. Less rain results in more external landscape irrigation, so it is not unusual to see higher water usage in dry years. The prior years, 2004, 2005, and 2006, were relatively wet years in comparison.

The Beaumont Basin numbers are not reflective of overall water production within the Agency's service area. Total production from all basins increased from 30,085 to 34,951 AF from 2005 to 2006, a 16% rise. However, from 2006 to 2007 (a wet year to a dry year), production was flat, increasing only 421 AF, or 1.2%. This results in a two-year increase throughout the service area of 17.5%, compared to 50% in the Beaumont Basin. This would seem to indicate that either water producers are switching from other sources of water to the Beaumont Basin, or that growth overlying the Beaumont Basin is considerably faster than growth in other portions of the service area, or both.

Two basins with noticeably lower withdrawals in 2007 are the San Timoteo and Banning Canyon Basins. In the case of the San Timoteo Basin, SunCal Companies had previously used a well to produce construction water. With construction mostly completed on homes near the golf course in 2006, the 2007 withdrawal by SunCal Companies decreased from 555 AF to zero. This brings overall production in the Basin down to levels similar to those before SunCal began the construction. In the case of Banning Canyon, the City of Banning's production decreased from 3,575 AF in 2005 and 3,443 AF in 2006 to 2,640 AF in 2007. When coupled with Banning's increase in production from the Beaumont Basin from 2,010 in 2006 to 2,947 in 2007, this would appear to be a case where the City is shifting production from one basin to another, at least for one year.

It would appear that overall production caught up with the growth in residential water use caused by thousands of new homes constructed in the region in the four previous years. Previous reports indicated that overall water production throughout the Agency's service area had peaked in 2002 and had fallen in the next three years, despite the growth. As

indicated previously, those three years were relatively wet, indicating that weather patterns have a large impact on water demands.

6.2 Cooperative Monitoring Program

In 1990, the Agency began an aggressive campaign to measure and record groundwater conditions, primarily static water levels, throughout the Pass area. **Figure 11** shows the current status of the groundwater level well monitoring network. The Agency's database is larger than this network and includes water levels from additional wells reported by others. The network represents wells in which the Agency collects the data with its own staff. This program has been refined over the past few years. Approximately 123 wells are currently included in the monitoring network.

Most wells are measured in the spring and fall of each year (usually May and November) by trained personnel. When data are collected by others on behalf of the Agency, it is collected at the same time. Only wells whose owners have granted access to the Agency are monitored.

The water level data gathered for this program are not always 100% reliable. An example of this is a well is operating (pumping water) during the monitoring. This is not an optimal condition, as pump operation results in a cone of depression surrounding the well and a water level elevation that is dynamic. Static water levels are better indicators of long-term trends in water surface elevation. While the figures in this report do not indicate the status of wells at the time of sampling (pumping or not pumping), this status is noted in the Agency's database.

Many of the wells monitored are no longer in service. This does not negate the importance of the data collected from that well. A well merely represents an access point to a local groundwater basin through which data may be collected. The status, size, or age of a well has no bearing on the meaning of the data collected from it, if the monitoring is properly performed by trained personnel. The exception to this is the case where a well casing has been compromised in some manner, preventing the collection of reliable data. This is mostly the case with older, abandoned wells.

Sometimes a data point in one of the figures in this report is an outlier; that is, it is far higher or lower than expected based on previous data points. These outliers could be a result of a number of phenomena—incorrect measuring technique, a dynamic condition (for example, a well pumping while previous data points were taken while the well was not pumping), an error in recording the data, or other factors. It is unlikely that the static water level at a given well would increase a number of feet and then decrease a number of feet in any given year, unless monitoring is done while the well is in operation or incorrect data are taken. **Figures 15 and 16**, for example, illustrate this point. For this reason, long-term trends determined from the figures in this report are more meaningful than the data represented by one or two data points.

The Agency continues to work with the USGS to improve and expand the current well monitoring network. Each year the USGS and the Agency search the Agency service area to identify wells that can be added to the network to more fully represent the current conditions for the basins monitored. Occasionally a well owner requests that the Agency monitor his well. If there are no impediments to accurate measurement of the well, the Agency typically honors the request and adds the well to its monitoring network. Well elevation and location references are more accurately noted as equipment and technology improve.

The Agency maintains a computer database of well owners, water levels, groundwater extractions, and other information. Wells in this database are identified by their state well numbers, as well as by the well owner. A state well number includes a township and range indicating the physical location of the well. The USGS database typically only includes a state well number.

It is important to note that the Agency collects data strictly for water level and water quality monitoring purposes. The Agency has no police power with regard to well pumping and no authority to ask any well owner to change the well operation.

The Agency recognizes that a detailed database is a critical tool in monitoring overdraft and in managing the local groundwater basins. The Agency will continue to improve this cooperative monitoring network as the area grows, new wells are placed on-line, and old wells are taken out of service.

6.3 Historical Groundwater Level Decline

Although long-term groundwater level records are limited within the San Geronio Pass, the available records portray a general long-term decline in the Beaumont Basin since the 1920's. Groundwater levels have declined over 70 feet in portions of the Beaumont Basin, an annual average of about one-foot per year. These records indicate that groundwater overdraft is not a new phenomenon in the region. That is, recent growth is not the sole reason for overdraft conditions.

The Banning Basin suffered a substantial depletion of groundwater in the 1930's due to the construction of the Metropolitan Water District of Southern California's San Jacinto Tunnel. Approximately 150,000 acre-feet of water drained into the tunnel during its six-year construction period through fractured rock and faults. Inflows into the tunnel have averaged an estimated 4,500 to 5,000 acre-feet per year during the post-construction period and continue today.

Less information is available on the other groundwater basins within the Agency's service area. Although **Tables 1 and 3** detail extraction records for those basins, safe yields are not known at this time. Therefore it is impossible to determine, outside of the Beaumont Basin, which of these might be in overdraft. However, as the Agency continues its study program with the USGS, additional information will become available and at some point in the future the Agency will determine safe yields of the other basins. Based on ongoing

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work with the USGS, the Agency may be able to estimate the safe yield of the Cabazon Basin by 2010.

6.4 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 8,550 acre-feet defined in the Beaumont Basin Judgment, which represents the sum of overlie 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 harmed by the consequences of the adjudication.

Total production during the reporting periods of 2006 and 2007 within the Beaumont Storage Unit, as reported, is 17,355 acre-feet in 2006, and 19,330 acre-feet in 2007 (**Table 1**). Therefore, the Beaumont Storage Unit experienced an apparent overdraft of about 11,255 acre-feet in 2006 and 13,230 acre-feet in 2007 (assuming a safe yield of 6,100 acre-feet per year) or 8,705 acre-feet in 2006 and 10,680 acre-feet in 2007 (assuming the safe yield of 8,650 acre-feet per year defined in the Beaumont Basin adjudication). These numbers represent a significant increase over 2005 extractions (13,670 acre-feet), but are still below 2003 withdrawals (19,624 acre-feet).

Overdraft is described as "apparent", since these estimates assume that conditions are substantially unchanged from conditions prevailing at the time of the original analyses. If inflow and/or outflow conditions (e.g. recharge from precipitation or storm runoff, or new production wells in tributary basins) are substantially different, or if the consumptive portion of pumped water has changed, the apparent overdraft would be different. Changes in the consumptive portion of pumping would be expected if the pumping shifts from agricultural to municipal and industrial uses. For example, when agricultural lands are irrigated, more water is typically applied than is used by the crop being irrigated, with most of the difference eventually returning to the groundwater table. In Municipal use, a greater percentage of water ends up in sewers and therefore is discharged as treated wastewater into a stream at the lower end of a watershed. Unless this water is recycled, it typically will not return to the water table in the same groundwater basin.

Given the apparent overdraft, in order to eventually achieve a state of equilibrium in the Beaumont Basin, it may be necessary in certain years to recharge more than 13,000 acre-

feet of supplemental water in the Basin. If extractions increase above 2007 levels, equilibrium would obviously require even higher levels of recharge.

In September 2006, three years after State Water Project water was made available to the area, the Beaumont-Cherry Valley Water District placed a recharge facility on-line on its property near Beaumont Avenue and Cherry Valley Boulevard. As of that date, the recharge capacity of the Beaumont Basin has increased, and it will in the future be easier to mitigate overdraft in the Basin. However, additional recharge facilities, both local and regional, will be required in order to adequately address overdraft and to store water in wet years to prepare for dry years.

Currently the Beaumont Cherry Valley Water District recharges water for the purpose of placing it into a storage account from which it will be withdrawn at some point in the future. In other words, while it is engaged in recharge activities, these activities are not currently intended to mitigate previous overdrafting or to refill the basin.

The water the Agency recharges at the Little San Geronio Creek recharge facility is strictly for overdraft mitigation and will not be withdrawn.

6.5 Groundwater Levels

As mentioned above, depths to the water table are currently measured each fall and spring throughout the Agency's service area. **Figure 11** shows a map of the Agency's water level network. There are approximately **123** wells currently in the system and the twice-yearly measurements from these wells are entered into the Agency water database system. Water surface elevation is a very important tool in determining in which basin a groundwater well is located. It is also important in devising management plans for groundwater basins.

The Agency is working with the USGS to establish a more comprehensive water level monitoring network in each of these local basins. Information on groundwater levels becomes more critical as the need for additional well development grows. **Figures 12 through 17** show time-series groundwater elevations (hydrographs) for selected wells in the Agency service area. **Figures 13, 14, and 15** show groundwater level change at selected wells in the Beaumont Basin over various periods of time. These hydrographs highlight the continued trend in water level declines in the Beaumont Basin and the observable effects of the overdraft. Water level data for the region is also available at the USGS website <http://waterdata.usgs.gov/ca/nwis/gwsi>.

Not every well in the Beaumont Basin shows decreasing water levels every year. Some data points show sudden increases in water levels. As pointed out above, there could be many reasons for such data points, including data collection error, recording error, or an actual short-term increase in water levels due to a one-time phenomenon. It is clear from these hydrographs, however, that the long-term water level trend in the Beaumont Basin is still downward. The approximately 3,000 acre-feet that the Agency has recharged since 2003 (as of December 2007) has not significantly mitigated the overall basin overdraft and water level trend.

groundwater well is located. It is also important in devising management plans for groundwater basins.

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 overlies' 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 each 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.

7. Water Quality

7.1 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.

The Agency is a member of the Municipal Water Quality Investigation (MWQI) Special Project Committee (SPC) of the State Water Project Contractors Authority. The MWQI SPC is a group of State Water Contractors, primarily urban in nature, that have banded together to monitor water quality throughout the Delta and the SWP system so that management and operational strategies may be devised to take advantage of higher quality water when it is available. In this case, water quality primarily refers to salinity or total dissolved solids, but raw water is monitored for numerous contaminants.

About 25 million Californians depend on the State Water Project for supplemental water for domestic use. The SWP also supplies water for agriculture, industry, power generation, and recreation as well as many environmental uses for fish and wildlife. The SWP continually monitors water quality throughout the system using an automated network of recorders and field samples. The Devil Canyon monitoring station is the closest to the Agency and represents the quality of water the Agency receives from the system. Twenty-eight constituents are measured at the Devil Canyon monitoring station.

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 18** lists the monthly total dissolved solids (TDS) for 2004 through 2007 and **Figure 19** lists the annual average TDS for 1990 through 2007.

These figures show the variability of salinity within the State Water Project. The long-term average since 1990 appears to be approximately 250 parts per million, which is similar to the salinity of natural groundwater in the Beaumont Basin. The Agency, along with the Beaumont Basin Watermaster and the San Timoteo Watershed Management Authority, will continue to monitor the salinity of the Beaumont Basin and State Water Project Water.

In 2007, the Agency signed a cooperative agreement, or regional compact, along with a number of other importers and water rechargers in the Santa Ana River watershed (**Appendix B**). The purpose of this cooperative agreement is to prevent any deterioration of groundwater quality in the Santa Ana watershed by importing State Water Project water, especially with regard to salinity.

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The cooperative agreement, signed by a number of other water importers and rechargers under the umbrella of “Salinity Management Work Group”, attempts to prevent any degradation by ensuring that any new recharge facilities constructed in the watershed would only go online after extensive water quality modeling over a 20 year period.

There are two major components to the actions required in the cooperative agreement. The first is a baseline water quality study of the major groundwater basins within the Santa Ana watershed that all water importers would participate in. This water quality study would include water quality modeling, using pre-approved computer models, over a 20-year forward-looking period. This baseline water quality report would be repeated every few years.

The second component is additional water quality modeling unique to each proposed new recharge facility that would be performed as part of the CEQA document and circulated for review by other local water agencies to ensure the modeling is adequate and meets certain minimum standards. This modeling would project the impact of recharging State Water Project water in each proposed facility on the local groundwater basin looking 20 years into the future.

The alternative to such an arrangement would have been to require Waste Discharge Permits for each new recharge facility, in effect treating State Water Project water the same as treated sewage and recharge facilities the same as sewage treatment plants. The cooperative agreement was reached as a compromise to avoid implementing this plan.

A number of water agencies operating in the Santa Ana watershed already operate under what are termed “max benefit” rules; these includes agencies in the Chino Basin and the members of the San Timoteo Watershed Management Authority. These agencies have made other commitments to control salinity under their max benefit agreements and therefore are exempt from the water quality modeling required in the cooperative agreement. Details of such agreements are beyond the scope of this document. Information on them is available from the Santa Ana Regional Water Quality Control Board.

Another contaminant of concern in the region is nitrate. This is a contaminant that is in human and animal waste, as well as fertilizers. The nitrate level in State Water Project water is typically well under the ambient concentration of nitrate in the Beaumont Basin, so groundwater recharge using SWP water should not negatively impact nitrate in the Beaumont Basin. In fact, it should decrease the overall nitrate concentration in the basin because of dilution.

Less water quality data are available in other local basins; the Agency will continue to gather data over time to determine if any particular contaminants become problematic in those basins.

7.2 Groundwater Quality

The Agency, in cooperation with the USGS, is monitoring water quality in 38 wells in and around the Beaumont Storage Unit. **Figure 20** 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 and 2004, the most recent years available. As mentioned above, TDS and nitrates are the contaminants of particular interest in the region. TDS is a natural constituent of local groundwater and is a function of the local geology. 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>.

During 2006, elevated nitrates started to appear sporadically in one active production well in the upper reaches of the Beaumont Basin. This is a potential cause for concern for local water agencies, particularly Beaumont-Cherry Valley Water District, in the long term. Wellhead treatment for nitrates, if required at some point in the future, would be costly.

A study commissioned by the San Timoteo Watershed Management Authority Project Committee Number 1, conducted by Wildermuth Environmental, identified the source of these nitrates as septic tanks in the Cherry Valley area. The elevated nitrates have appeared occasionally over the past two years for a short period of time, followed by a return to background levels. The exact mechanism causing the nitrates to appear in a production well is not known. Most of the instances of elevated nitrates followed high rainfall events.

Based on the results of the study, Measure M was placed on the ballot in 2007 by the Beaumont Cherry Valley Water District for local residents to vote on whether the District should construct sewers in Cherry Valley. The measure was defeated.

A committee appointed by Riverside County Supervisor Marion Ashley was appointed in 2008 (after the period of this report) to review the nitrate issue in the Beaumont-Cherry Valley area and to make recommendations regarding potential sewerage of Cherry Valley. That committee is scheduled to forward its recommendations to Supervisor Ashley in early 2009.

Total Dissolved Solids (salinity) of local groundwater is currently in no danger of exceeding the Regional Board's Basin Plan Amendment for the Beaumont Basin, which is 330 parts per million. Currently, groundwater in the Beaumont Basin averages 250 parts per million or less. State Water Project water used to recharge the Beaumont Basin has approximately the same concentration, on average. A larger threat to the increased salinity of the Beaumont Basin is the planned use of recycled water, particularly for groundwater recharge. A number of water purveyors, including the Yucaipa Valley Water District, the Beaumont-Cherry Valley Water District, and the City of Banning,

have plans to use recycled water either for direct recharge, irrigation, or both. Use of recycled water for irrigation could impact the salinity of the basin due to return flows.

The salinity of recycled water in the area, if not desalted, averages over 400 parts per million. Thus the use of this could lead to increases in groundwater salinity. The maximum concentration of 330 parts per million cannot be exceeded; thus, local water agencies who use recycled water will have to determine how they will meet this standard over the long term.

8. References

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9. 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 Geronio 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 |

USGS United States Geological Survey

WWTPs Wastewater Treatment Plants

YVWD Yucaipa Valley Water District

10. Links to Related Websites

San Geronio Pass Water Agency (SGPWA) www.sgpwa.com

US Geological Survey (USGS) <http://waterdata.usgs.gov/nwis>

California Department of Water Resources <http://www.water.ca.gov>

San Bernardino County Water Resources Division www.co.san-bernardino.ca.us/trnsprtn/pwg

Riverside County Flood Control and Water Conservation District
www.floodcontrol.co.riverside.ca.us

National Climate Data Center (NCDC) www.ncdc.noaa.gov

Western Regional Climate Center (WRCC) www.wrcc.dri.edu

USGS Open-File Report - High-Resolution Seismic Reflection/Refraction Imaging from Interstate 10 to Cherry Valley Boulevard, Cherry Valley, Riverside County, California: Implications for Water Resources and Earthquake Hazards
<http://geopubs.wr.usgs.gov/open-file/of99-320/>

Beaumont Basin Watermaster www.beaumontwatermaster.org

San Timoteo Watershed Management Authority www.stwma.org

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

| 2000 | Basin | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 |
|-------------|------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| 5 | Banning | 262 | 270 | 179 | 424 | 586 | 839 | 1,103 | 2,381 | 857 | 1,266 | 1,175 | 1,310 |
| 7 | Banning Bench | 3,744 | 3,109 | 2,182 | 1,743 | 730 | 753 | 807 | 952 | 1,319 | 2,332 | 2,987 | 2,199 |
| 4,9 | Banning Canyon | 4,413 | 4,739 | 5,048 | 5,216 | 4,955 | 5,600 | 3,024 | 2,582 | 3,329 | 3,649 | 3,464 | 2,662 |
| 13,9 | Beaumont | 6,550 | 7,848 | 7,343 | 10,548 | 13,937 | 14,474 | 19,149 | 19,624 | 17,756 | 13,670 | 17,355 | 19,330 |
| 5 | Cabazon | 129 | 636 | 837 | 1,063 | 594 | 1,182 | 1,749 | 1,208 | 1,604 | 1,379 | 1,314 | 1,466 |
| 1,6 | Calimesa (2) | 1,025 | 1,603 | 1,548 | 815 | 1,635 | 1,689 | 1,557 | 1,725 | 1,535 | 1,575 | 1,445 | 1,532 |
| 3,9 | Edgar Canyon (1) | 3,989 | 4,156 | 4,376 | 4,480 | 3,979 | 2,926 | 3,039 | 2,549 | 2,759 | 2,766 | 3,872 | 2,760 |
| - | Millard Canyon | - | - | - | - | - | 256 | 1,366 | 675 | 823 | 595 | 707 | 842 |
| 1,4 | San Timoteo | 1,245 | 1,332 | 1,182 | 1,304 | 1,450 | 1,234 | 1,465 | 1,392 | 1,469 | 2,132 | 1,904 | 1,384 |
| 5 | Singleton | 595 | 599 | 467 | 579 | 558 | 547 | 535 | 345 | 483 | 636 | 645 | 666 |
| | South Beaumont | 109 | 77 | 68 | 78 | 77 | 77 | 92 | 95 | 92 | 85 | 83 | 94 |
| | Whitewater (3) | | | | | | | | | | | | 1,127 |
| 28,5 | Totals | 22,061 | 24,369 | 23,230 | 26,250 | 28,501 | 29,577 | 33,886 | 33,528 | 32,026 | 30,085 | 34,951 | 35,372 |

Notes:

Amounts shown are rounded to nearest acre-foot

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

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

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

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

BHMWC: (3) New to report in 2007. Includes reporting of SCE diversions by BHMWC

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

| | 1999 | Owner | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 |
|---|-------|--|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | | Albor Properties III, LP | | | | | | | | | | | 170 | 175 |
| | | Arrowhead Mountain Spring Water Co. | - | - | - | - | - | 256 | 1,366 | 675 | 823 | 595 | 707 | 842 |
| 3 | 24 | Banning Heights Mutual Water Co. (1) | 42 | 27 | 128 | 242 | 120 | 153 | 275 | 207 | 32 | 73 | 21 | 1,149 |
| 0 | 9,03 | Banning, City of | 9,046 | 8,959 | 8,420 | 9,037 | 9,490 | 10,338 | 9,526 | 10,053 | 8611 | 8863 | 9,550 | 9,021 |
| 1 | 5,96 | Beaumont-Cherry Valley Water District | 5,251 | 5,369 | 4,951 | 5,968 | 6,392 | 5,470 | 8,616 | 9,059 | 8457 | 6980 | 11,748 | 13,031 |
| | | Beckman, Walt | | | | | | | | | | | 116 | 83 |
| 0 | 1 | Brinton, Barbara | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 0 | 10 |
| 3 | 94 | Cabazon County Water District | 12 | 441 | 728 | 949 | 477 | 1,042 | 1,434 | 882 | 1,092 | 915 | 824 | 780 |
| 3 | 83 | California Oak Valley Management | 863 | 852 | 558 | 830 | 718 | 684 | 925 | 950 | 852 | 991 | 878 | 742 |
| | | Desert Hills Premium Outlets | - | - | - | - | - | 136 | 146 | 153 | 169 | 154 | 142 | 143 |
| 3 | 7 | Dowling, Frances M. Jr. | 109 | 77 | 68 | 78 | 77 | 77 | 92 | 95 | 92 | 85 | 83 | 94 |
| | | East Valley Golf Club LLC | | | | | | | | | | | | 1,484 |
| 0 | 16 | El Casco Lake Ranch | 160 | 160 | 160 | 160 | 160 | 160 | 160 | 160 | 160 | 160 | 160 | 160 |
| 2 | 47 | Hudson, Merton Lonnie | 405 | 460 | 472 | 475 | 385 | 510 | 465 | 430 | 430 | 430 | 435 | 445 |
| 7 | 26 | Illy, Katharina | 261 | 267 | 267 | 267 | 267 | 267 | 267 | 267 | 267 | 267 | 267 | 265 |
| 7 | 38 | Los Rios Inc & The Wildlands Conservancy | - | 579 | 717 | 383 | 359 | 250 | 242 | 226 | 194 | 343 | 343 | 145 |
| | | Manheim, Manheim & Berman | - | - | - | 92 | 122 | 151 | 164 | 163 | 163 | 165 | | |
| 0 | 54 | Merlin Properties, LLC | 525 | 540 | 550 | 545 | 535 | 530 | 530 | 520 | 500 | 500 | 100 | 100 |
| | | Mission Spring Water District | - | - | - | - | - | - | 165 | 169 | 157 | 171 | 190 | 206 |
| 1 | 42 | Oak Valley Partners | 341 | 312 | 311 | 421 | 446 | 401 | 383 | 453 | 430 | 350 | 312 | 312 |
| 5 | 4 | Perisits, Jack | 40 | 46 | 46 | 46 | 40 | 40 | 40 | 40 | 40 | 40 | 0 | 0 |
| 7 | 26 | Plantation on the Lake | 294 | 263 | 237 | 264 | 289 | 286 | 280 | 300 | 310 | 320 | 351 | 345 |
| 0 | 17 | Rancho Calimesa Mobile Home Ranch | 170 | 170 | 170 | 170 | 150 | 198 | 206 | 202 | 202 | 60 | 59 | 60 |
| | | Riley's Family Trust | - | - | - | - | - | - | 107 | 11 | 121 | 160 | | |
| | | Riverside Land Conservancy | | | | | | | | | | | 5 | 5 |
| 9 | 11 | Robertson's Ready Mix | 117 | 195 | 109 | 114 | 117 | 4 | 4 | 4 | 186 | 139 | 158 | 337 |
| 5 | 15 | Sharondale Mesa Owners Association | 190 | 190 | 166 | 197 | 167 | 190 | 185 | 182 | 159 | 181 | 189 | 183 |
| | | Shiloh's Hill LLC | | | | | | | | | | | 146 | 150 |
| | 38 | Southern California PGA | - | - | - | 386 | 1,688 | 1,325 | 1,227 | 1,382 | 1,368 | 1,227 | 1,823 | |
| 1 | 1,66 | South Mesa Water Co. | 1,603 | 2,429 | 2,141 | 1,660 | 2,609 | 2,583 | 2,745 | 2,645 | 2,679 | 2,551 | 2,711 | 2,839 |
| 5 | 5 | Summit Cemetery District | 55 | 35 | 55 | 55 | 55 | 65 | 65 | 65 | 65 | 65 | 65 | 65 |
| 5 | 13 | Sun Cal Companies | 176 | 204 | 145 | 132 | 97 | 82 | 47 | 49 | 89 | 839 | 555 | 0 |
| 2 | 1,82 | Sunny-Cal Egg & Poultry, Inc. | 504 | 1,110 | 1,422 | 1,857 | 1,892 | 2,020 | 1,621 | 1,621 | 1,626 | 1,243 | 50 | 50 |
| 7 | 10 | The Diocese of San Bernardino | 99 | 90 | 97 | 105 | 114 | 114 | 140 | 140 | 140 | 70 | 70 | 70 |
| | | Lane, Christie | - | - | - | - | - | - | - | 7 | 7 | 1 | 0 | 0 |
| | 38 | Wildlands Conservancy, The | 153 | 205 | - | 386 | 381 | 433 | 460 | 317 | 462 | 283 | 301 | 9 |
| 2 | 1,42 | Yucaipa Valley Water District | 1,635 | 1,379 | 1,302 | 1,421 | 1,344 | 1,802 | 1,993 | 2,091 | 2,134 | 1,854 | 2,422 | 2,072 |
| 0 | 28,21 | Totals | 22,061 | 24,369 | 23,230 | 26,250 | 28,501 | 29,577 | 33,886 | 33,528 | 32,027 | 30,085 | 34,951 | 35,372 |

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) 2007 amount includes reporting of SCE diversions by BHMWC

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Table 2: Groundwater Production in San Gorgonio Pass Water Agency by Purveyor (1996 – 2007 as reported)

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(i)

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

| 1998 | Owner | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 |
|-----------------------------|---|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| BANNING BASIN | | | | | | | | | | | | | |
| 179 | Banning, City of | 262 | 270 | 179 | 424 | 586 | 839 | 1,103 | 2,381 | 857 | 1,266 | 1,175 | 1,310 |
| 179 | TOTALS FOR BANNING BASIN | 262 | 270 | 179 | 424 | 586 | 839 | 1,103 | 2,381 | 857 | 1,266 | 1,175 | 1,310 |
| BANNING BENCH BASIN | | | | | | | | | | | | | |
| 2,117 | Banning, City of | 3,679 | 3,064 | 2,117 | 1,678 | 665 | 678 | 732 | 877 | 1,244 | 2,257 | 2,922 | 2,124 |
| 10 | Brinton, Barbara | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 0 | 10 |
| 55 | Summit Cemetery District | 55 | 35 | 55 | 55 | 55 | 65 | 65 | 65 | 65 | 65 | 65 | 65 |
| 2,182 | TOTALS FOR BANNING BENCH BASIN | 3,744 | 3,109 | 2,182 | 1,743 | 730 | 753 | 807 | 952 | 1,319 | 2,332 | 2,987 | 2,199 |
| BANNING CANYON BASIN | | | | | | | | | | | | | |
| 128 | Banning Heights Mutual Water Co. | 42 | 27 | 128 | 242 | 120 | 153 | 275 | 207 | 32 | 73 | 21 | 22 |
| 4,920 | Banning, City of | 4,371 | 4,712 | 4,920 | 4,974 | 4,835 | 5,447 | 2,749 | 2,368 | 3,290 | 3,575 | 3,443 | 2,640 |
| 0 | Lane, Christie | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 7 | 1 | 0 | 0 |
| 5,048 | TOTALS FOR BANNING CANYON BASIN | 4,413 | 4,739 | 5,048 | 5,216 | 4,955 | 5,600 | 3,024 | 2,582 | 3,329 | 3,649 | 3,464 | 2,662 |
| BEAUMONT BASIN | | | | | | | | | | | | | |
| 0 | Albor Properties III, LP | 0 | 0 | 0 | 92 | 122 | 151 | 164 | 163 | 163 | 165 | 170 | 175 |
| 1,204 | Banning, City of (1) | 734 | 913 | 1,204 | 1,961 | 3,404 | 3,374 | 4,942 | 4,427 | 3,220 | 1,765 | 2,010 | 2,947 |
| 1,905 | Beaumont-Cherry Valley Water District (2) | 1,907 | 2,581 | 1,905 | 2,958 | 3,768 | 3,971 | 7,088 | 7,692 | 7,103 | 5,607 | 9,200 | 11,096 |
| | Walt Beckman | | | | | | | | | | | 116 | 83 |
| 558 | California Oak Valley Management | 863 | 852 | 558 | 830 | 718 | 684 | 925 | 950 | 852 | 991 | 878 | 742 |
| 550 | Merlin Properties, LLC | 525 | 540 | 550 | 545 | 535 | 530 | 530 | 520 | 500 | 500 | 100 | 100 |
| 311 | Oak Valley Partners | 341 | 312 | 311 | 421 | 446 | 401 | 383 | 453 | 430 | 350 | 312 | 312 |
| 237 | Plantation on the Lake | 294 | 263 | 237 | 264 | 289 | 286 | 280 | 300 | 310 | 320 | 351 | 345 |
| 170 | Rancho Calimesa Mobile Home Ranch | 170 | 170 | 170 | 170 | 150 | 198 | 206 | 202 | 202 | 60 | 59 | 60 |
| 166 | Sharondale Mesa Owners Association | 190 | 190 | 166 | 197 | 167 | 190 | 185 | 182 | 158 | 181 | 189 | 183 |
| 0 | East Valley Golf Club LLC | 0 | 0 | 0 | 386 | 1,688 | 1,325 | 1,227 | 1,382 | 1,368 | 1,227 | 1,823 | 1,484 |
| 1,366 | Sunny-Cal Egg & Poultry, Inc. | 504 | 1,063 | 1,366 | 1,731 | 1,762 | 1,876 | 1,475 | 1,475 | 1,477 | 1,153 | 50 | 50 |
| 97 | Diocese of San Bernardino, The | 99 | 90 | 97 | 105 | 114 | 114 | 140 | 140 | 140 | 70 | 70 | 70 |
| 779 | Yucaipa Valley Water District | 923 | 874 | 779 | 888 | 774 | 1,374 | 1,604 | 1,738 | 1,833 | 1,281 | 2,027 | 1,683 |
| 7,343 | TOTALS FOR BEAUMONT BASIN | 6,550 | 7,848 | 7,343 | 10,548 | 13,937 | 14,474 | 19,149 | 19,624 | 17,756 | 13,670 | 17,355 | 19,330 |
| CABAZON BASIN | | | | | | | | | | | | | |
| 728 | Cabazon Water District | 12 | 441 | 728 | 949 | 477 | 1,042 | 1,434 | 882 | 1,092 | 915 | 824 | 780 |
| 0 | Desert Hills Premium Outlets | 0 | 0 | 0 | 0 | 0 | 136 | 146 | 153 | 169 | 154 | 142 | 143 |
| 0 | Mission Springs Water District | 0 | 0 | 0 | 0 | 0 | 0 | 165 | 169 | 157 | 171 | 190 | 206 |
| 109 | Robertson's Ready Mix | 117 | 195 | 109 | 114 | 117 | 4 | 4 | 4 | 186 | 139 | 158 | 337 |
| 837 | TOTALS FOR CABAZON BASIN | 129 | 636 | 837 | 1,063 | 594 | 1,182 | 1,749 | 1,208 | 1,604 | 1,379 | 1,314 | 1,466 |
| CALIMESA BASIN | | | | | | | | | | | | | |
| 267 | Illy, Katharina | 261 | 267 | 267 | 267 | 267 | 267 | 267 | 267 | 267 | 267 | 267 | 265 |
| 46 | Perisits, Jack | 40 | 46 | 46 | 46 | 40 | 40 | 40 | 40 | 40 | 40 | 0 | 0 |
| 797 | South Mesa Water Co. | 99 | 862 | 797 | 69 | 858 | 1,044 | 952 | 1,117 | 976 | 782 | 882 | 954 |
| 438 | Yucaipa Valley Water District | 625 | 428 | 438 | 433 | 470 | 338 | 298 | 301 | 252 | 486 | 296 | 313 |
| 1,548 | TOTALS FOR CALIMESA BASIN | 1,025 | 1,603 | 1,548 | 815 | 1,635 | 1,689 | 1,557 | 1,725 | 1,535 | 1,575 | 1,445 | 1,532 |

| | |
|--|--|
| San Gorgonio Totals by Non-Verified (1) | San Gorgonio Pass Water Agency Totals by Owner by Basin Non-Verified Production Data (in acre feet) |
|--|--|

| 1998 | Owner | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 |
|-----------------------------|--|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| EDGAR CANYON BASIN | | | | | | | | | | | | | |
| 3,102 | Beaumont-Cherry Valley Water District | 3,344 | 2,835 | 3,102 | 3,136 | 2,754 | 1,643 | 1,674 | 1,513 | 1,503 | 1,463 | 2,548 | 1,935 |
| 472 | Hudson, Merton Lonnie | 405 | 460 | 472 | 475 | 385 | 510 | 465 | 430 | 430 | 430 | 435 | 445 |
| 717 | Los Rios Inc & The Wildlands Conservancy | 0 | 579 | 717 | 383 | 359 | 250 | 242 | 226 | 194 | 343 | 343 | 145 |
| 0 | Shiloh's Hill LLC | 0 | 0 | 0 | 0 | 0 | 0 | 107 | 11 | 121 | 160 | 146 | 150 |
| 0 | Wildlands Conservancy, The | 153 | 205 | 0 | 386 | 381 | 433 | 460 | 317 | 462 | 283 | 301 | 9 |
| 85 | Yucaipa Valley Water District | 87 | 77 | 85 | 100 | 100 | 90 | 91 | 52 | 49 | 87 | 99 | 76 |
| 4,376 | TOTALS FOR EDGAR CANYON BASIN | 3,989 | 4,156 | 4,376 | 4,480 | 3,979 | 2,926 | 3,039 | 2,549 | 2,759 | 2,766 | 3,872 | 2,760 |
| MILLARD CANYON BASIN | | | | | | | | | | | | | |
| 0 | Arrowhead Mountain Spring Water Co. | 0 | 0 | 0 | 0 | 0 | 256 | 1,366 | 675 | 823 | 595 | 707 | 842 |
| 0 | TOTALS FOR MILLARD CANYON BASIN | 0 | 0 | 0 | 0 | 0 | 256 | 1,366 | 675 | 823 | 595 | 707 | 842 |
| SAN TIMOTEO BASIN | | | | | | | | | | | | | |
| 160 | El Casco Lake Ranch | 160 | 160 | 160 | 160 | 160 | 160 | 160 | 160 | 160 | 160 | 160 | 160 |
| 145 | SunCal Companies | 176 | 204 | 145 | 132 | 97 | 82 | 47 | 49 | 89 | 839 | 555 | 0 |
| | Riverside Land Conservancy | | | | | | | | | | | 5 | 5 |
| 877 | South Mesa Water Co. | 909 | 968 | 877 | 1,012 | 1,193 | 992 | 1,258 | 1,183 | 1,220 | 1,133 | 1,184 | 1,219 |
| 1,182 | TOTALS FOR SAN TIMOTEO BASIN | 1,245 | 1,332 | 1,182 | 1,304 | 1,450 | 1,234 | 1,465 | 1,392 | 1,469 | 2,132 | 1,904 | 1,384 |
| SINGLETON BASIN | | | | | | | | | | | | | |
| 467 | South Mesa Water Co. | 595 | 599 | 467 | 579 | 558 | 547 | 535 | 345 | 483 | 636 | 645 | 666 |
| 0 | Yucaipa Valley Water District | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 467 | TOTALS FOR SINGLETON BASIN | 595 | 599 | 467 | 579 | 558 | 547 | 535 | 345 | 483 | 636 | 645 | 666 |
| SOUTH BEAUMONT BASIN | | | | | | | | | | | | | |
| 68 | Dowling, Frances M. Jr. | 109 | 77 | 68 | 78 | 77 | 77 | 92 | 95 | 92 | 85 | 83 | 94 |
| 68 | TOTALS FOR SOUTH BEAUMONT BASIN | 109 | 77 | 68 | 78 | 77 | 77 | 92 | 95 | 92 | 85 | 83 | 94 |
| WHITEWATER BASIN | | | | | | | | | | | | | |
| 0 | Banning Heights Mutual Water Co. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,127 |
| 0 | TOTALS FOR WHITEWATER BASIN | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,127 |
| 23,230 | TOTALS FOR ALL BASINS | 22,061 | 24,369 | 23,230 | 26,250 | 28,501 | 29,577 | 33,886 | 33,528 | 32,026 | 30,085 | 34,951 | 35,372 |

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 amount produced by Beaumont Cherry Valley W.D. for City of Banning from shared wells

(2) Excludes amount produced by Beaumont Cherry Valley W.D. for City of Banning from shared wells

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

| Calendar Year | Amount in Acre-Feet |
|--------------------------|--------------------------------|
| 2003* | 116 |
| 2004 | 814 |
| 2005 | 687 |
| 2006** | 4420 |
| 2007** | 4815 |

*Start Up / Partial Year

**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 Gorgonio 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-04 | 363 | 105 | 65 | 47 | 1 | 0.86 |
| Feb-04 | 263 | 68 | 47 | 42 | 4 | 1.06 |
| Mar-04 | 233 | 51 | 38 | 41 | 4 | 0.96 |
| Apr-04 | 217 | 46 | 41 | 42 | 5 | 0.76 |
| May-04 | 238 | 64 | 45 | 42 | <1 | 0.67 |
| Jun-04 | 275 | 72 | 51 | 41 | 1 | 0.61 |
| Jul-04 | 250 | 66 | 47 | 37 | 2 | 0.56 |
| Aug-04 | 217 | 60 | 41 | 26 | 1 | 0.33 |
| Sep-04 | 206 | 58 | 38 | 24 | 1 | 0.36 |
| Oct-04 | 241 | 70 | 55 | 28 | 167 | 0.67 |
| Nov-04 | 274 | 75 | 54 | 35 | 2 | 0.80 |
| Dec-04 | 265 | 77 | 53 | 37 | 3 | 0.86 |
| Jan-05 | 207 | 54 | 38 | 28 | 6 | 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 | 0.82 |
| Jun-05 | NR | 54 | 41 | 39 | 5 | 0.72 |
| Jul-05 | 173 | 36 | 29 | 28 | 5 | 0.54 |
| Aug-05 | 181 | 42 | 31 | 28 | 1 | 0.43 |
| Sep-05 | 185 | 46 | 34 | 24 | 2 | 0.28 |
| Oct-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 | 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 |

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)**

| | | | | | | |
|--------|-----|----|----|----|---|------|
| 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 |

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

| Well | Basin | Well Identification | Date of Analysis | Specific Conductance uS/cm @ 25C | pH std units | Nitrite+Nitrate mg/L as N | Sodium mg/L | Chloride mg/L | Sulfate mg/L | Alkalinity mg/L as CaCO ³ |
|------|-------------|---------------------|------------------|-------------------------------------|-----------------|------------------------------|----------------|------------------|-----------------|---|
| 431 | Beaumont | 2S/1W28A1 | 7/14/2003 | 431 | 7.5 | 7.54 | 17.4 | 13.7 | 18.3 | 157 |
| 296 | Beaumont | 3S/1W03K2 | 6/23/2004 | 296 | 7.9 | 1.3 | 26.8 | 9.74 | 7.8 | 136 |
| 311 | Banning | 3S/1E17C1 | 7/27/2005 | 311 | 8.5 | 1.49 | 47.7 | 13.9 | 8.7 | 121 |
| 330 | Banning | 3S/1E18D1 | 8/29/2006 | 330 | 8.4 | 2.25 | 52.7 | 15.9 | 2.3 | 138 |
| 413 | Cabazon | 3S/2E09E1 | 8/29/2006 | 413 | 7.7 | 2.05 | 21.8 | 9.44 | 19.1 | 177 |
| 953 | San Timoteo | 2S/2W28C2 | 6/14/2000 | 953 | 7.6 | 0.05 | 123 | 68 | 32.5 | 392 |
| 518 | 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.

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

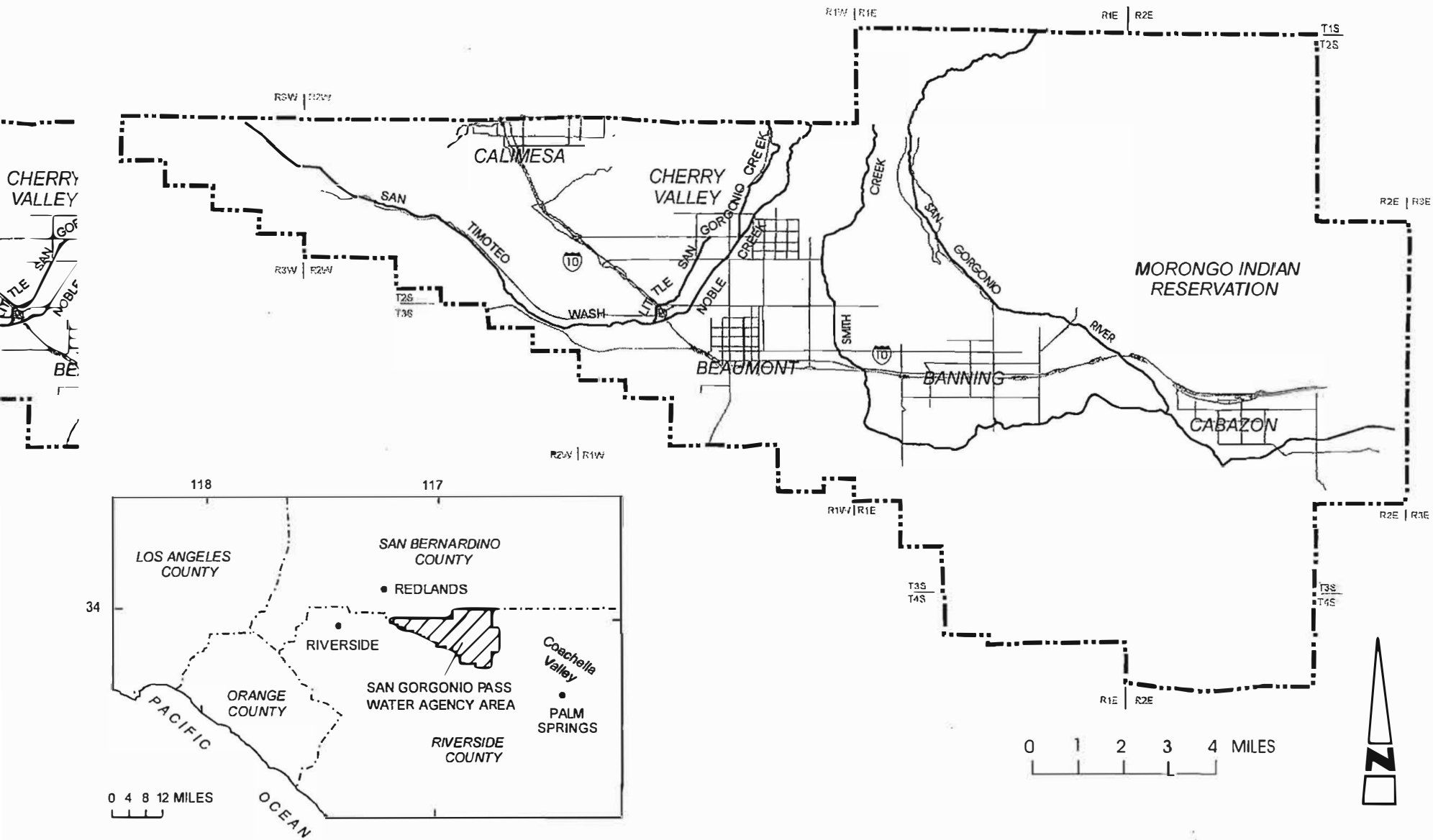


Figure 1: San Gorgonio Pass Water Agency

SCE TRANS BASIN DIVERSION

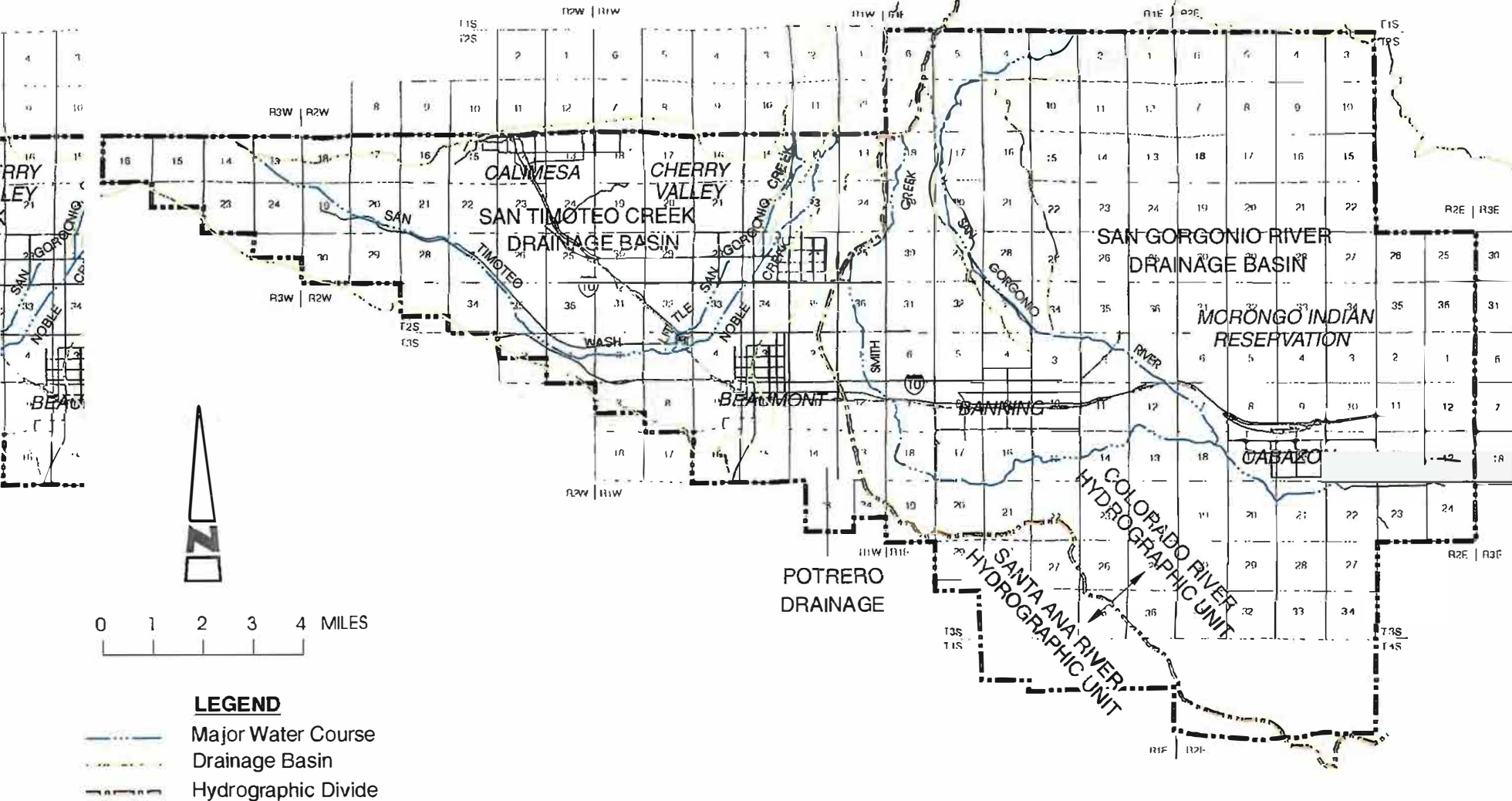
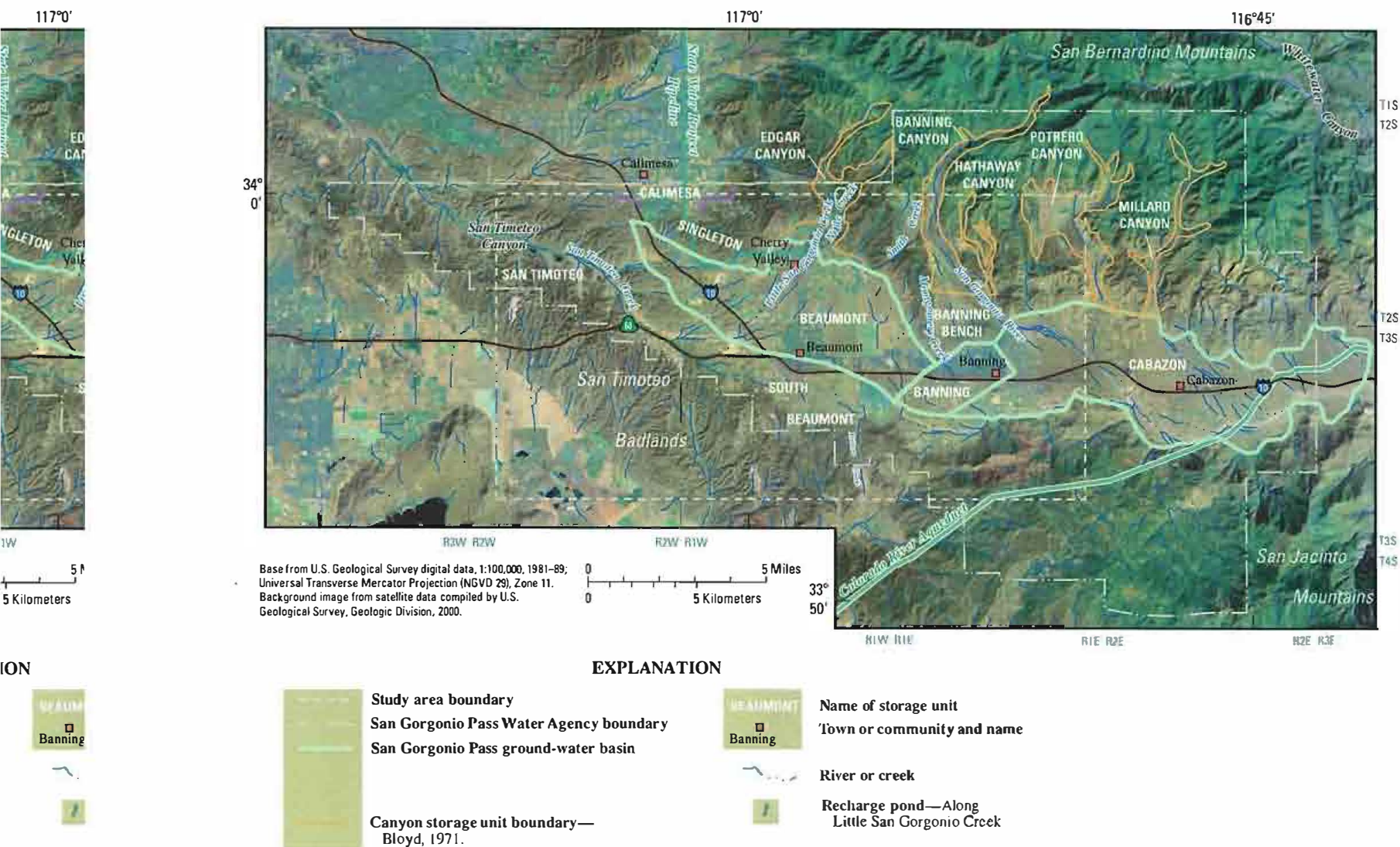


Figure 2: Drainage Basins and Principal Streams

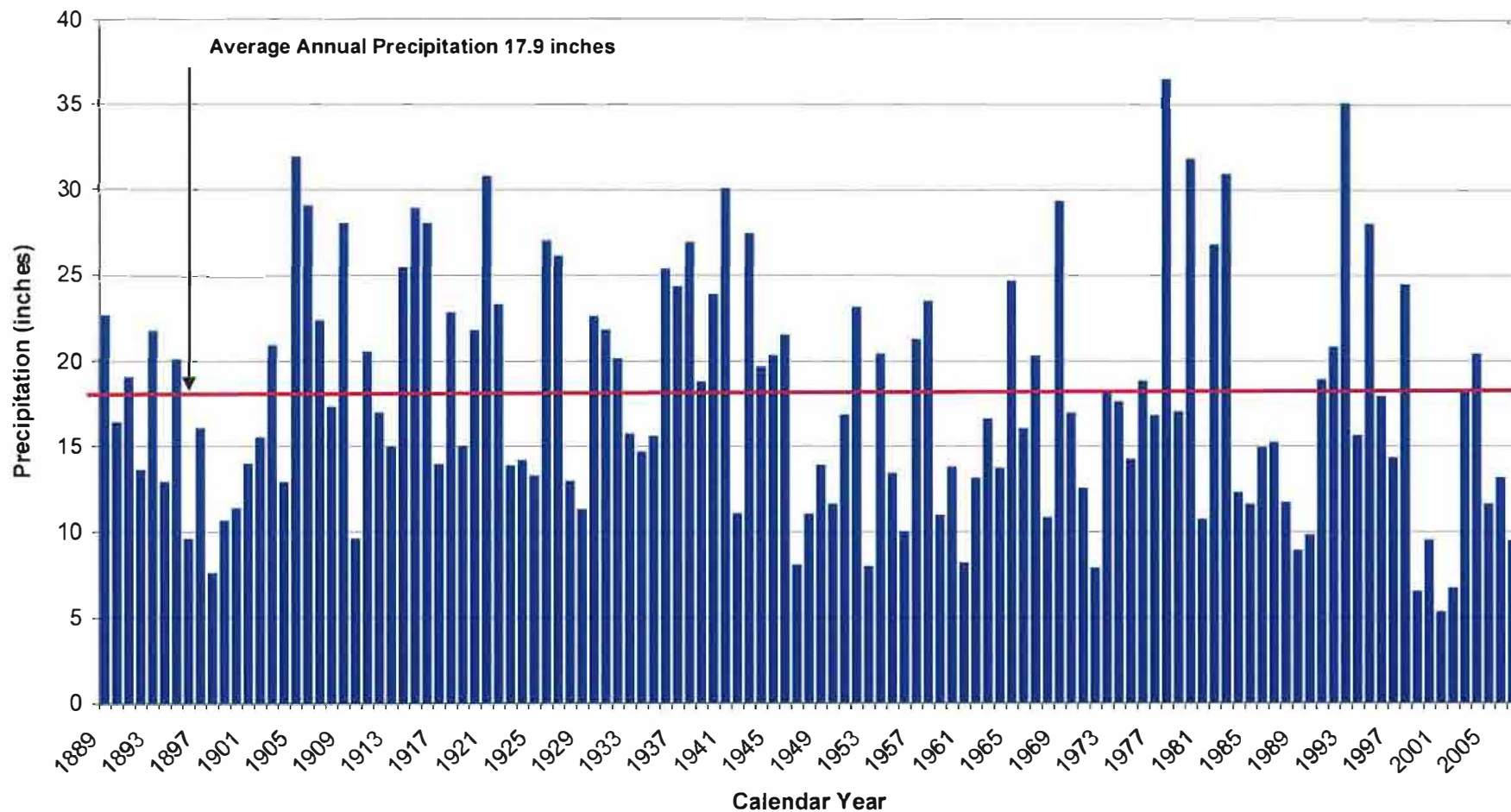


Source: USGS Scientific Investigations Report 2006-5026

Figure 3: Groundwater Storage Units

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Annual

Long Term Mean Annual Precipitation
Beaumont Station 3S/1W-10P, Elevation 2613"
Mean Annual Precipitation = 17.9

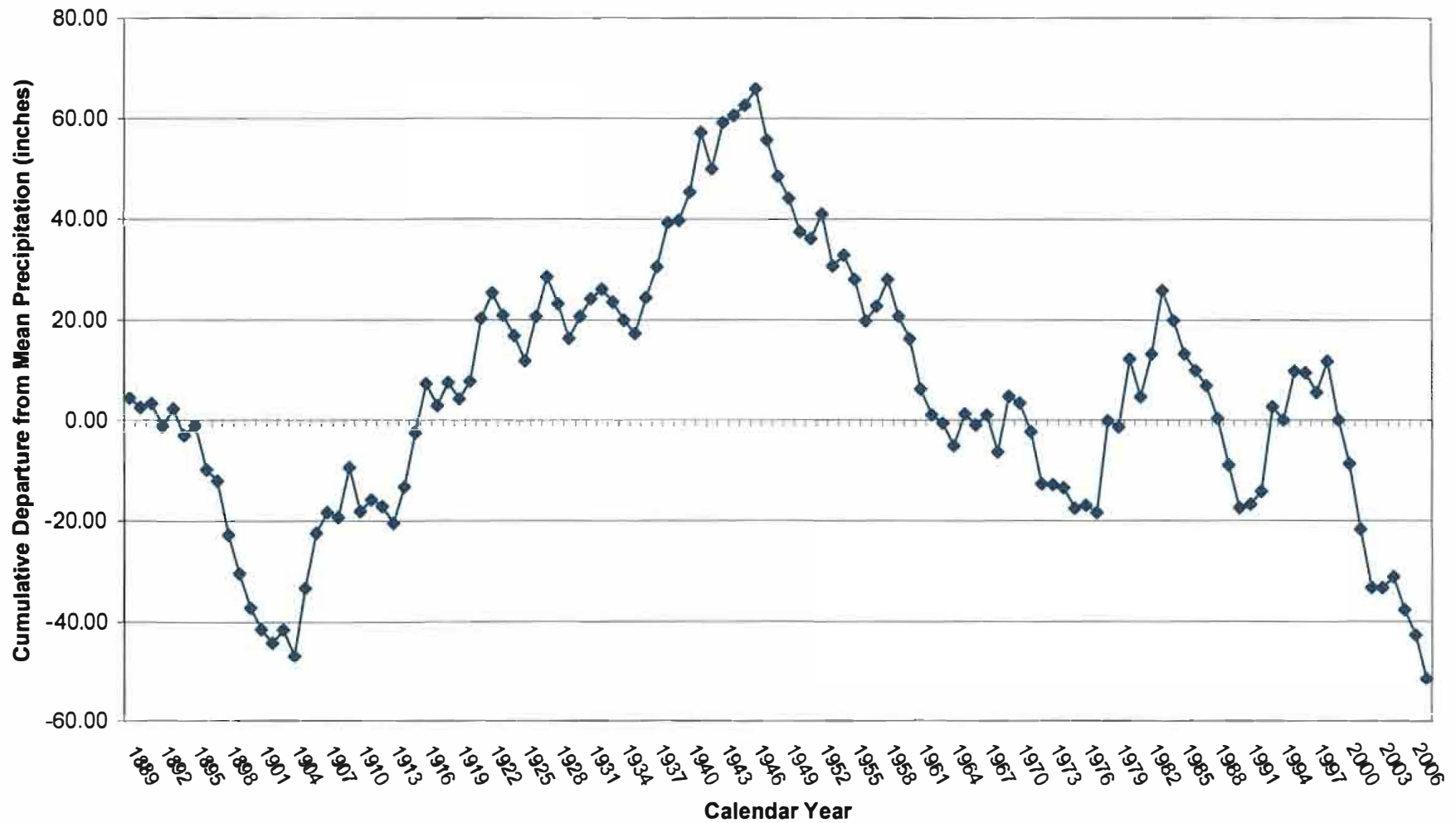


Source: Riverside County Flood Control and Water Conservation District

Figure 4: Long-Term Mean Annual Precipitation at Beaumont

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**Cumulative Departure from Mean Annual Precipitation
Beaumont Station, Elevation 2613'
Mean Annual Precipitation = 17.9"**



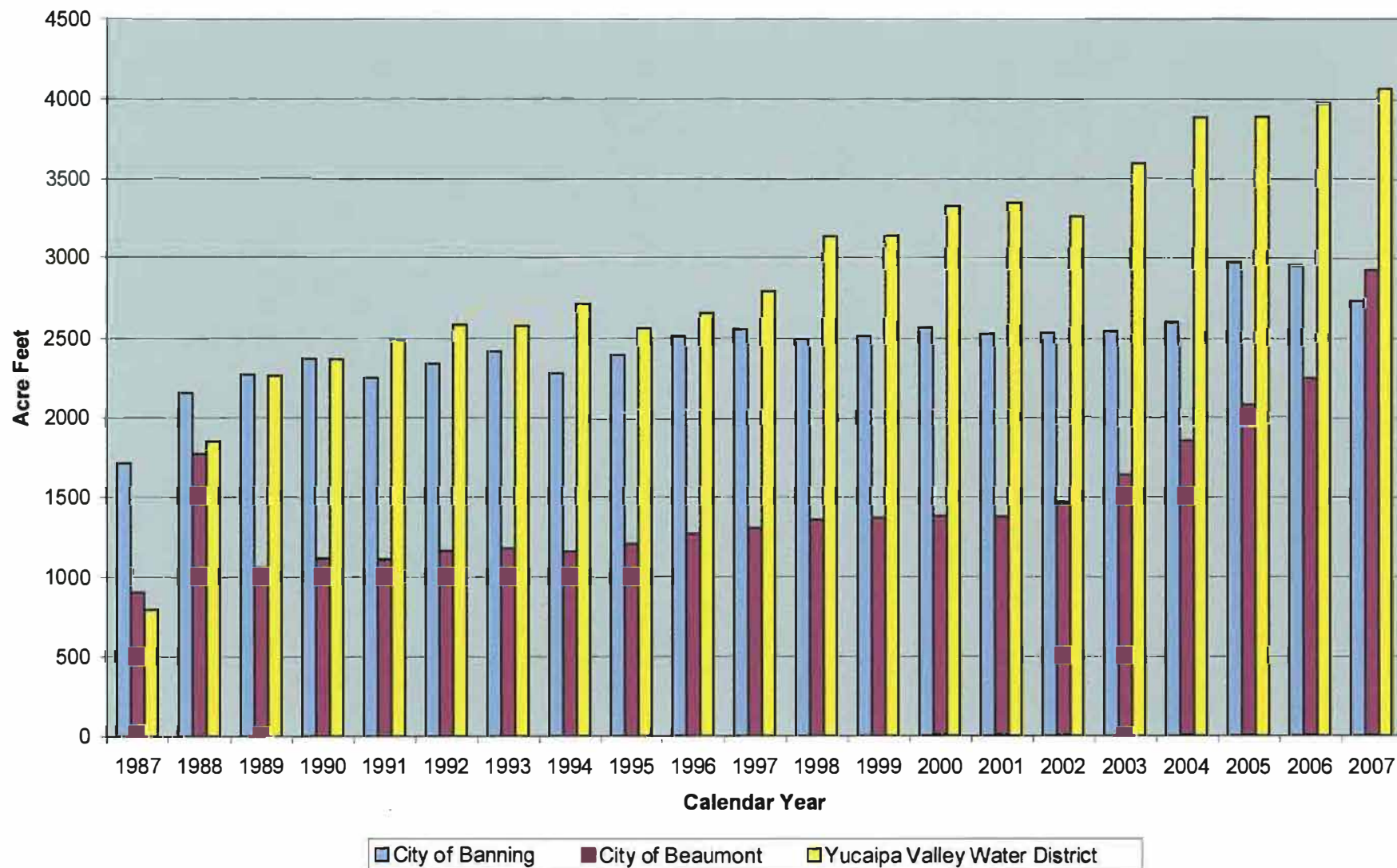
Source: Riverside County Flood Control and Water Conservation District

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Figure 5: Cumulative Departure from Mean Annual Precipitation at Beaumont

e Total

Wastewater Discharge Totals by Discharger by Calendar Year



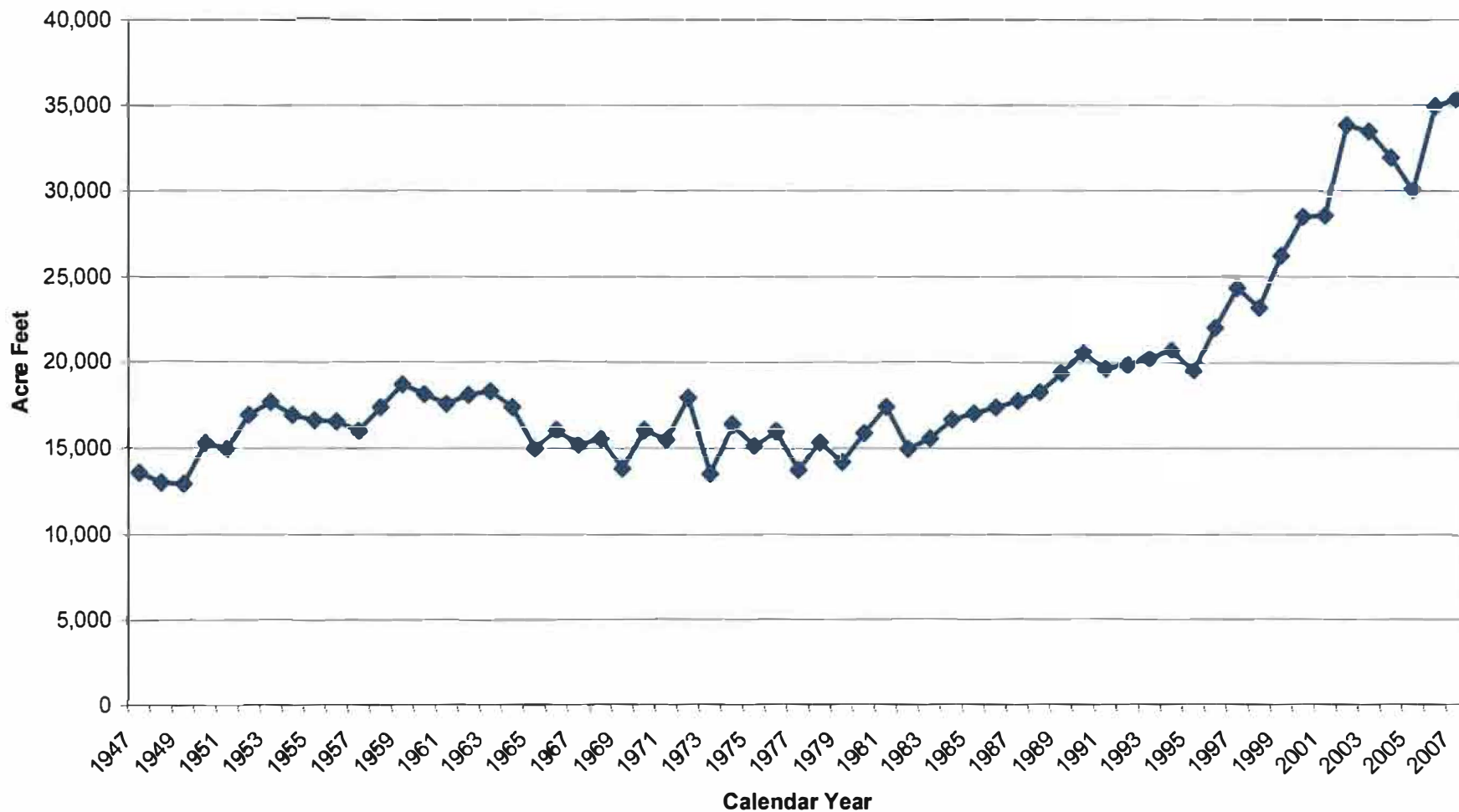
City of

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Figure 6: Wastewater Discharge Totals by Discharger by Calendar Year

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**San Gorgonio Pass Water Agency
Production All Basins
1947 through 2007**

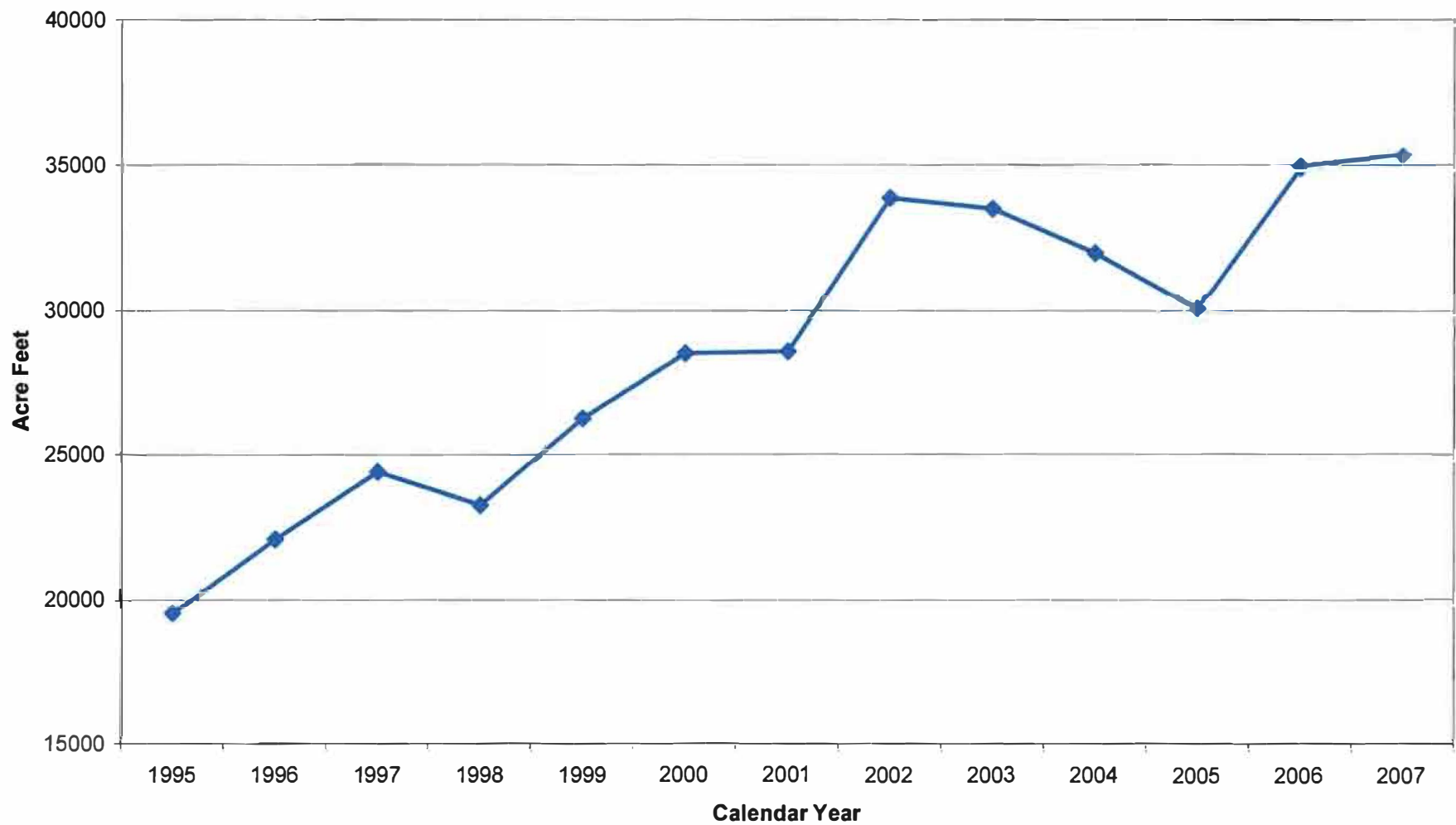


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Figure 7: Historical Groundwater Production All Basins 1947 through 2007 (as reported)

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**San Geronio Pass Water Agency
Production All Basins
1995 through 2007**



roduction

Figure 8: Historical Groundwater Production All Basins 1995 through 2007 (as reported)

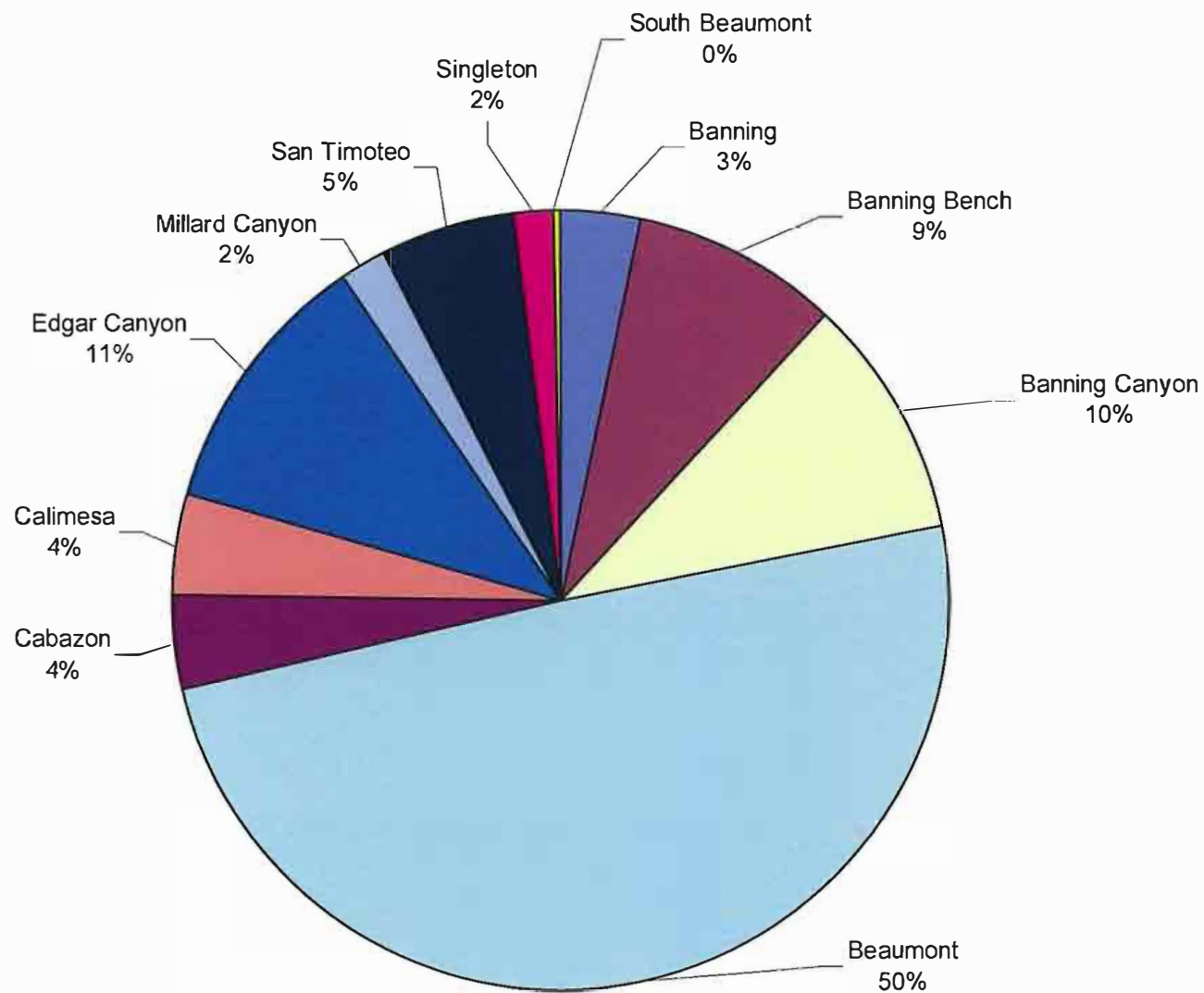
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Total Production By Storage Unit 2006



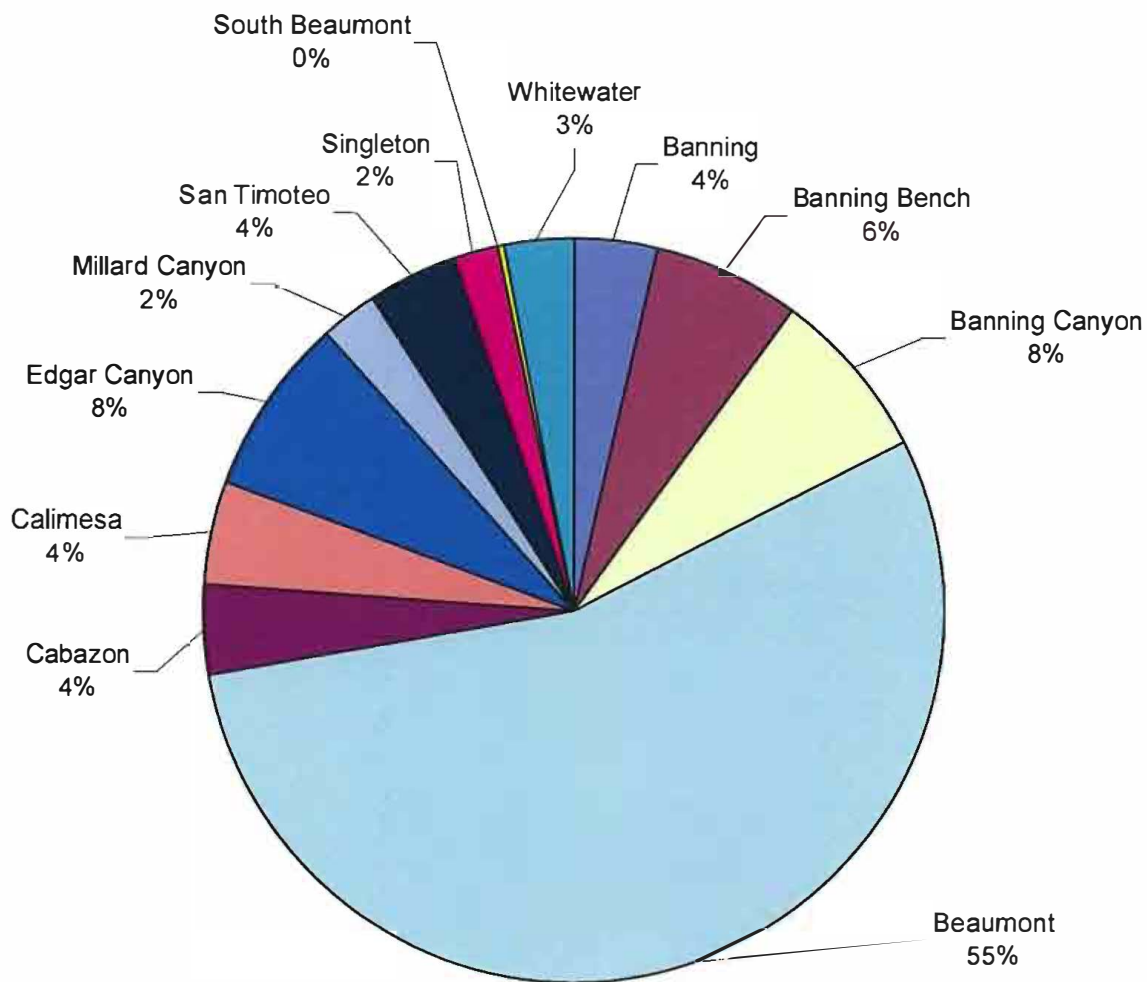
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Figure 9: Total Agency Production by Storage Unit (as reported) 2006

product



Total Production By Storage Unit 2007



production

Figure 10: Total Agency Production by Storage Unit (as reported) 2007

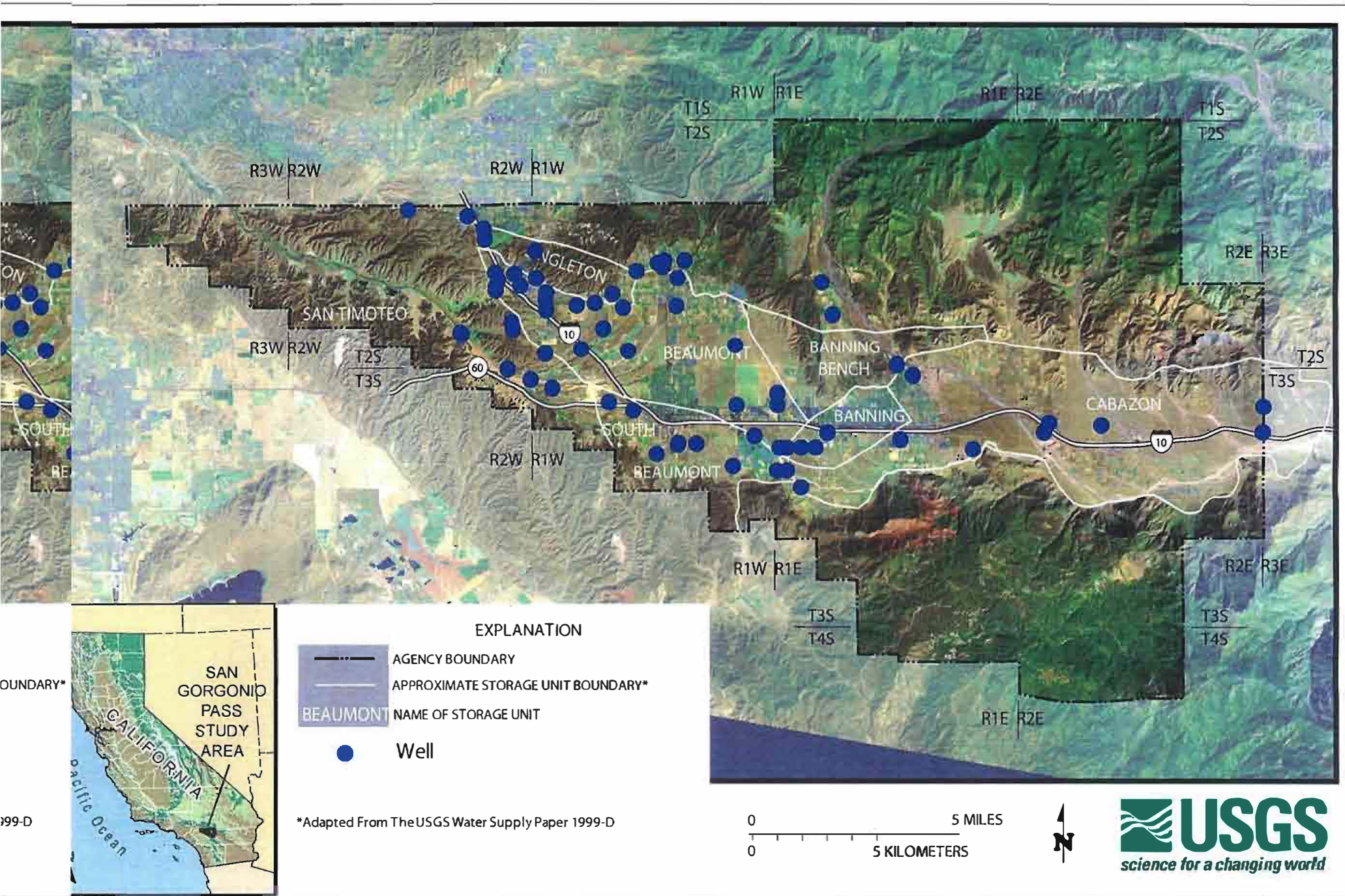
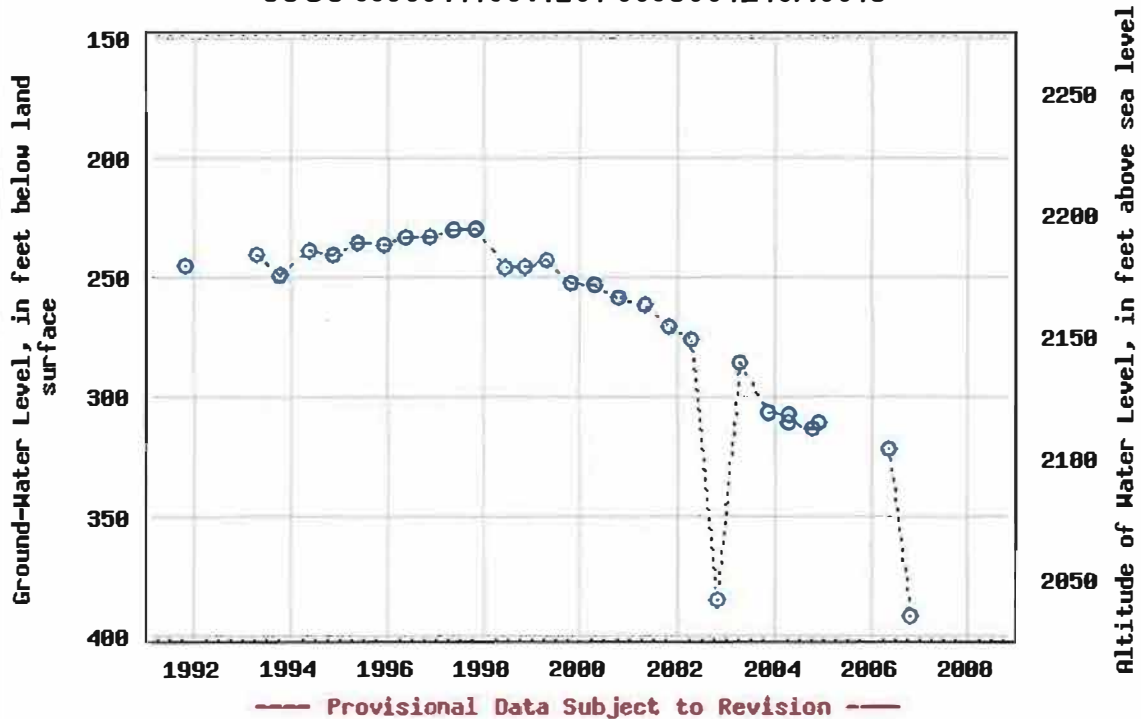


Figure 11: Water Level Network in the San Geronio Pass Area



USGS 335504116544201 003S001E18A001S



USGS 335504116552601 003S001E18C001S

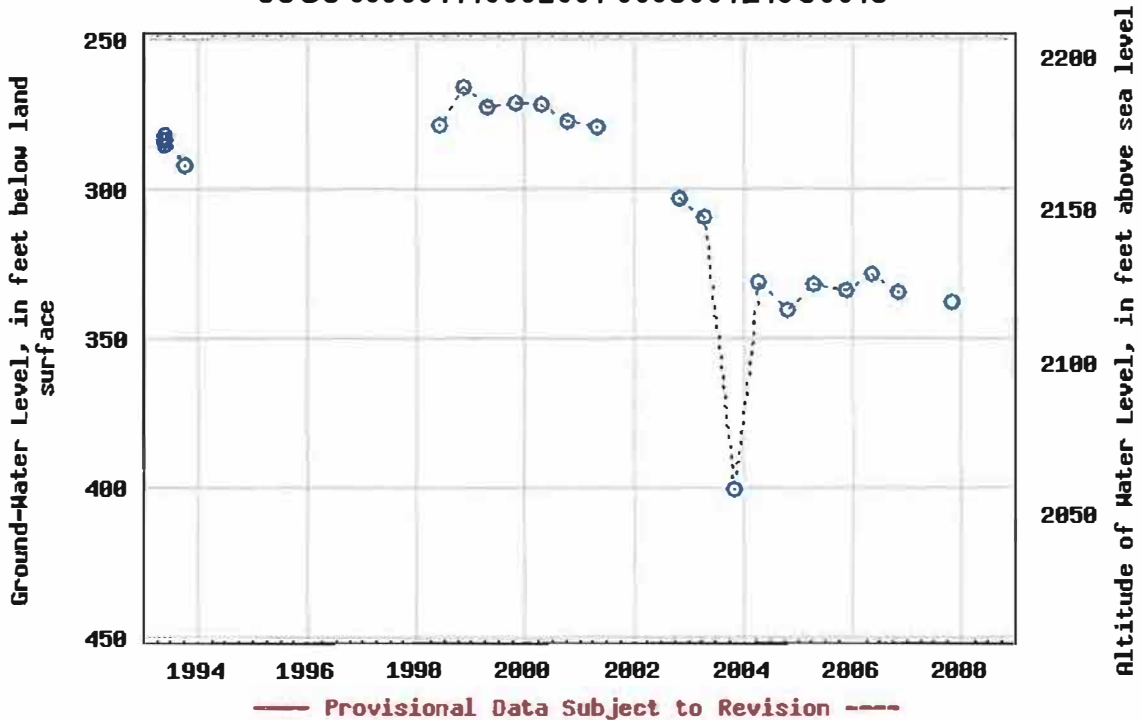
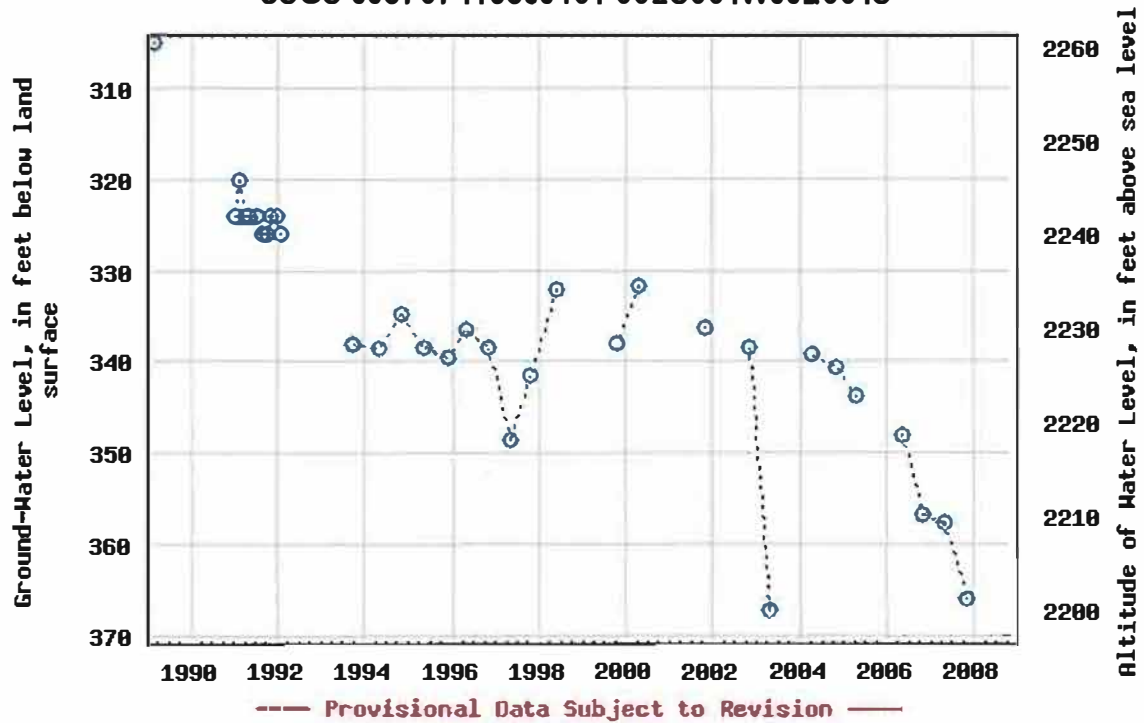


Figure 12: Groundwater Hydrographs – Banning Basin
3S/1E-18A01 and 3S/1E-18C01



USGS 335707116593401 002S001W33L001S



USGS 335807116582201 002S001W27L001S

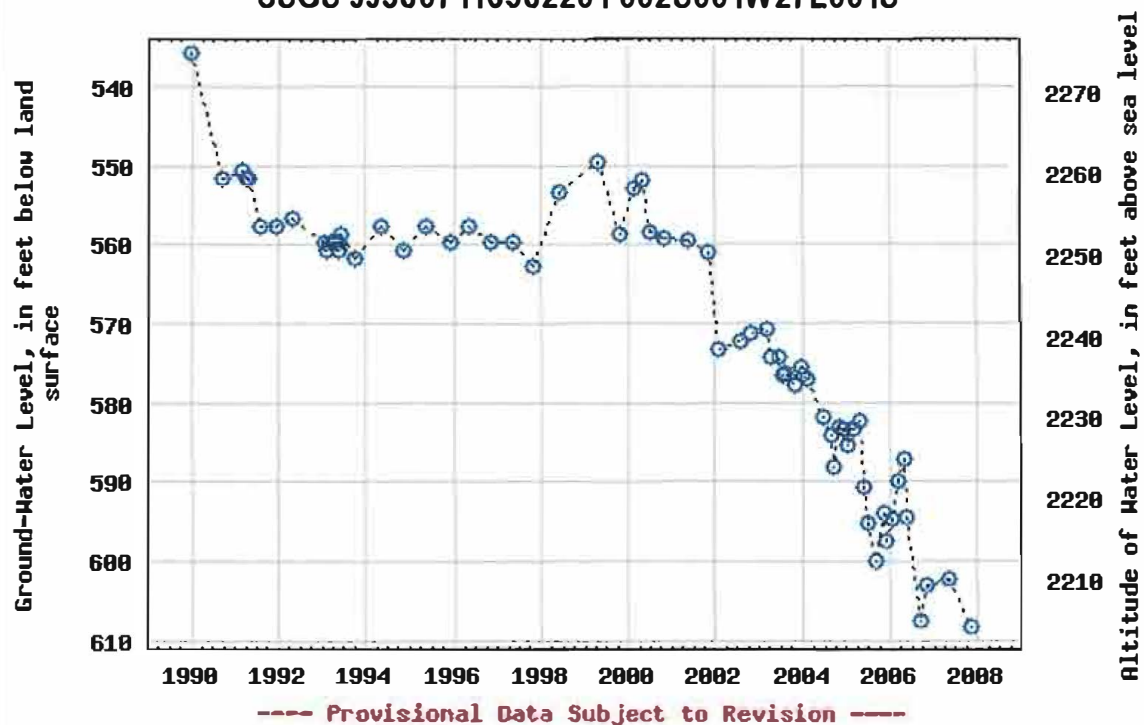


Figure 13: Groundwater Hydrographs – Beaumont Basin
2S/1W-33L01 and 2S/1W-27L01



USGS 335830117022201 002S002W25B001S

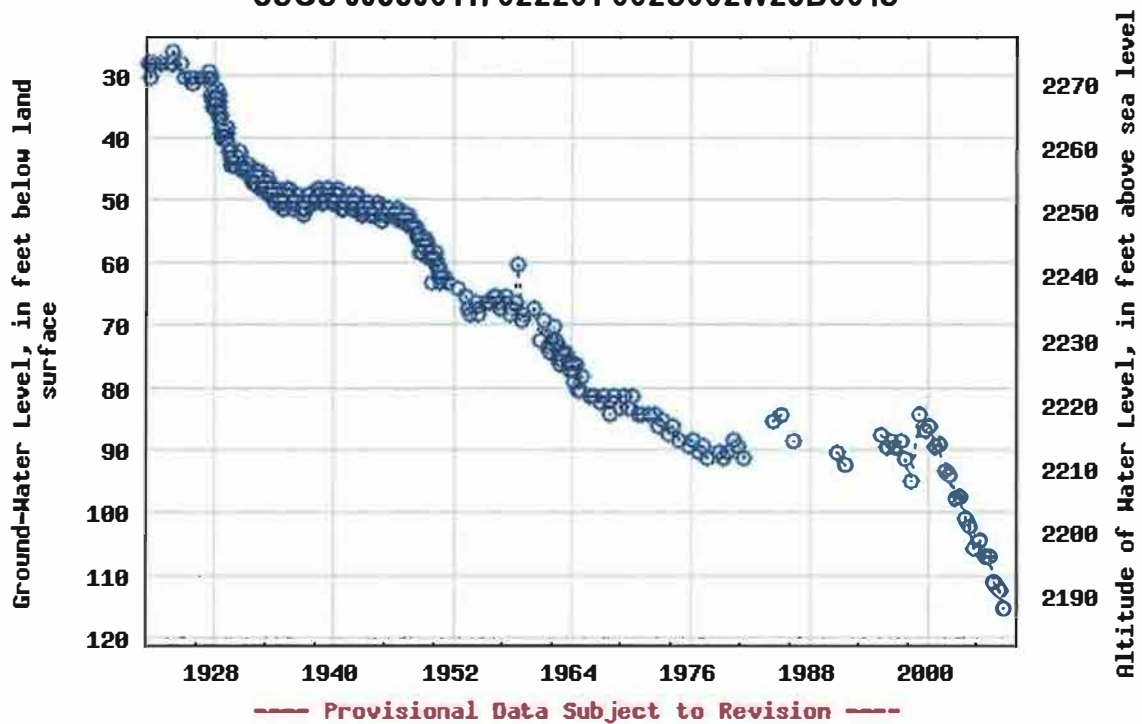
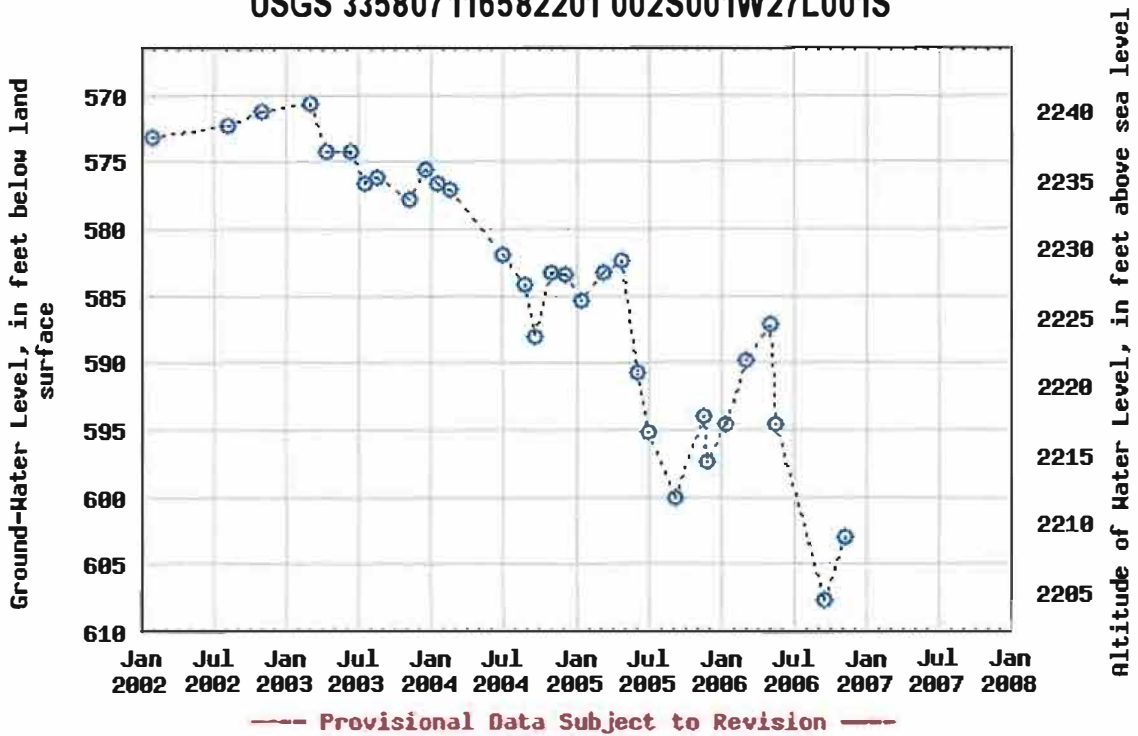


Figure 14: Groundwater Hydrograph – Beaumont Basin
2S/2W-25B01



USGS 335807116582201 002S001W27L001S



USGS 335830117022201 002S002W25B001S

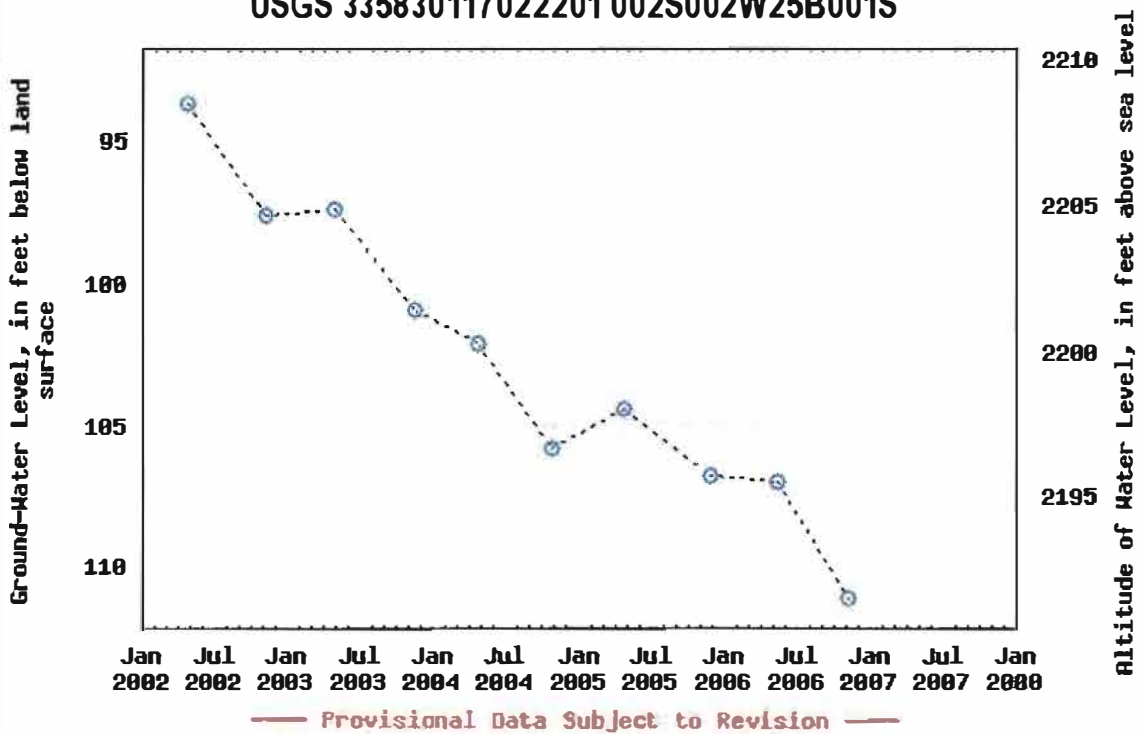
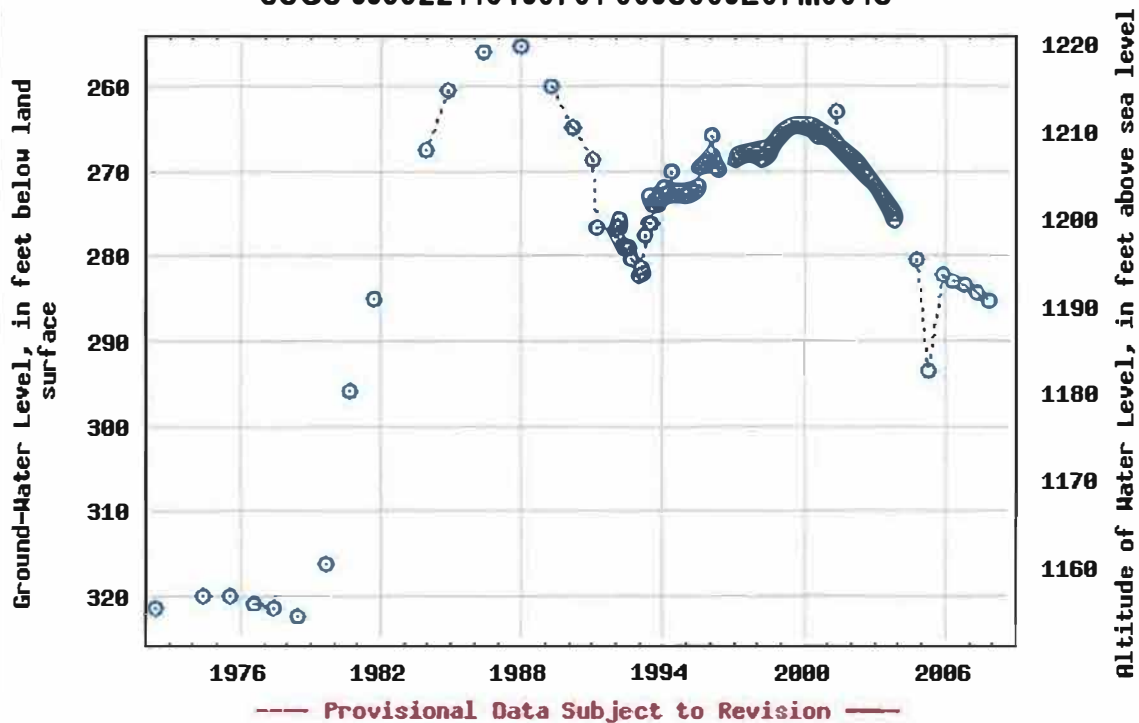


Figure 15: Groundwater Hydrographs – Beaumont Basin 2002 - 2007
2S/1W-27L01 and 2S/2W-25B01

USGS 335522116430701 003S003E07M001S



USGS 335532116471701 003S002E09E001S

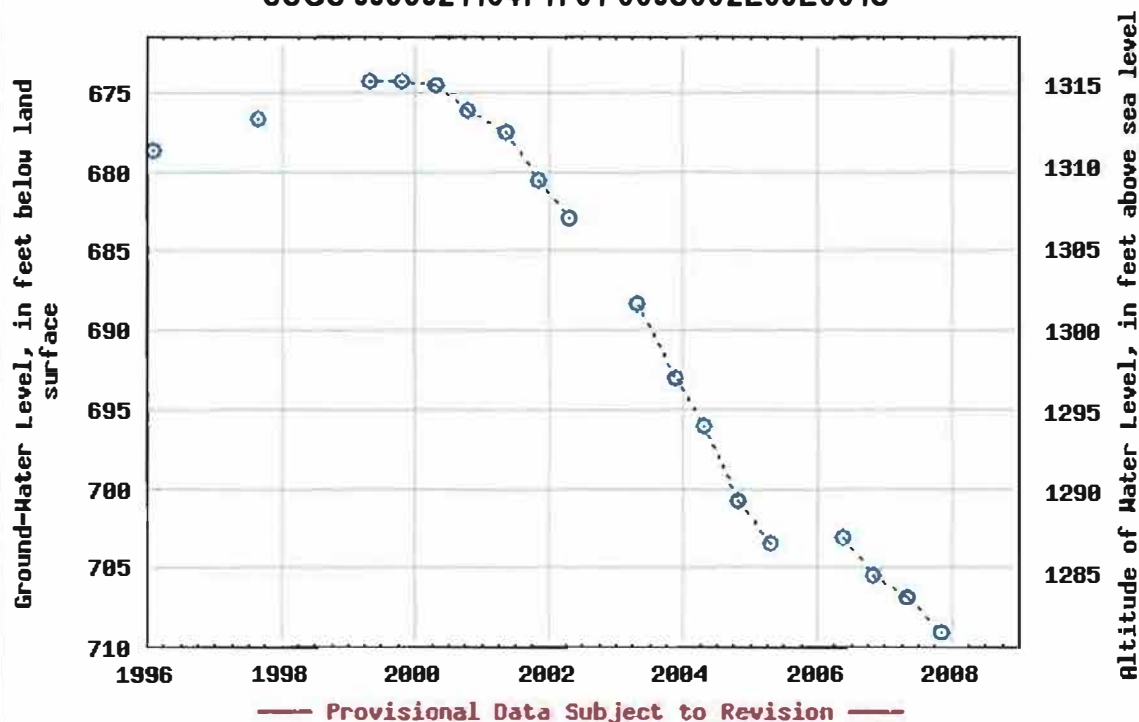


Figure 16: Groundwater Hydrographs – Cabazon Basin
3S/3E-07M01 and 3S/2E-09E01

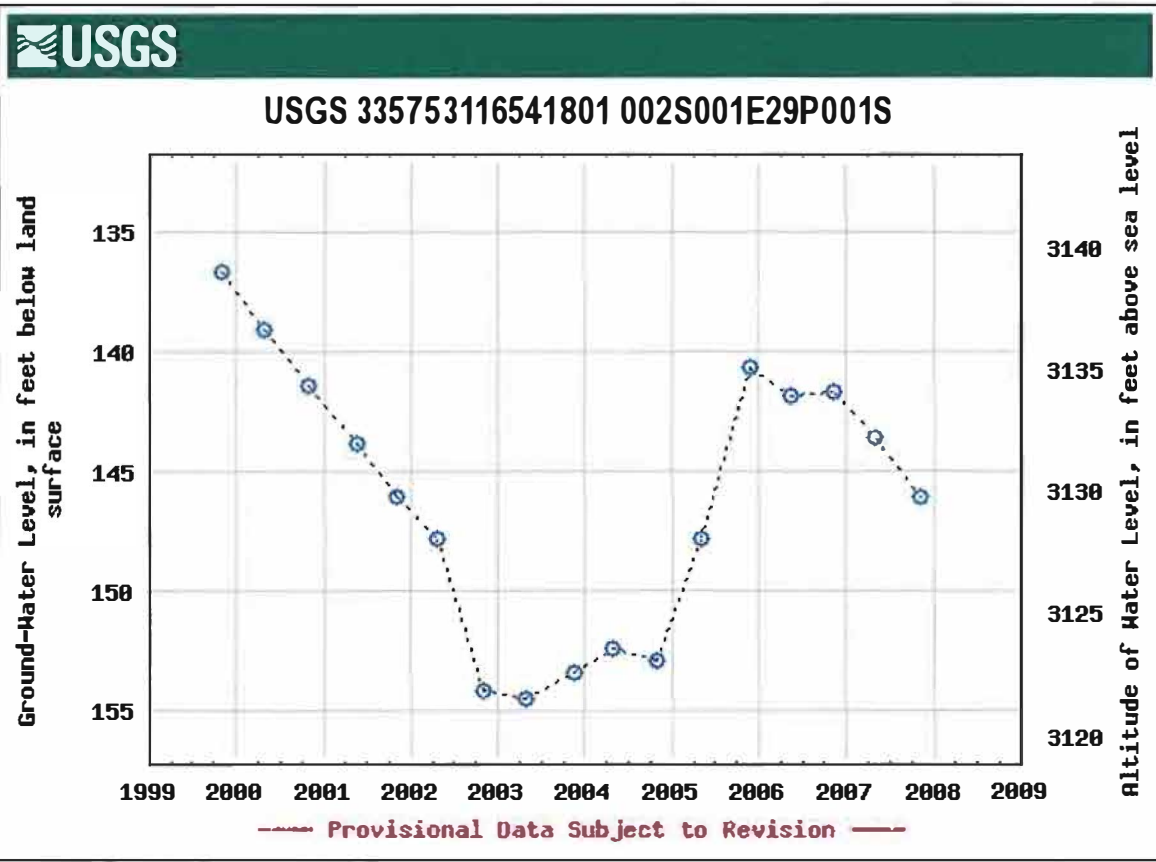
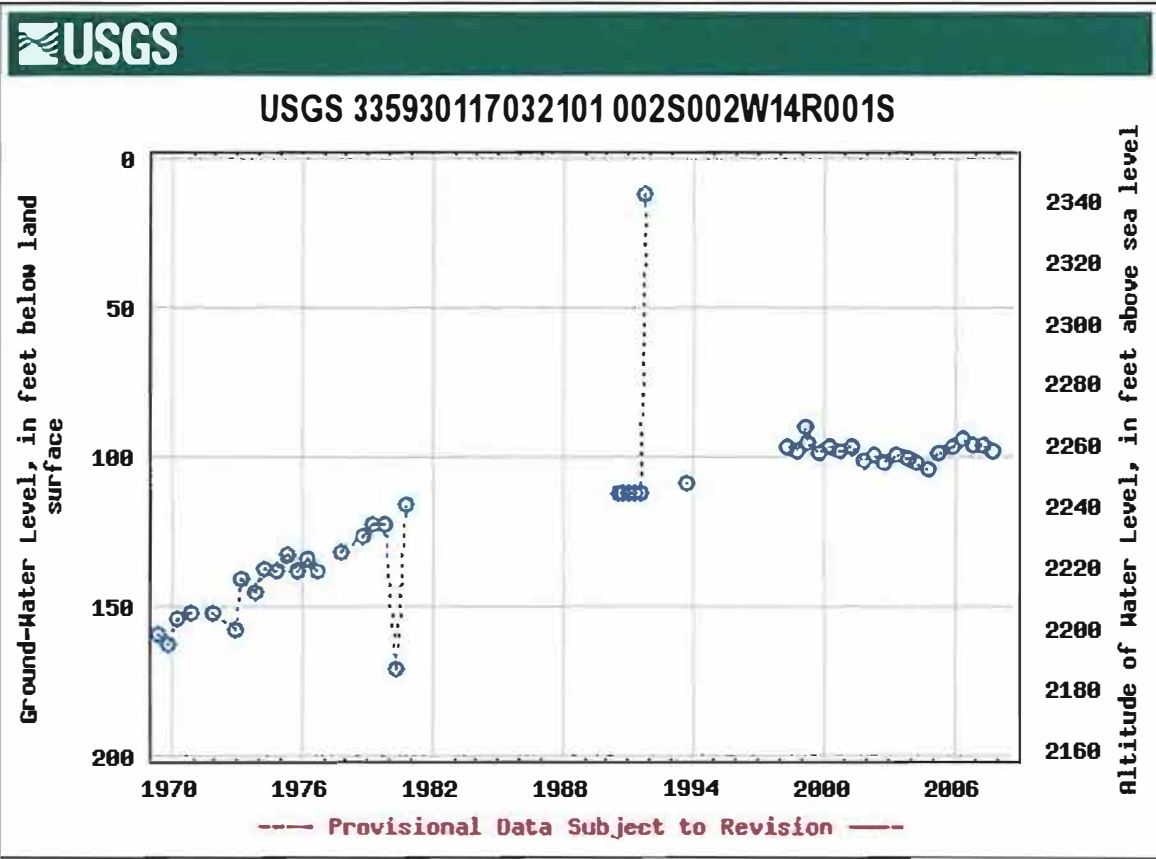
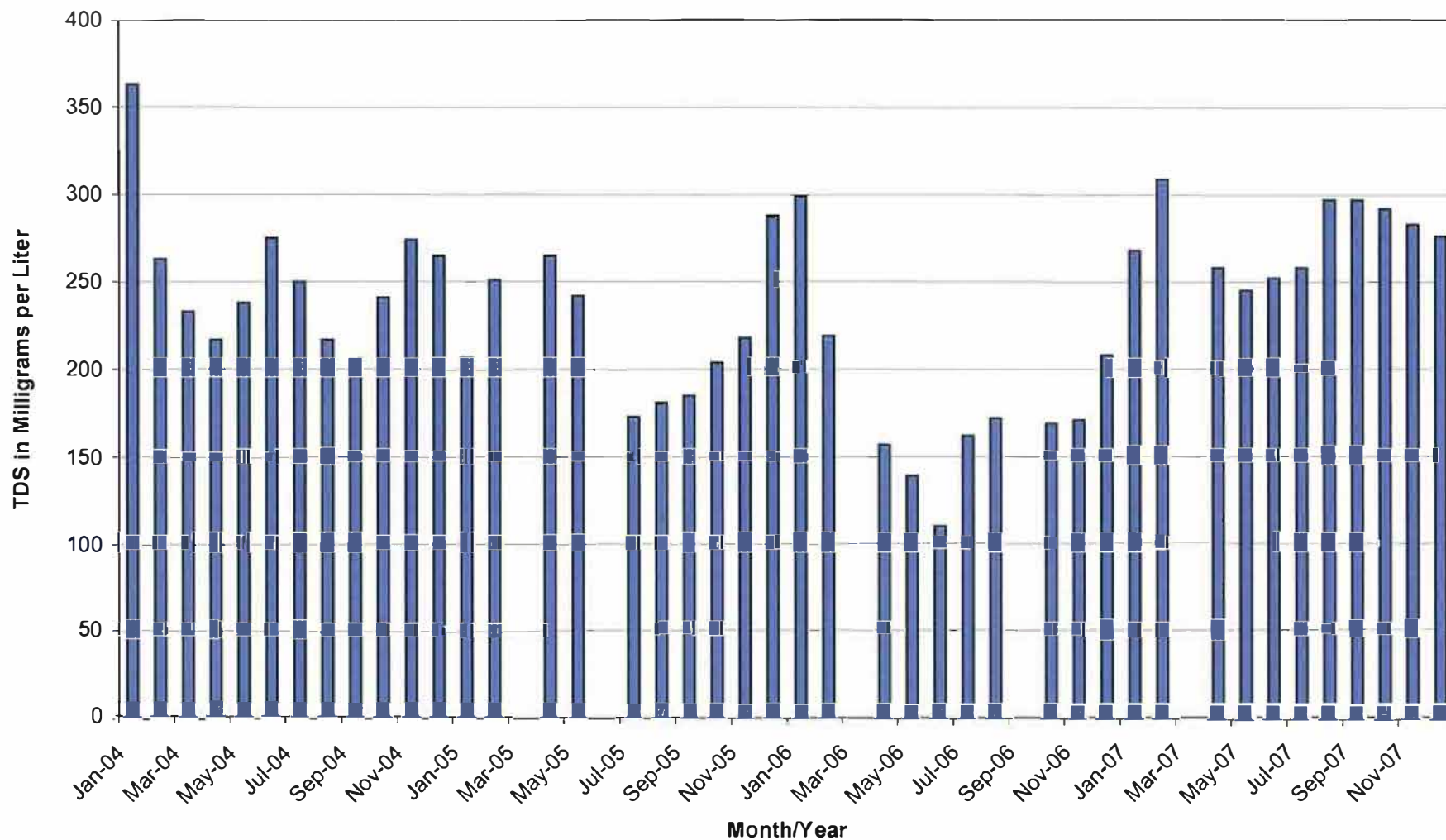


Figure 17: Groundwater Hydrographs – Calimesa Basin and Banning Canyon Basin
2S/2W-14R01 and 2S/1E-29P01

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Monthly TDS at Devil Canyon Afterbay Near San Bernardino 2004 through 2007



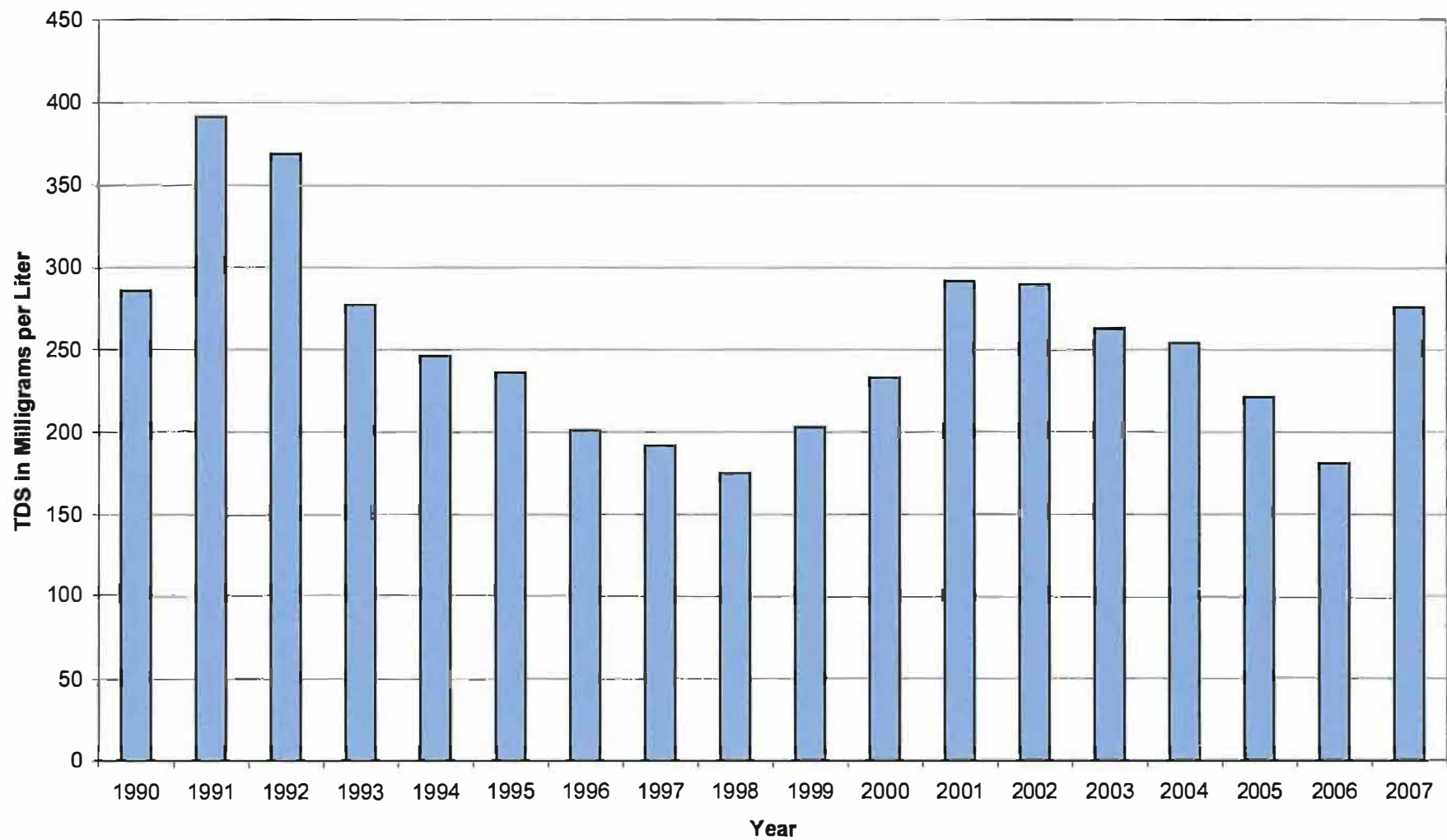
Source: Table 32, DWR Monthly Operations Report

Canyon

Figure 18: Monthly TDS at Devil Canyon Afterbay Near San Bernardino 2004 - 2007

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in Ber

Average TDS at Devil Canyon Afterbay Near San Bernardino 1990 - 2005



Source: Table 32, DWR Monthly Operations Report

Canyon

Figure 19: Average TDS at Devil Canyon Afterbay Near San Bernardino 1990 - 2007

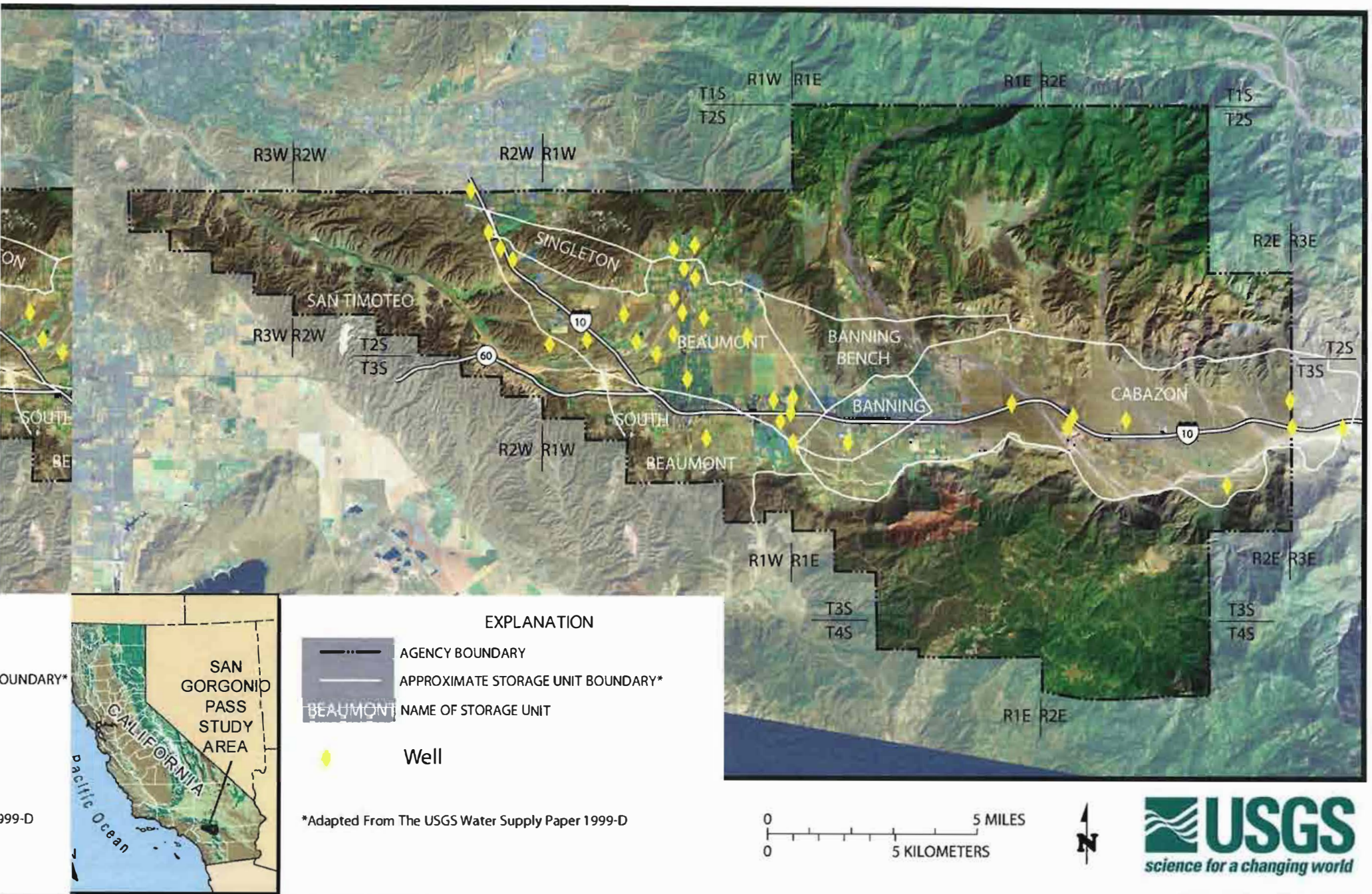


Figure 20: Water Quality Well Network in the San Geronio Pass Area

APPENDIX A

2007 REPORT ON WATER SUPPLY CONDITIONS IN THE SAN GORGONIO PASS REGION



Beaumont Basin Watermaster
Attention: J. Andrew Schlange, Chief of Watermaster Services
560 Magnolia Avenue
Beaumont, California 92223

Per your authorization, Wildermuth Environmental, Inc (WEI) updated the water demand and supply plans for the Beaumont Cherry Valley Water District (BCVWD), the City of Banning (Banning), the Cabazon Water District (CWD), the South Mesa Water Company (SMWC), and the part of the Yucaipa Valley Water District (YVWD) located in Riverside County. The *investigation area* for these retail water agencies is shown by their combined spheres of influence in Figure 1. The water demand in the investigation area represents most of the water demand in the San Gorgonio Pass Water Agency (SGPWA) service area. This update is part of the San Timoteo Watershed Management Authority (STWMA) and Beaumont Basin Watermaster (Watermaster) annual assessment of water demands and water supply plans. WEI prepared a similar analysis in January 2006 pursuant to a request from LAFCO, which was adopted by the STWMA and the Watermaster in March 2006.

- *Beaumont Cherry Valley Water District, Final 2005 Urban Water Management Plan August (December 2005).*
- *Determination of Maximum Perennial Yield for the City of Banning*, Geoscience Support Services, 2003.
- *2005 Urban Water Management Plan for the City of Banning*, Wildermuth Environmental, Inc., 2005.
- *2005 Urban Water Management Plan for the South Mesa Water Company*, South Mesa Water Company, 2005.
- An Excel workbook from Joe Zoba of the YVWD that shows the water demands and the supply of imported and recycled waters projected to be used in the part of the YVWD within the SGPWA service area (January 2007).
- *Groundwater Resources Monitoring Plan*, Yucaipa. Fox, R. C., May, 1990.
- A verbal projection of the water demands and supply plan for the CWD, Krieger and Stewart (engineers for the CWD, November, 2005).

Some of these water demands were slightly revised based on actual water use after the planning documents were prepared and on changes in the water supply plans provided by the agencies. These demands are based on the planning investigations conducted by each agency and represent each agency's best estimate. The demand projections presented herein have been reviewed by all agencies except the CWD. The projected water demands in acre-ft/yr through 2030 are:

| Year | BCVWD | Banning | CWD | SMWC | YVWD | Total |
|-------------------------|--------|---------|--------|-------|--------|--------|
| 2005 | 8,854 | 9,282 | 1,000 | 2,500 | 1,500 | 23,136 |
| 2010 | 22,300 | 12,501 | 4,000 | 2,740 | 3,000 | 44,541 |
| 2015 | 27,900 | 15,518 | 8,000 | 3,200 | 5,000 | 59,618 |
| 2020 | 29,300 | 18,535 | 12,000 | 3,560 | 6,935 | 70,330 |
| 2025 | 30,000 | 21,552 | 16,000 | 3,900 | 8,610 | 80,062 |
| 2030 | 30,500 | 24,569 | 16,000 | 4,300 | 10,285 | 85,654 |
| Compound Rate of Growth | 4.7% | 4.0% | 11.7% | 2.2% | 8.0% | 5.2% |

Figure 2 illustrates the water demand growth over time. The composite growth rate is about five percent per year and will increase from about 23,100 acre-ft/yr in 2005 to about 86,000 acre-ft/yr in 2030. Note that most of this growth is front loaded and will occur before 2020. These demand projections do not reflect the present housing slump caused by challenges in the mortgage industry. It is reasonable to assume that the growth in demand will slow down over the next one to two years. For planning purposes the Watermaster and the STWMA should not assume that the overall growth will be less than shown herein – the Watermaster and the STWMA should assume that there will be a surge in demand when the mortgage situation plays out and should continue to work with the SGPWA to aggressively develop new supplies for the region and stay ahead of the future demands.

WATER SUPPLY PLANS

Each agency has a number of available water sources, which are based, in part, on their location within the investigation area. Current sources of water include surface water, groundwater, and imported State Water Project (SWP) water. The largest single local source is the Beaumont Groundwater Basin. Future sources include increased usage of surface water, groundwater, imported water, recycled water, and conservation. Substantial investments will be required to develop local, recycled, and additional imported supplies to meet future demands. The retail water agencies have incorporated the cost of developing new supplies into their connection and commodity fees.

Beaumont Basin Adjudication

In February 2003, the STWMA filed suit in the Superior Court to adjudicate pumping and storage rights in the Beaumont Basin. The STWMA and the major pumpers developed a stipulated agreement (*Stipulated Agreement*) to resolve the lawsuit. In February 2004, the *Stipulated Agreement* was approved by the Court. The *Stipulated Agreement* is available for review at www.beaumontwatermaster.org.

This *Stipulated Agreement* established pumping rights among the two major classes of pumpers: overlying and appropriative. Overlying pumpers were assigned fixed rights with some flexibility to vary their maximum use during any five-year period. The safe yield established in the *Stipulated Agreement* is 8,650 acre-ft/yr. The total of the overlying producers' rights is equal to the safe yield. Collectively, the overlying pumpers produce substantially less than their aggregate rights. Appropriators' rights are stated as a percentage or fraction of water in the safe yield that is not used by the overlying pumpers. The *Stipulated Agreement* provides for the orderly transition of land use and associated water uses through

WATER SUPPLY PLANS

Each agency has a number of available water sources, which are based, in part, on their location within

detailed provisions that require the assignment of rights from an overlying pumper to an appropriator when the appropriator provides service to the lands of the overlying pumper.

The *Stipulated Agreement* declares that there is a temporary surplus of water in the basin of 160,000 acre-ft. The temporary surplus can be used by the appropriators during the first ten years of the *Stipulated Agreement*. The appropriators will store the unused portion of the temporary surplus for use in subsequent years. The intent of removing the temporary surplus is to create additional evacuated storage space in the basin for use in storing supplemental water. The *Stipulated Agreement* gives control of the evacuated storage space in the basin and the overall management of storage to the Watermaster.

Exhibit A herein shows the projected allocation of the safe yield, the operating yield, the transition of overlying uses to appropriative uses for the overlayers that will convert, and the assignment of non-potable water for overlying rights. Table 1 shows the projected water rights from the Beaumont Basin for the appropriators through 2020; afterwards, the pumping rights should remain constant at 2020 values.

State Water Project Water

The SGPWA has a Table "A" allocation of 17,300 acre-ft/yr of water from the State Water Project (SWP). The SGPWA, by agreement with the DWR and the San Bernardino Valley Municipal Water District (SBVMWD), is currently limited to importing 8,650 acre-ft/yr until the SGPWA and SBVMWD formally initiate the environmental documentation process for the next phase of the East Branch Extension (EBX2). The EBX will include pipelines and pump station improvements upstream of the SGPWA service area. Based on discussions with SGPWA staff, we have assumed that full deliveries of the SGPWA's Table "A" allocation will be available starting in 2011.

The DWR completed an assessment of the reliability of the SWP in 2002 and found that the SWP would be able to deliver an average of 72 percent of the contracted Table "A" allocation or about 12,500 acre-ft/yr and that the deliveries would range between about 19% and 82% or about 3,300 to 14,200 acre-ft/yr for the SGPWA. Recent updated estimates developed by the DWR suggest that the average reliability could be as low as 69 percent. For this analysis, we have assumed the average reliability to be 69 percent, which yields about 12,000 acre-ft/yr to the SGPWA. The SGPWA, in their planning, has determined that there will be surplus water in the Delta from time to time and that part of this surplus water (Article 21 water) could be purchased by the SGPWA and used to supplement their Table "A" allocation. The SGPWA has estimated that they could supplement their Table "A" allocation by 2,000 acre-ft/yr on average with this surplus water, yielding the SGPWA about 14,000 acre-ft/yr.

In addition to the SGPWA Table "A" allocation, the BCVWD and Banning are collecting fees from new development to purchase new Table "A" water. The BCVWD and Banning will provide these funds to the SGPWA who will then purchase the new water and make it available to the BCVWD and Banning. The BCVWD will require 9,500 acre-ft/yr of reliable supply and therefore plans to have the SGPWA purchase 13,800 acre-ft/yr of water (69 percent average reliability). Likewise, Banning will require 5,000 acre-ft/yr of reliable supply and therefore plans to have the SGPWA purchase 7,300 acre-ft/yr of water. In total, the BCVWD and Banning will provide funds to the SGPWA to purchase 21,100 acre-ft/yr of new Table "A" water, which will yield about 14,500 acre-ft/yr of supply on average. All of the BCVWD's and Banning's SWP water demands are assumed to come from this Table "A" enhancement.

the CWD's, the SMWC's, and the YVWD's demands for SWP water through the SGPWA are assumed to be met through the SGPWA's existing Table "A" and Article 21 water. In the out years, near 2030, there will not be enough of this water for these entities and they will need to secure additional supplemental water supplies. Shortfalls can also be satisfied by transfers from Beaumont Basin storage accounts.

could be as low as 69 percent. For this analysis, we have assumed the average reliability to be 69 percent, which yields about 12,000 acre-ft/yr to the SGPWA. The SGPWA, in their planning, has determined that there will be surplus water in the Delta from time to time and that part of this surplus water (Article 21 water) could be purchased by the SGPWA and used to supplement their Table "A" allocation. The

Recycled Water

Recycled water is produced by Banning, the City of Beaumont, and the YVWD. Banning, the BCVWD, the SMWC, and the YVWD have plans to reuse recycled water for irrigation uses and to supplement groundwater supplies through recharge. Most of the recycled water produced will be reused. The amounts of recycled water projected to be produced and used through 2030 are:

| Year | Recycled Water Production (acre-feet) | Recycled Water Reuse (acre-feet) | Fraction of Recycled Water Reused |
|------|--|-------------------------------------|-----------------------------------|
| 2005 | 4,800 | 0 | 0% |
| 2010 | 10,300 | 6,300 | 61% |
| 2015 | 15,000 | 9,500 | 63% |
| 2020 | 17,700 | 10,300 | 58% |
| 2025 | 20,000 | 11,400 | 57% |
| 2030 | 22,300 | 13,400 | 60% |

Some of the unused recycled water is discharged to San Timoteo Creek and the remainder is recharged in the Banning Basin. This unused recycled water is a valuable resource that may be put to use in the future to meet water demands in the SGPWA service area.

BCVWD Water Supply Plan

Table 2 lists the water demands and sources of supply for the BCVWD sphere. This table also shows the amount of recycled water produced in the BCVWD service area and a projection of the water accounting that will occur under the *Stipulated Agreement*. Potable water demands are projected to grow from about 8,850 in 2005 to about 23,500 acre-ft/yr in 2030. Total water demand is projected to grow from about 8,850 acre-ft/yr in 2005 to about 30,500 acre-ft/yr in 2030—a compounded growth rate of 4.7 percent per year.

The BCVWD is investing in its future water supply plan to ensure that it will be able to meet demands in its service area for the next 25 years and beyond. The BCVWD currently uses two supply sources: groundwater from Beaumont Basin and Edgar Canyon. Beaumont Basin supplies are enhanced by the recharge of imported water and transfer of appropriator water. The BCVWD is developing new water sources, including Noble Creek recharge, urban stormwater recharge, the direct use of non-potable water, and the recharge of recycled water. The details of the BCVWD water supply plan can be found in *Beaumont Cherry Valley Water District, Final 2005 Urban Water Management Plan* (December 2005). The BCVWD has purchased imported water from the SGPWA through the SGPWA's existing Table "A" allocation and, as mentioned above, will provide funds to the SGPWA to purchase additional Table "A" water for its exclusive use.

The BCVWD water supply plan can meet future water demands through 2030 and beyond. In most years, the BCVWD will have a substantial surplus of water, which will allow them to store water in the Beaumont Basin.

Table 2 lists the water demands and sources of supply for the BCVWD sphere. This table also shows the amount of recycled water produced in the BCVWD service area and a projection of the water accounting that will occur under the *Stipulated Agreement*. Potable water demands are projected to grow from about

Banning Water Supply Plan

Table 3 lists the water demands and the sources of supply for the Banning service area. This table also shows the amount of recycled water produced in the Banning service area and a projection of the water accounting that will occur under the *Stipulated Agreement*. Total water demand is projected to grow from about 9,280 acre-ft/yr in 2005 to about 24,600 acre-ft/yr in 2030—a compounded growth rate of about 4.0 percent per year.

Banning is investing in its future water supply plan to ensure that it will be able to meet demands in its service area for the next 25 years and beyond. Banning currently uses three supply sources: groundwater from the Beaumont Basin, Banning Canyon Basin, and Banning East-West Basins. In addition, Banning is developing new water sources, including new urban stormwater recharge in the Beaumont Basin, the direct use of recycled water, and the recharge of imported water. Banning is working with the Banning Heights Mutual Water Company and the SGPWA to optimize the development of water resources in the Banning area. The details of Banning's water supply plan can be found in its *2005 Urban Water Management Plan*. Banning is planning to purchase imported water from the SGPWA indirectly at spreading grounds in the Beaumont Basin and directly through the delivery of treated imported water from a treatment plant that will be jointly funded and owned by the BCVWD and Banning. Banning is planning to purchase imported water from the SGPWA through the SGPWA's existing Table "A" allocation in the early years and, as mentioned above, will provide funds to the SGPWA to purchase additional Table "A" water for its exclusive use.

The Banning water supply plan can meet future water demands through 2030 and beyond. In most years, Banning will have a substantial surplus of water, which will allow them to store water in the Beaumont Basin.

Cabazon Water District

Table 4 lists the water demands and the sources of supply for the CWD service area. The CWD is not a party to the *Stipulated Agreement*. Total water demand is projected to grow from about 1,000 acre-ft/yr in 2005 to about 16,000 acre-ft/yr in 2025 and remain steady thereafter—a compounded growth rate of about 11.7 percent per year.

The CWD plans to rely entirely on local groundwater from the Cabazon Groundwater Basin area and a small spring for its local supplies. The CWD has no immediate plans to take imported water from the SGPWA.

The City of Banning, the Morongo Indians, and a bottled-water company also pump from the Cabazon Groundwater Basin area. Groundwater pumping in the Cabazon Groundwater Basin area could reach 20,000 acre-ft/yr when the CWD area reaches build out in 2025. For planning purposes, we have assumed that the CWD will limit its pumping to 6,000 acre-ft/yr and will import water for the remaining demand, up to 10,000 acre-ft/yr, from the SGPWA. We have also assumed, based on discussions with the CWD's engineer, that the CWD will not reuse its recycled water.

South Mesa Water Company

Table 5 lists the water demands and the sources of supply for the SMWC service area. This table also shows a projection of the water accounting that will occur under the *Stipulated Agreement*. Total water demand is projected to grow from about 2,500 acre-ft/yr in 2005 to about 4,300 acre-ft/yr in 2030—a compounded growth rate of about 2.2 percent per year.

The SMWC is investing in its future water supply plan to ensure that it will be able to meet demands in its service area for the next 25 years and beyond. The SMWC currently uses two supply sources: groundwater from the Beaumont Basin and Calimesa Basin (a sub-basin of the Yucaipa-area Basins). The SMWC is planning to construct a treatment plant and take delivery of SWP water from the SGPWA. In the near future and beyond, the SMWC plans to rely on the Calimesa Basin, SWP water, and limited

party to the *Stipulated Agreement*. Total water demand is projected to grow from about 1,000 acre-ft/yr in 2005 to about 16,000 acre-ft/yr in 2025 and remain steady thereafter—a compounded growth rate of about 11.7 percent per year.

The CWD plans to rely entirely on local groundwater from the Cabazon Groundwater Basin area and a

reuse of recycled water. The details of the SMWC's water supply plan can be found in its *2005 Urban Water Management Plan*.

The SMWC water supply plan can meet future water demands through 2030 and beyond. In most years, the SMWC will have a substantial surplus of water, which will allow them to store water in the Beaumont Basin.

YVWD Water Supply Plan

Table 6 lists the water demands and the sources of supply for the area within the Riverside County portion of the YVWD service area. This table also shows the amount of recycled water produced in the YVWD service area and a projection of the water accounting that will occur under the *Stipulated Agreement*. Potable water demands are projected to grow from about 1,500 in 2005 to about 6,500 acre-ft/yr in 2030. Total water demand is projected to grow from about 1,500 acre-ft/yr in 2005 to about 10,300 acre-ft/yr in 2030—a compounded growth rate of about 8 percent.

The YVWD is investing in its future water supply plans to ensure that they will be able to meet demands in their service areas for the next 25 years. The YVWD currently pumps groundwater from the Beaumont Basin and the Calimesa Basin. The YVWD is developing new water sources for this area, including recycled and imported waters. The YVWD is constructing a filtration plant and planning to purchase State Project Water from the SGPWA through the SGPWA's existing Table "A" allocation and from San Bernardino Valley Municipal Water District.

The YVWD water supply plan can meet future water demands through 2030 and beyond. In most years, the YVWD will have a surplus of water, which will allow them to store water in the Beaumont Basin.

AGGREGATE DEMANDS AND WATER SUPPLY

Table 7 lists the aggregate water demands and water sources for the BCVWD, Banning, the CWD, the SMWC, and the Riverside County portion of the YVWD. Total demand is seen to increase from about 23,200 in 2005 to about 85,700 acre-ft/yr in 2030—an aggregate growth rate of about 5.2 percent.

Exclusive of water stored in the Beaumont Basin pursuant to the *Stipulated Agreement*, the total water supply available to the *investigation area* ranges from about 36,700 acre-ft/yr in 2005 to about 82,400 acre-ft/yr in 2030. The column labeled "Local Supplies" corresponds to groundwater supplies that were developed by the retail agencies. "Local Enhancements" is the new yield developed by the BCVWD Noble Creek Recharge Project and the recharge of new urban stormwater. The "Recycled Water Reuse" column corresponds to the direct reuse plans developed by the BCVWD, Banning, the SMWC, and the YVWD, and to the recycled water recharge program of the BCVWD. It was assumed that the SGPWA would maximize its allocation of Table "A" water and that the BCVWD, Banning, and the SGPWA would obtain additional imported water referred to herein as Table "A" Enhancement.

The temporary surplus is a separate part of the local supply until 2014 pursuant to the *Stipulated Agreement*. The unused portion of the temporary surplus that is stored in local storage accounts prior to 2014 will be used to meet local demands as part of the local groundwater supply after 2014. The aggregate supply exceeds aggregate demand from 2005 through 2025. The parties to the *Stipulated Agreement* will use water stored in the Beaumont Basin to meet their demands and no supply shortages are projected to occur through 2030. A key assumption is that the parties to the *Stipulated Agreement* will use water at the maximum rate at which it is available from the SGPWA every year, including the Table "A" enhancement water when it is available. In 2024, the demand for imported water will exceed the combined SGPWA original Table "A" allocation and the BCVWD and Banning Table "A" Enhancement with the deficit reaching about 2,000 acre-ft/yr by 2030. The SGPWA will need to purchase about 2,900 acre-ft/yr of new supplemental supplies and have this supply online in the early 2020s.

SMWC, and the Riverside County portion of the YVWD. Total demand is seen to increase from about 23,200 in 2005 to about 85,700 acre-ft/yr in 2030—an aggregate growth rate of about 5.2 percent.

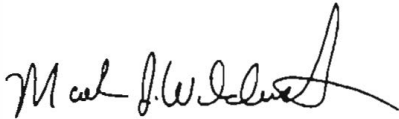
Exclusive of water stored in the Beaumont Basin pursuant to the *Stipulated Agreement*, the total water supply available to the *investigation area* ranges from about 36,700 acre-ft/yr in 2005 to about 82,400 acre-ft/yr in 2030.

With the exception of the SMWC and the CWD, water demands will continue to increase beyond 2030, and therefore additional supplemental water supplies beyond the Table "A" supplies suggested above will be required. These new supplemental supplies could include recycled and imported water. The Watermaster and the STWMA should carefully consider the findings of the forthcoming Resource Optimization Study (draft available in late October 2007) and implement its recommendations to maximize the use of local water resources and to maximize the reliability of SWP water.

It has been our sincere pleasure to serve the Watermaster and the STWMA in this investigation. Please call me if you have any questions.

Sincerely,

Wildermuth Environmental, Inc.



Mark Wildermuth, MS, PE
President/CEO

Encl.

cc STWMA Commissioners
Joe Aklufi

cc STWMA Commissioners
Joe Aklufi

Pumping
Stipulat

Table 1
Projected Allocation of Pumping Rights per the 2004 Beaumont Basin
Stipulated Agreement
(acre-ft)

| Year ¹ | Overlying Pumpers | | Appropriator Pumpers | | | | | Total Rights Allocated |
|-------------------|-------------------|-------------------|----------------------|-------|-------|---------|--------|------------------------|
| | Overlying Rights | Used by Overliers | BCVWD | YVWD | SMWC | Banning | Total | |
| 2004 | 8,650 | 4,251 | 6,802 | 2,173 | 1,996 | 5,029 | 16,000 | 20,251 |
| 2005 | 8,650 | 4,313 | 6,802 | 2,173 | 1,996 | 5,029 | 16,000 | 20,313 |
| 2006 | 8,650 | 4,074 | 6,802 | 2,173 | 1,996 | 5,029 | 16,000 | 20,074 |
| 2007 | 8,650 | 3,918 | 7,002 | 2,373 | 1,996 | 5,029 | 16,400 | 20,318 |
| 2008 | 8,650 | 3,918 | 7,044 | 2,565 | 1,996 | 5,029 | 16,634 | 20,552 |
| 2009 | 8,650 | 678 | 12,718 | 3,393 | 2,580 | 6,499 | 25,191 | 25,869 |
| 2010 | 8,650 | 678 | 12,785 | 3,593 | 2,587 | 6,517 | 25,483 | 26,161 |
| 2011 | 8,650 | 678 | 12,980 | 3,834 | 2,632 | 6,630 | 26,076 | 26,754 |
| 2012 | 8,650 | 678 | 12,867 | 3,977 | 2,587 | 6,516 | 25,947 | 26,625 |
| 2013 | 8,650 | 678 | 12,809 | 4,138 | 2,557 | 6,442 | 25,947 | 26,625 |
| 2014 | 8,650 | 678 | 5,566 | 1,824 | 432 | 1,088 | 8,909 | 9,587 |
| 2015 | 8,650 | 678 | 5,466 | 1,793 | 403 | 1,014 | 8,675 | 9,353 |
| 2016 | 8,650 | 678 | 5,366 | 1,761 | 373 | 940 | 8,441 | 9,119 |
| 2017 | 8,650 | 678 | 5,267 | 1,729 | 344 | 867 | 8,206 | 8,884 |
| 2018 | 8,650 | 678 | 5,167 | 1,697 | 315 | 793 | 7,972 | 8,650 |
| 2019 | 8,650 | 678 | 5,167 | 1,697 | 315 | 793 | 7,972 | 8,650 |
| 2020 | 8,650 | 678 | 5,167 | 1,697 | 315 | 793 | 7,972 | 8,650 |

¹ – Commencing in 2014, the temporary surplus is exhausted and the Appropriator Pumpers are allocated unproduced overlying rights annually based on Exhibit C of the Stipulated Agreement. The projected allocation of pumping rights will not change significantly after 2018.

Table 2
Water Demand and Water Supply Plan for the Beaumont Cherry Valley Water District Service Area
(continued)

| Beaumont Basin Input per the 2004 SVP Water Purchased for Recharge ² | Year ¹ | Demands ^{2,3} | | | Supplies ² | | | | | | | | | | | | | | | | | Total Supply (14)+(17)+(20) (21) | | | |
|---|-------------------|------------------------|----------------|-----------------|---|--|--|---|---|--------------------------------|--|--|---|--------------------------------|--|----------|--|----------------------|----------------------------|--|-----------------|--|---|-------|-----|
| | | Potable | Non Potable | Total Demand | Recycled Water Production Available for Use | Rights Per 2004 Adjudication ⁴ | Beaumont Basin Rights and Production ⁴ | | | | | | | | | | Annual Production Right per 2004 Adjudication | Annual Production | Over (Under) Production | Potential Volume in BCVWD Storage Account ⁷ | Edgar Canyon | | Direct Use of Non-Potable Water | | |
| | | | | | | | Additions to Pumping Right per the 2004 Adjudication | | | | | Recycled Water Recharge ² | SVP Water Purchased for Recharge ² | Appropriates Water Transfer | Total Additions to Pumping Right | Recycled | | | | | | | Imported SNP Water ^{5,6} | Total | |
| | | | | | | | Noble Creek Recharge Project | New Urban Storm Water Recharge ⁸ | SVP Water Purchased for Recharge ² | Appropriates Water Transfer | Total Additions to Pumping Right | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | (7) |
| (10) | (1) | (2) | (3) | (4) (2)+(3) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) (10)+(11) | (13) | (14) (13)+(12) | (15) (14)-(13) | (16) | (17) | (18) | (19) | (20) | | | | | |
| 3,500 | 2006 | 11,801 | 0 | 11,801 | 2,118 | 6,802 | 0 | 200 | 0 | 3,500 | 0 | 3,700 | 10,502 | 9,252 | (1,250) | 1,331 | 2,549 | 0 | 0 | 0 | 11,801 | | | | |
| 6,000 | 2007 | 11,750 | 0 | 11,750 | 2,093 | 7,002 | 0 | 200 | 0 | 6,000 | 1,500 | 7,700 | 14,702 | 9,950 | (4,752) | 6,084 | 1,800 | 0 | 0 | 0 | 11,750 | | | | |
| 11,440 | 2008 | 12,180 | 5,440 | 17,620 | 2,308 | 7,044 | 0 | 200 | 0 | 11,440 | | 11,840 | 18,684 | 15,620 | (2,864) | 8,948 | 1,800 | 0 | 0 | 0 | 17,620 | | | | |
| 11,560 | 2009 | 14,040 | 5,560 | 19,600 | 3,238 | 12,718 | 2,000 | 1,760 | 0 | 11,560 | | 15,320 | 28,038 | 17,800 | (10,238) | 19,186 | 1,800 | 0 | 0 | 0 | 19,600 | | | | |
| 6,000 | 2010 | 15,900 | 6,400 | 22,300 | 4,183 | 12,785 | 2,000 | 1,760 | 968 | 6,000 | | 10,728 | 23,513 | 14,100 | (9,413) | 28,586 | 1,800 | 3,200 | 3,200 | 6,400 | 22,300 | | | | |
| 6,000 | 2011 | 16,840 | 6,480 | 23,420 | 4,683 | 12,980 | 2,000 | 1,760 | 1,448 | 6,000 | | 11,205 | 24,187 | 15,140 | (9,047) | 37,647 | 1,800 | 3,240 | 3,240 | 6,480 | 23,420 | | | | |
| 6,000 | 2012 | 17,980 | 6,580 | 24,540 | 5,208 | 12,867 | 2,000 | 1,760 | 1,928 | 6,000 | | 11,668 | 24,555 | 16,180 | (8,375) | 46,021 | 1,600 | 3,280 | 3,280 | 6,560 | 24,540 | | | | |
| 6,000 | 2013 | 19,020 | 6,640 | 25,660 | 5,728 | 12,809 | 2,000 | 1,760 | 2,408 | 6,000 | | 12,168 | 24,977 | 17,220 | (7,757) | 53,778 | 1,800 | 3,320 | 3,320 | 6,640 | 25,660 | | | | |
| 6,000 | 2014 | 20,060 | 6,720 | 26,780 | 6,248 | 5,566 | 2,000 | 1,760 | 2,888 | 6,000 | | 12,648 | 18,214 | 18,260 | 46 | 53,732 | 1,800 | 3,360 | 3,360 | 6,720 | 26,780 | | | | |
| 6,000 | 2015 | 21,100 | 6,800 | 27,900 | 6,768 | 5,466 | 2,000 | 1,760 | 3,368 | 6,000 | | 13,128 | 18,594 | 19,300 | 706 | 53,026 | 1,800 | 3,400 | 3,400 | 6,800 | 27,900 | | | | |
| 8,000 | 2016 | 21,340 | 6,840 | 28,180 | 6,888 | 5,366 | 2,000 | 1,760 | 3,468 | 6,000 | | 13,228 | 18,594 | 19,540 | 946 | 52,080 | 1,800 | 3,420 | 3,420 | 6,840 | 28,180 | | | | |
| 6,000 | 2017 | 21,580 | 6,880 | 28,460 | 7,008 | 5,267 | 2,000 | 1,760 | 3,568 | 6,000 | | 13,328 | 18,595 | 19,780 | 1,185 | 50,895 | 1,800 | 3,440 | 3,440 | 6,880 | 28,460 | | | | |
| 6,000 | 2018 | 21,820 | 6,920 | 28,740 | 7,128 | 5,167 | 2,000 | 1,760 | 3,668 | 6,000 | | 13,428 | 18,595 | 20,020 | 1,425 | 49,470 | 1,600 | 3,460 | 3,460 | 6,920 | 28,740 | | | | |
| 6,000 | 2019 | 22,060 | 6,960 | 29,020 | 7,248 | 5,167 | 2,000 | 1,760 | 3,768 | 6,000 | | 13,528 | 18,695 | 20,260 | 1,565 | 47,905 | 1,800 | 3,480 | 3,480 | 6,960 | 29,020 | | | | |
| 6,000 | 2020 | 22,300 | 7,000 | 29,300 | 7,368 | 5,167 | 2,000 | 1,760 | 3,868 | 6,000 | | 13,628 | 18,795 | 20,500 | 1,705 | 46,200 | 1,800 | 3,500 | 3,500 | 7,000 | 29,300 | | | | |
| 6,000 | 2021 | 22,440 | 7,000 | 29,440 | 7,438 | 5,167 | 2,000 | 1,760 | 3,904 | 6,000 | | 13,664 | 18,631 | 20,640 | 1,809 | 44,391 | 1,800 | 3,500 | 3,500 | 7,000 | 29,440 | | | | |
| 6,000 | 2022 | 22,580 | 7,000 | 29,580 | 7,508 | 5,167 | 2,000 | 1,760 | 3,904 | 6,000 | | 13,664 | 18,831 | 20,780 | 1,949 | 42,442 | 1,600 | 3,500 | 3,500 | 7,000 | 29,580 | | | | |
| 6,000 | 2023 | 22,720 | 7,000 | 29,720 | 7,578 | 5,167 | 2,000 | 1,760 | 3,904 | 6,000 | | 13,664 | 18,631 | 20,920 | 2,089 | 40,353 | 1,800 | 3,500 | 3,500 | 7,000 | 29,720 | | | | |
| 6,000 | 2024 | 22,860 | 7,000 | 29,860 | 7,648 | 5,167 | 2,000 | 1,760 | 3,904 | 6,000 | | 13,664 | 18,831 | 21,060 | 2,229 | 38,124 | 1,800 | 3,500 | 3,500 | 7,000 | 29,860 | | | | |
| 6,000 | 2025 | 23,000 | 7,000 | 30,000 | 7,718 | 5,167 | 2,000 | 1,760 | 3,904 | 6,000 | | 13,664 | 18,831 | 21,200 | 2,369 | 35,755 | 1,800 | 3,500 | 3,500 | 7,000 | 30,000 | | | | |
| 6,000 | 2026 | 23,100 | 7,000 | 30,100 | 7,788 | 5,167 | 2,000 | 1,760 | 3,904 | 6,000 | | 13,664 | 18,831 | 21,300 | 2,469 | 33,286 | 1,800 | 3,500 | 3,500 | 7,000 | 30,100 | | | | |
| 6,000 | 2027 | 23,200 | 7,000 | 30,200 | 7,818 | 5,167 | 2,000 | 1,760 | 3,904 | 6,000 | | 13,664 | 18,831 | 21,400 | 2,569 | 30,717 | 1,800 | 3,500 | 3,500 | 7,000 | 30,200 | | | | |
| 6,000 | 2028 | 23,300 | 7,000 | 30,300 | 7,868 | 5,167 | 2,000 | 1,760 | 3,904 | 6,000 | | 13,664 | 18,831 | 21,500 | 2,669 | 28,048 | 1,800 | 3,500 | 3,500 | 7,000 | 30,300 | | | | |
| 6,000 | 2029 | 23,400 | 7,000 | 30,400 | 7,918 | 5,167 | 2,000 | 1,760 | 3,904 | 6,000 | | 13,664 | 18,831 | 21,600 | 2,769 | 25,279 | 1,800 | 3,500 | 3,500 | 7,000 | 30,400 | | | | |
| 6,000 | 2030 | 23,500 | 7,000 | 30,500 | 7,968 | 5,167 | 2,000 | 1,760 | 3,904 | 6,000 | | 13,664 | 18,831 | 21,700 | 2,869 | 22,411 | 1,800 | 3,500 | 3,500 | 7,000 | 30,500 | | | | |

1 - Calendar year.

2 - Demands and Supplies as per December 2005 Urban Water Management Plan with minor changes to reflect compliance with 2004 Basin Plan and Beaumont Basin Stipulated Agreement.

3 - Includes all production from BCVWD and excludes overfill pumps.

4 - Strict interpretation of the Beaumont Basin Adjudication approved by the Court in 2004 and assumes that overfills will either be converted to non-potable supplies provided by BCVWD or that their demands will have been replaced by appropriate uses. See Table 4.

5 - Represents engineering estimate and credit to appropriator account is pending an application submitted to the Watermaster and subsequent investigation by the Watermaster. 200 acre-ft/yr of recharge is from 8th Street Basin, which is owned by the City of Beaumont. The City will apply for credit. to be applied to BCVWD's account.

6 - Assumes that recycled water will be available in 2008 and that 1 mgd of discharge to Coopera Creek will be maintained.

7 - Assumes that water stored in BCVWD storage account is allowed to accrue and be available during shortages on SVP or for lease/assignment to other parties.

8 - Assumes that raw State Project Water from SGPWA Table "A" allocation will be used to supplement recycled water to meet non-potable demands.

Water Supply

Table 3
Water Demand and Water Supply Plan for the City of Banning Service Area
(acre-ft/yr)

| | Year ¹ | Demands ² | Supplies ² | | | | | | | | | | | | | | | |
|---|-------------------|----------------------|---|---|---|---|--------------------------------|--|----------------------|----------------------------|--|----------------------|-------|-------|---|--------------------------------|-------------------|--------------|
| Rights and Production Annual Production Right per 2004 Adjudication | | | Recycled Water Production Available for Use | Beaumont Basin Rights and Production ³ | | | | | | | | Banning Storage Unit | | | Cabazon Storage Unit ⁴ | Banning Canyon ⁵ | Recycled Water | Total Supply |
| | | | | Rights Per 2004 Stipulated Agreement | New Urban Storm Water Recharge ⁶ | SWP Water Purchased for Recharge ⁷ | Appropriator Water Transfer | Annual Production Right per 2004 Adjudication | Annual Production | Over (Under) Production | Potential Volume in Banning Storage Account ⁸ | West | East | Total | | | | |
| | | | | (4) | (5) | (6) | (7) | (8) | (9) | (10) = (9)-(8) | (11) | (12) | (13) | (14) | | | | |
| 5,025 | 2006 | 10,238 | 3,394 | 5,029 | 0 | 0 | 0 | 5,029 | 1,858 | (3,171) | 7,847 | 1,402 | 612 | 2,014 | 0 | 6,366 | 0 | 10,238 |
| 6,525 | 2007 | 10,570 | 3,560 | 5,029 | 0 | 0 | 1,500 | 6,529 | 2,929 | (3,600) | 11,447 | 944 | 787 | 1,731 | 0 | 5,911 | 0 | 10,570 |
| 7,025 | 2008 | 11,214 | 3,882 | 5,029 | 0 | 2,000 | | 7,029 | 4,051 | (2,977) | 14,424 | 746 | 961 | 1,707 | 0 | 5,455 | 0 | 11,214 |
| 9,495 | 2009 | 11,857 | 4,204 | 6,499 | 0 | 3,000 | | 9,499 | 3,124 | (6,375) | 20,800 | 548 | 1,136 | 1,684 | 2,050 | 5,000 | 0 | 11,857 |
| 10,815 | 2010 | 12,501 | 4,526 | 6,517 | 300 | 4,000 | | 10,617 | 2,291 | (8,526) | 29,326 | 350 | 1,310 | 1,660 | 2,050 | 5,000 | 1,500 | 12,801 |
| 11,935 | 2011 | 13,105 | 4,828 | 6,530 | 300 | 5,000 | | 11,930 | 2,835 | (9,096) | 38,421 | 350 | 1,310 | 1,660 | 2,050 | 5,000 | 1,560 | 13,105 |
| 11,815 | 2012 | 13,708 | 5,129 | 6,516 | 300 | 5,000 | | 11,816 | 3,378 | (8,438) | 46,859 | 350 | 1,310 | 1,660 | 2,050 | 5,000 | 1,620 | 13,708 |
| 11,745 | 2013 | 14,311 | 5,431 | 6,442 | 300 | 5,000 | | 11,742 | 3,921 | (7,821) | 54,680 | 350 | 1,310 | 1,660 | 2,050 | 5,000 | 1,680 | 14,311 |
| 6,385 | 2014 | 14,915 | 5,733 | 1,088 | 300 | 5,000 | | 6,388 | 4,465 | (1,923) | 56,603 | 350 | 1,310 | 1,660 | 2,050 | 5,000 | 1,740 | 14,915 |
| 6,315 | 2015 | 15,518 | 6,034 | 1,014 | 300 | 5,000 | | 6,314 | 5,008 | (1,306) | 57,909 | 350 | 1,310 | 1,660 | 2,050 | 5,000 | 1,800 | 15,518 |
| 6,245 | 2016 | 16,121 | 6,338 | 940 | 300 | 5,000 | | 6,240 | 5,531 | (709) | 58,618 | 350 | 1,310 | 1,660 | 2,050 | 5,000 | 1,880 | 16,121 |
| 6,165 | 2017 | 16,725 | 6,638 | 867 | 300 | 5,000 | | 6,167 | 6,055 | (112) | 58,729 | 350 | 1,310 | 1,660 | 2,050 | 5,000 | 1,960 | 16,725 |
| 6,095 | 2018 | 17,328 | 6,939 | 793 | 300 | 5,000 | | 6,093 | 6,578 | 485 | 58,244 | 350 | 1,310 | 1,660 | 2,050 | 5,000 | 2,040 | 17,328 |
| 6,095 | 2019 | 17,932 | 7,241 | 793 | 300 | 5,000 | | 6,093 | 7,102 | 1,009 | 57,236 | 350 | 1,310 | 1,660 | 2,050 | 5,000 | 2,120 | 17,932 |
| 6,095 | 2020 | 18,535 | 7,543 | 793 | 300 | 5,000 | | 6,093 | 7,625 | 1,532 | 55,704 | 350 | 1,310 | 1,660 | 2,050 | 5,000 | 2,200 | 18,535 |
| 6,095 | 2021 | 19,138 | 7,844 | 793 | 300 | 5,000 | | 6,093 | 8,168 | 2,075 | 53,628 | 350 | 1,310 | 1,660 | 2,050 | 5,000 | 2,260 | 19,138 |
| 6,095 | 2022 | 19,742 | 8,148 | 793 | 300 | 5,000 | | 6,093 | 8,712 | 2,619 | 51,010 | 350 | 1,310 | 1,660 | 2,050 | 5,000 | 2,320 | 19,742 |
| 6,095 | 2023 | 20,345 | 8,448 | 793 | 300 | 5,000 | | 6,093 | 9,255 | 3,162 | 47,847 | 350 | 1,310 | 1,660 | 2,050 | 5,000 | 2,380 | 20,345 |
| 6,095 | 2024 | 20,948 | 8,749 | 793 | 300 | 5,000 | | 6,093 | 9,798 | 3,705 | 44,142 | 350 | 1,310 | 1,660 | 2,050 | 5,000 | 2,440 | 20,948 |
| 6,095 | 2025 | 21,552 | 9,051 | 793 | 300 | 5,000 | | 6,093 | 10,342 | 4,249 | 39,893 | 350 | 1,310 | 1,660 | 2,050 | 5,000 | 2,500 | 21,552 |
| 6,095 | 2026 | 22,155 | 9,353 | 793 | 300 | 5,000 | | 6,093 | 10,885 | 4,792 | 35,101 | 350 | 1,310 | 1,660 | 2,050 | 5,000 | 2,560 | 22,155 |
| 6,095 | 2027 | 22,759 | 9,654 | 793 | 300 | 5,000 | | 6,093 | 11,429 | 5,336 | 29,765 | 350 | 1,310 | 1,660 | 2,050 | 5,000 | 2,620 | 22,759 |
| 6,095 | 2028 | 23,362 | 9,956 | 793 | 300 | 5,000 | | 6,093 | 11,972 | 5,879 | 23,887 | 350 | 1,310 | 1,660 | 2,050 | 5,000 | 2,680 | 23,362 |
| 6,095 | 2029 | 23,965 | 10,258 | 793 | 300 | 5,000 | | 6,093 | 12,515 | 6,422 | 17,464 | 350 | 1,310 | 1,660 | 2,050 | 5,000 | 2,740 | 23,965 |
| 6,095 | 2030 | 24,569 | 10,560 | 793 | 300 | 5,000 | | 6,093 | 13,059 | 12,266 | 5,199 | 350 | 1,310 | 1,660 | 2,050 | 5,000 | 2,800 | 24,569 |

1 - Calendar year.

2 - Water Demands and Supplies adapted from City of Banning Urban Water Management Plan (2005).

3 - Strict interpretation of the Beaumont Basin Adjudication approved by the Court in 2004.

4 - Smith Creek Recharge Project. Represents engineering estimate and credit to appropriator account is pending an application submittal to the Watermaster and subsequent investigation by the Watermaster.

5 - Water will be either recharged in Beaumont Basin, served from a treatment plant, or some combination of both.

6 - Assumes that water stored in Banning storage account is allowed to accrue and be available during shortages on SWP or for lease/assignment to other parties.

7 - From Geoscience Report.

Table 4

Water Demand and Water Supply Plan for the Cabazon Water District
(acre-ft/yr)

| Year ¹ | Demands ² | | | Supplies ² | | |
|-------------------|----------------------|-------------|------------------|-------------------------------|--------------------------------|------------------|
| | Potable | Non Potable | Total | Imported SWP Water from SGPWA | Cabazon Groundwater Basin Area | Total Supply |
| (1) | (2) | (3) | (4) = (2)+(3) | (5) | (6) | (7) = (5)+(6) |
| 2006 | 1,600 | 0 | 1,600 | 0 | 1,600 | 1,600 |
| 2007 | 2,200 | 0 | 2,200 | 0 | 2,200 | 2,200 |
| 2008 | 2,800 | 0 | 2,800 | 0 | 2,800 | 2,800 |
| 2009 | 3,400 | 0 | 3,400 | 0 | 3,400 | 3,400 |
| 2010 | 4,000 | 0 | 4,000 | 0 | 4,000 | 4,000 |
| 2011 | 4,800 | 0 | 4,800 | 0 | 4,800 | 4,800 |
| 2012 | 5,600 | 0 | 5,600 | 0 | 5,600 | 5,600 |
| 2013 | 6,400 | 0 | 6,400 | 400 | 6,000 | 6,400 |
| 2014 | 7,200 | 0 | 7,200 | 1,200 | 6,000 | 7,200 |
| 2015 | 8,000 | 0 | 8,000 | 2,000 | 6,000 | 8,000 |
| 2016 | 8,800 | 0 | 8,800 | 2,800 | 6,000 | 8,800 |
| 2017 | 9,600 | 0 | 9,600 | 3,600 | 6,000 | 9,600 |
| 2018 | 10,400 | 0 | 10,400 | 4,400 | 6,000 | 10,400 |
| 2019 | 11,200 | 0 | 11,200 | 5,200 | 6,000 | 11,200 |
| 2020 | 12,000 | 0 | 12,000 | 6,000 | 6,000 | 12,000 |
| 2021 | 12,800 | 0 | 12,800 | 6,800 | 6,000 | 12,800 |
| 2022 | 13,600 | 0 | 13,600 | 7,600 | 6,000 | 13,600 |
| 2023 | 14,400 | 0 | 14,400 | 8,400 | 6,000 | 14,400 |
| 2024 | 15,200 | 0 | 15,200 | 9,200 | 6,000 | 15,200 |
| 2025 | 16,000 | 0 | 16,000 | 10,000 | 6,000 | 16,000 |
| 2026 | 16,000 | 0 | 16,000 | 10,000 | 6,000 | 16,000 |
| 2027 | 16,000 | 0 | 16,000 | 10,000 | 6,000 | 16,000 |
| 2028 | 16,000 | 0 | 16,000 | 10,000 | 6,000 | 16,000 |
| 2029 | 16,000 | 0 | 16,000 | 10,000 | 6,000 | 16,000 |
| 2030 | 16,000 | 0 | 16,000 | 10,000 | 6,000 | 16,000 |

1 -- Calendar year.

2 -- Water Demands and Supplies from Krieger and Stewart (Engineers for CWD), November 2005.

| | | | | | | |
|------|--------|---|--------|--------|-------|--------|
| 2022 | 13,600 | 0 | 13,600 | 7,600 | 6,000 | 13,600 |
| 2023 | 14,400 | 0 | 14,400 | 8,400 | 6,000 | 14,400 |
| 2024 | 15,200 | 0 | 15,200 | 9,200 | 6,000 | 15,200 |
| 2025 | 16,000 | 0 | 16,000 | 10,000 | 6,000 | 16,000 |

Water Supply

Beaumont Basin Rights

Water Treatment Plant

Area

Area

645

600

600

600

600

600

600

315

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Table 5
Water Demand and Water Supply Plan for the South Mesa Water Company
(acre-ft/yr)

| Year ¹ | Demands ² | | | Supplies ² | | | | | | | | | | Total Supply |
|-------------------|----------------------|-------------|------------------|---|---|--|-------------------------|-----------------------------|---|--|-------------------------------|----------------|---------------------------------|-----------------------------------|
| | Potable | Non Potable | Total | Recycled Water Production Available for Use | Beaumont Basin Rights and Production ³ | | | | | Imported SPW from SGPWA for Direct Potable Use | Non Potable Water Supply | | Yucalpa Area Groundwater Basins | |
| | | | | | Rights per 2004 Adjudication | SMWC Beaumont Pumping for use In SGPWA Area ⁴ | Over (Under) Production | Appropriator Water Transfer | Potential Volume in SMWC Storage Account ⁵ | | Imported SWP Water from SGPWA | Recycled Water | | |
| | | | | | | | | | | | | | | |
| (1) | (2) | (3) | (4) = (2)+(3) | (4) | (5) | (6) | (7) = (8)-(6) | (8) | (8) | (10) | (11) | (12) | (13) | (14) = (5)+(10)+(11)+(12)+(13) |
| 2006 | 2,548 | 0 | 2,548 | 0 | 1,996 | 645 | (1,351) | 0 | 4,225 | 0 | 0 | 0 | 1,903 | 2,548 |
| 2007 | 2,596 | 0 | 2,596 | 0 | 1,996 | 600 | (1,396) | (3,000) | 2,621 | 0 | 0 | 0 | 1,996 | 2,596 |
| 2008 | 2,644 | 0 | 2,644 | 0 | 1,996 | 600 | (1,396) | | 4,017 | 0 | 0 | 0 | 2,044 | 2,644 |
| 2009 | 2,692 | 0 | 2,692 | 0 | 2,580 | 600 | (1,980) | | 5,997 | 0 | 0 | 0 | 2,092 | 2,692 |
| 2010 | 2,740 | 0 | 2,740 | 0 | 2,587 | 600 | (1,987) | | 7,984 | 0 | 0 | 0 | 2,140 | 2,740 |
| 2011 | 2,810 | 22 | 2,832 | 0 | 2,632 | 600 | (2,032) | | 10,016 | 0 | 0 | 22 | 2,210 | 2,832 |
| 2012 | 2,880 | 44 | 2,924 | 0 | 2,587 | 600 | (1,987) | | 12,003 | 0 | 0 | 44 | 2,280 | 2,924 |
| 2013 | 2,950 | 66 | 3,016 | 0 | 2,557 | 600 | (1,957) | | 13,960 | 0 | 0 | 66 | 2,350 | 3,016 |
| 2014 | 3,020 | 88 | 3,108 | 0 | 432 | 315 | (117) | | 14,077 | 0 | 0 | 88 | 2,705 | 3,108 |
| 2015 | 3,090 | 110 | 3,200 | 0 | 403 | 315 | (88) | | 14,165 | 1,120 | 0 | 110 | 1,655 | 3,200 |
| 2016 | 3,155 | 117 | 3,272 | 0 | 373 | 315 | (58) | | 14,223 | 1,120 | 0 | 117 | 1,720 | 3,272 |
| 2017 | 3,220 | 124 | 3,344 | 0 | 344 | 315 | (29) | | 14,252 | 1,120 | 0 | 124 | 1,785 | 3,344 |
| 2018 | 3,285 | 131 | 3,416 | 0 | 315 | 315 | 0 | | 14,252 | 1,120 | 0 | 131 | 1,850 | 3,416 |
| 2019 | 3,350 | 138 | 3,488 | 0 | 315 | 315 | 0 | | 14,251 | 1,120 | 0 | 138 | 1,915 | 3,488 |
| 2020 | 3,415 | 145 | 3,560 | 0 | 315 | 315 | 0 | | 14,251 | 1,120 | 0 | 145 | 1,980 | 3,560 |
| 2021 | 3,474 | 154 | 3,628 | 0 | 315 | 315 | 0 | | 14,251 | 1,232 | 0 | 154 | 1,927 | 3,628 |
| 2022 | 3,533 | 163 | 3,696 | 0 | 315 | 315 | 0 | | 14,251 | 1,344 | 0 | 163 | 1,874 | 3,696 |
| 2023 | 3,592 | 172 | 3,764 | 0 | 315 | 315 | 0 | | 14,251 | 1,456 | 0 | 172 | 1,821 | 3,764 |
| 2024 | 3,651 | 181 | 3,832 | 0 | 315 | 315 | 0 | | 14,250 | 1,568 | 0 | 181 | 1,768 | 3,832 |
| 2025 | 3,710 | 190 | 3,900 | 0 | 315 | 315 | 0 | | 14,250 | 1,680 | 0 | 190 | 1,715 | 3,900 |
| 2026 | 3,779 | 201 | 3,980 | 0 | 315 | 315 | 0 | | 14,250 | 1,792 | 0 | 201 | 1,672 | 3,980 |
| 2027 | 3,848 | 212 | 4,060 | 0 | 315 | 315 | 0 | | 14,250 | 1,904 | 0 | 212 | 1,629 | 4,060 |
| 2028 | 3,918 | 222 | 4,140 | 0 | 315 | 315 | 0 | | 14,250 | 2,016 | 0 | 222 | 1,587 | 4,140 |
| 2029 | 3,987 | 233 | 4,220 | 0 | 315 | 315 | 0 | | 14,249 | 2,128 | 0 | 233 | 1,544 | 4,220 |
| 2030 | 4,056 | 244 | 4,300 | 0 | 315 | 315 | 0 | | 14,249 | 2,240 | 0 | 244 | 1,501 | 4,300 |

1 – Calendar year.

2 – Water Demands and Supplies from SMWC 2005 Urban Water Management Plan prepared by Water Systems Consulting, August 2005.

3 – Strict interpretation of the Beaumont Basin Adjudication approved by the Court in 2004.

4 – Per direction from George Jorritsma.

5 – Assumes that water stored in SMWC storage account is allowed to accrue and be available during shortages on SWP or for lease/assignment to other parties.

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Table 6
Water Demand and Water Supply Plan for the Yucaipa Valley Water District Area in the SGPWA Service Area
 (acre-ft/yr)

| Beaumont Basin Rights and Production | | Year ¹ | Demands ² | | | Supplies ⁴ | | | | | | | | | | | | | |
|--------------------------------------|------|-------------------|----------------------|-----------------|-------|---|---|----------------------------------|---|--|---|-------------------|-------------------------|---|--|-------------------------------|----------------|----------------------------------|--------------|
| | | | Potable | Non Potable | Total | Recycled Water Production Available for Use | Beaumont Basin Rights and Production ³ | | | | | | | | Imported SWP Water from SGPWA for Direct Potable Use | Non Potable Water | | Yucaipa Area Groundwater Basins | Total Supply |
| | | | | | | | Rights Per 2004 Stipulated Agreement | SWP Water Purchased for Recharge | Annual Production Right per 2004 Adjudication | YVWD Beaumont Pumping for use in SGPWA Area ⁴ | YVWD Beaumont Pumping Exported from SGPWA Area ⁴ | Total | Over (Under) Production | Volume in YVWD Storage Account ⁵ | | Imported SWP Water from SGPWA | Recycled Water | | |
| | | | | | | | | | | | | | | | | | | | |
| (9) | (1) | (2) | (3) | (4) =(2)+(3) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) =(11)-(9) | (13) | (14) | (15) | (16) | (17) | (18) =(8)+(14)+(15)+(16)+(17) | |
| 173 | 2006 | 1,600 | 0 | 1,600 | 800 | 2,173 | 0 | 2,173 | 200 | 1,827 | 2,027 | (146) | 1,412 | 0 | 0 | 0 | 1,400 | 1,600 | |
| 373 | 2007 | 1,400 | 300 | 1,700 | 700 | 2,373 | 0 | 2,373 | 300 | 2,000 | 2,300 | (73) | 1,485 | 400 | 100 | 200 | 700 | 1,700 | |
| 565 | 2008 | 1,700 | 450 | 2,150 | 850 | 2,565 | 0 | 2,565 | 350 | 2,000 | 2,350 | (215) | 1,700 | 600 | 335 | 115 | 750 | 2,150 | |
| 393 | 2009 | 2,000 | 600 | 2,600 | 1,000 | 3,393 | 0 | 3,393 | 400 | 2,000 | 2,400 | (993) | 2,693 | 800 | 450 | 150 | 800 | 2,600 | |
| 593 | 2010 | 2,250 | 750 | 3,000 | 1,125 | 3,593 | 0 | 3,593 | 463 | 2,000 | 2,463 | (1,130) | 3,823 | 1,000 | 565 | 185 | 787 | 3,000 | |
| 834 | 2011 | 2,500 | 900 | 3,400 | 1,250 | 3,834 | 0 | 3,834 | 463 | 2,000 | 2,463 | (1,371) | 5,195 | 1,100 | 675 | 225 | 937 | 3,400 | |
| 977 | 2012 | 2,750 | 1,050 | 3,800 | 1,375 | 3,977 | 0 | 3,977 | 463 | 2,000 | 2,463 | (1,514) | 6,709 | 1,200 | 780 | 270 | 1,087 | 3,800 | |
| 138 | 2013 | 3,000 | 1,200 | 4,200 | 1,500 | 4,138 | 0 | 4,138 | 463 | 2,000 | 2,463 | (1,675) | 8,384 | 1,300 | 900 | 300 | 1,237 | 4,200 | |
| 824 | 2014 | 3,250 | 1,350 | 4,600 | 1,625 | 4,124 | 0 | 4,124 | 463 | 2,000 | 2,463 | 639 | 7,746 | 1,550 | 1,015 | 335 | 1,237 | 4,600 | |
| 793 | 2015 | 3,500 | 1,500 | 5,000 | 1,750 | 4,793 | 0 | 4,793 | 463 | 2,000 | 2,463 | 670 | 7,075 | 1,800 | 1,125 | 375 | 1,237 | 5,000 | |
| 761 | 2016 | 3,750 | 1,650 | 5,400 | 1,875 | 4,761 | 0 | 4,761 | 463 | 2,000 | 2,463 | 702 | 6,373 | 2,050 | 1,235 | 415 | 1,237 | 5,400 | |
| 729 | 2017 | 4,000 | 1,800 | 5,800 | 2,000 | 4,729 | 0 | 4,729 | 463 | 2,000 | 2,463 | 734 | 5,639 | 2,300 | 1,350 | 450 | 1,237 | 5,800 | |
| 697 | 2018 | 4,250 | 1,950 | 6,200 | 2,125 | 4,697 | 0 | 4,697 | 463 | 2,000 | 2,463 | 766 | 4,873 | 2,550 | 1,465 | 485 | 1,237 | 6,200 | |
| 697 | 2019 | 4,500 | 2,100 | 6,600 | 2,250 | 4,697 | 0 | 4,697 | 463 | 2,000 | 2,463 | 766 | 4,107 | 2,800 | 1,575 | 525 | 1,237 | 6,600 | |
| 697 | 2020 | 4,685 | 2,250 | 6,935 | 2,343 | 4,697 | 0 | 4,697 | 463 | 2,000 | 2,463 | 766 | 3,342 | 2,985 | 1,685 | 565 | 1,237 | 6,935 | |
| 697 | 2021 | 4,870 | 2,400 | 7,270 | 2,435 | 4,697 | 0 | 4,697 | 463 | 2,000 | 2,463 | 766 | 2,576 | 3,170 | 1,800 | 600 | 1,237 | 7,270 | |
| 697 | 2022 | 5,055 | 2,550 | 7,605 | 2,528 | 4,697 | 0 | 4,697 | 463 | 2,000 | 2,463 | 766 | 1,810 | 3,355 | 1,915 | 635 | 1,237 | 7,605 | |
| 697 | 2023 | 5,240 | 2,700 | 7,940 | 2,620 | 4,697 | 0 | 4,697 | 463 | 2,000 | 2,463 | 766 | 1,044 | 3,540 | 2,025 | 675 | 1,237 | 7,940 | |
| 697 | 2024 | 5,425 | 2,850 | 8,275 | 2,713 | 4,697 | 0 | 4,697 | 463 | 2,000 | 2,463 | 766 | 278 | 3,725 | 1,850 | 1,000 | 1,237 | 8,275 | |
| 185 | 2025 | 5,610 | 3,000 | 8,610 | 2,805 | 4,697 | 488 | 2,185 | 463 | 2,000 | 2,463 | 278 | 0 | 3,910 | 1,685 | 1,335 | 1,237 | 8,610 | |
| 463 | 2026 | 5,795 | 3,150 | 8,945 | 2,898 | 4,697 | 766 | 2,463 | 463 | 2,000 | 2,463 | (0) | 0 | 4,095 | 1,480 | 1,670 | 1,237 | 8,945 | |
| 463 | 2027 | 5,980 | 3,300 | 9,280 | 2,990 | 4,697 | 766 | 2,463 | 463 | 2,000 | 2,463 | (0) | 0 | 4,280 | 1,295 | 2,005 | 1,237 | 9,280 | |
| 463 | 2028 | 6,165 | 3,450 | 9,615 | 3,083 | 4,697 | 766 | 2,463 | 463 | 2,000 | 2,463 | (0) | 0 | 4,465 | 1,110 | 2,340 | 1,237 | 9,615 | |
| 463 | 2029 | 6,350 | 3,600 | 9,950 | 3,175 | 4,697 | 766 | 2,463 | 463 | 2,000 | 2,463 | (0) | 0 | 4,650 | 925 | 2,675 | 1,237 | 9,950 | |
| 463 | 2030 | 6,535 | 3,750 | 10,285 | 3,268 | 4,697 | 766 | 2,463 | 463 | 2,000 | 2,463 | (0) | 0 | 4,750 | 825 | 2,925 | 1,322 | 10,285 | |

1 — Calendar year.

2 — Water Demands and Supplies from YVWD projections supplied by Joe Zoba on January 19, 2007.

3 — Strict interpretation of the Beaumont Basin Adjudication approved by the Court in 2004 and assumes that overliers will either be converted to non-potable supplies provided by YVWD or that their demands will have been replaced by appropriate uses.

4 — Assumes that YVWD will pump about 500 acre-ft/yr from the Beaumont Basin for use in SGPWA service area and will pump 2000 acre-ft/yr from the Beaumont Basin for export from the SGPWA to SBVMWD service area.

5 — Assumes that water stored in YVWD storage account is allowed to accrue and be available during shortages on SWP or for lease/assignment to other parties.

Table 7
BCVWD, Banning, CWD, SMWC and YVWD* Demand and Water Supply Summary
(acre-ft)

| Water Available to the Basin | | | Year | Total Demand | Supplies Available to the Major Water Suppliers to the BQFWA* | | | | | | | | | | | | | | | | | Surplus (Shortage) | Stored Water in the Reservoir Basin | |
|------------------------------|---|---------|--------|--------------|---|--------------|-----------------------|-----------------|----------------------|---------------------------------|--------|-------------------------------------|---|--|----------------------|------------|--------------------|--------|------------------------|--|---|--------------------|-------------------------------------|------------------------------------|
| | | | | | Local Supplies | | | | | | | Local Enhancements | | | Recycled Water Reuse | | Imported SWP Water | | Total Supply Available | | | | | |
| | | | | | Ballastown Basin ¹ | Edgar Canyon | Swimming Storage Unit | Swimming Canyon | Cabazon Storage Unit | Yonkers Area Groundwater Basins | Total | BQFWA Mobile Creek Recharge Project | Other New Stormwater Recharge in Ballastown Basin | New Returns from Use ² to Groundwater | Total | Direct Use | Recharge | Total | | BQFWA ³ Original Table "A" ¹ | BQFWA ³ Swimming & BQFWA Table "A" | | | Total Imported State Project Water |
| PHD Creek | Other New Stormwater Recharge in Ballastown Basin | Local E | 2006 | 27,700 | 20,313 | 2,549 | 2,014 | 6,366 | 1,600 | 3,303 | 36,145 | 0 | 200 | 450 | 650 | 0 | 0 | 0 | 4,700 | 0 | 4,700 | 41,495 | 13,795 | 14,815 |
| 0 | 2 | 2007 | 28,800 | 20,474 | 1,800 | 1,731 | 5,911 | 2,200 | 2,696 | 34,811 | 0 | 200 | 600 | 800 | 200 | 0 | 200 | 6,000 | 0 | 6,000 | 41,811 | 12,111 | 21,636 | |
| 0 | 2 | 2008 | 36,400 | 20,552 | 1,800 | 1,707 | 5,455 | 2,800 | 2,794 | 35,109 | 0 | 200 | 1,538 | 1,738 | 115 | 0 | 115 | 8,300 | 0 | 8,300 | 45,261 | 8,861 | 29,060 | |
| 2,800 | 1.7 | 2009 | 40,200 | 29,105 | 1,800 | 1,684 | 5,000 | 5,450 | 2,882 | 45,934 | 7,400 | 1,780 | 2,013 | 5,773 | 150 | 0 | 150 | 9,700 | 0 | 9,700 | 61,557 | 21,357 | 48,676 | |
| 2,800 | 2.0 | 2010 | 44,500 | 38,181 | 1,800 | 1,620 | 5,000 | 6,050 | 2,827 | 43,584 | 7,800 | 1,780 | 2,550 | 6,013 | 488 | 0 | 488 | 5,853 | 11,100 | 11,100 | 67,181 | 22,681 | 69,733 | |
| 2,000 | 2.0 | 2011 | 47,500 | 26,754 | 1,800 | 1,660 | 5,000 | 6,850 | 3,147 | 45,211 | 2,000 | 2,060 | 2,925 | 6,885 | 5,047 | 1,448 | 6,495 | 14,000 | 0 | 14,000 | 72,691 | 25,191 | 91,279 | |
| 2,000 | 2.0 | 2012 | 50,500 | 26,825 | 1,800 | 1,660 | 5,000 | 7,650 | 3,367 | 46,102 | 2,000 | 2,060 | 3,300 | 7,360 | 5,214 | 1,928 | 7,142 | 14,000 | 21,100 | 35,100 | 95,703 | 45,203 | 111,593 | |
| 2,000 | 2.0 | 2013 | 53,600 | 26,825 | 1,800 | 1,660 | 5,000 | 8,050 | 3,587 | 46,722 | 2,000 | 2,060 | 3,688 | 7,748 | 5,366 | 2,408 | 7,774 | 14,000 | 21,100 | 35,100 | 97,343 | 43,743 | 130,803 | |
| 2,000 | 2.0 | 2014 | 56,600 | 9,587 | 1,800 | 1,660 | 5,000 | 8,050 | 3,942 | 30,039 | 2,000 | 2,060 | 4,063 | 8,122 | 5,523 | 2,888 | 8,411 | 14,000 | 21,100 | 35,100 | 81,673 | 25,073 | 132,158 | |
| 3,000 | 2.0 | 2015 | 59,800 | 8,353 | 1,800 | 1,660 | 5,000 | 8,050 | 2,882 | 26,730 | 2,000 | 2,060 | 4,438 | 8,499 | 5,885 | 3,248 | 9,053 | 14,000 | 21,100 | 35,100 | 81,403 | 21,803 | 132,174 | |
| 2,000 | 2.0 | 2016 | 61,800 | 9,119 | 1,800 | 1,660 | 5,000 | 8,050 | 2,957 | 24,585 | 2,000 | 2,060 | 4,713 | 8,773 | 5,832 | 3,468 | 9,300 | 14,000 | 21,100 | 35,100 | 81,758 | 19,958 | 131,284 | |
| 2,000 | 2.0 | 2017 | 63,900 | 8,884 | 1,800 | 1,660 | 5,000 | 8,050 | 3,022 | 28,416 | 2,000 | 2,060 | 4,975 | 9,035 | 5,974 | 3,568 | 9,542 | 14,000 | 21,100 | 35,100 | 82,093 | 18,193 | 129,515 | |
| 2,000 | 2.0 | 2018 | 66,000 | 8,650 | 1,800 | 1,660 | 5,000 | 8,050 | 3,087 | 28,247 | 2,000 | 2,060 | 5,238 | 9,288 | 6,116 | 3,668 | 9,784 | 14,000 | 21,100 | 35,100 | 82,428 | 16,428 | 126,839 | |
| 2,000 | 2.0 | 2019 | 68,200 | 8,650 | 1,800 | 1,660 | 5,000 | 8,050 | 3,152 | 28,312 | 2,000 | 2,060 | 5,513 | 9,573 | 6,263 | 3,768 | 10,314 | 14,000 | 21,100 | 35,100 | 83,015 | 14,815 | 123,499 | |
| 2,000 | 2.0 | 2020 | 70,300 | 8,650 | 1,800 | 1,660 | 5,000 | 8,050 | 3,217 | 28,377 | 2,000 | 2,060 | 5,778 | 9,835 | 6,410 | 3,868 | 10,278 | 14,000 | 21,100 | 35,100 | 83,580 | 13,280 | 119,408 | |
| 2,000 | 2.0 | 2021 | 72,200 | 8,650 | 1,800 | 1,660 | 5,000 | 8,050 | 3,284 | 28,324 | 2,000 | 2,060 | 6,013 | 10,073 | 6,514 | 3,904 | 10,418 | 14,000 | 21,100 | 35,100 | 83,815 | 11,715 | 114,848 | |
| 2,000 | 2.0 | 2022 | 74,200 | 8,650 | 1,800 | 1,660 | 5,000 | 8,050 | 3,111 | 28,271 | 2,000 | 2,060 | 6,263 | 10,303 | 6,618 | 3,904 | 10,522 | 14,000 | 21,100 | 35,100 | 84,216 | 10,016 | 109,512 | |
| 2,000 | 2.0 | 2023 | 76,100 | 8,650 | 1,800 | 1,660 | 5,000 | 8,050 | 3,058 | 28,218 | 2,000 | 2,060 | 6,500 | 10,560 | 6,727 | 3,904 | 10,631 | 14,000 | 21,100 | 35,100 | 84,509 | 8,409 | 103,495 | |
| 2,000 | 2.0 | 2024 | 78,100 | 8,650 | 1,800 | 1,660 | 5,000 | 8,050 | 3,005 | 28,165 | 2,000 | 2,060 | 6,750 | 10,810 | 7,121 | 3,904 | 11,025 | 14,000 | 21,100 | 35,100 | 85,100 | 7,000 | 96,795 | |
| 3,000 | 2.0 | 2025 | 80,100 | 8,650 | 1,800 | 1,660 | 5,000 | 8,050 | 2,952 | 28,112 | 2,000 | 2,060 | 7,000 | 11,060 | 7,535 | 3,904 | 11,428 | 14,000 | 21,100 | 35,100 | 85,701 | 5,401 | 88,490 | |
| 2,000 | 2.0 | 2026 | 81,200 | 8,650 | 1,800 | 1,660 | 5,000 | 8,050 | 2,909 | 28,069 | 2,000 | 2,060 | 7,138 | 11,188 | 7,931 | 3,904 | 11,835 | 14,000 | 21,100 | 35,100 | 86,202 | 5,002 | 82,638 | |
| 2,000 | 2.0 | 2027 | 82,400 | 8,650 | 1,800 | 1,660 | 5,000 | 8,050 | 2,866 | 28,026 | 2,000 | 2,060 | 7,288 | 11,348 | 8,337 | 3,904 | 12,241 | 14,000 | 21,100 | 35,100 | 86,715 | 4,315 | 74,733 | |
| 2,000 | 2.0 | 2028 | 83,400 | 8,650 | 1,800 | 1,660 | 5,000 | 8,050 | 2,824 | 27,984 | 2,000 | 2,060 | 7,413 | 11,473 | 8,742 | 3,904 | 12,646 | 14,000 | 21,100 | 35,100 | 87,203 | 3,803 | 66,165 | |
| 2,000 | 2.0 | 2029 | 84,600 | 8,650 | 1,800 | 1,660 | 5,000 | 8,050 | 2,781 | 27,941 | 2,000 | 2,060 | 7,563 | 11,623 | 9,148 | 3,904 | 13,052 | 14,000 | 21,100 | 35,100 | 87,716 | 3,116 | 56,894 | |
| 2,000 | 2.0 | 2030 | 85,700 | 8,650 | 1,800 | 1,660 | 5,000 | 8,050 | 2,737 | 27,897 | 2,000 | 2,060 | 7,700 | 11,780 | 9,606 | 3,904 | 13,373 | 14,000 | 21,100 | 35,100 | 88,218 | 2,516 | 41,888 | |

* Part of YVWD in San Geronimo Pass Water Agency service area.

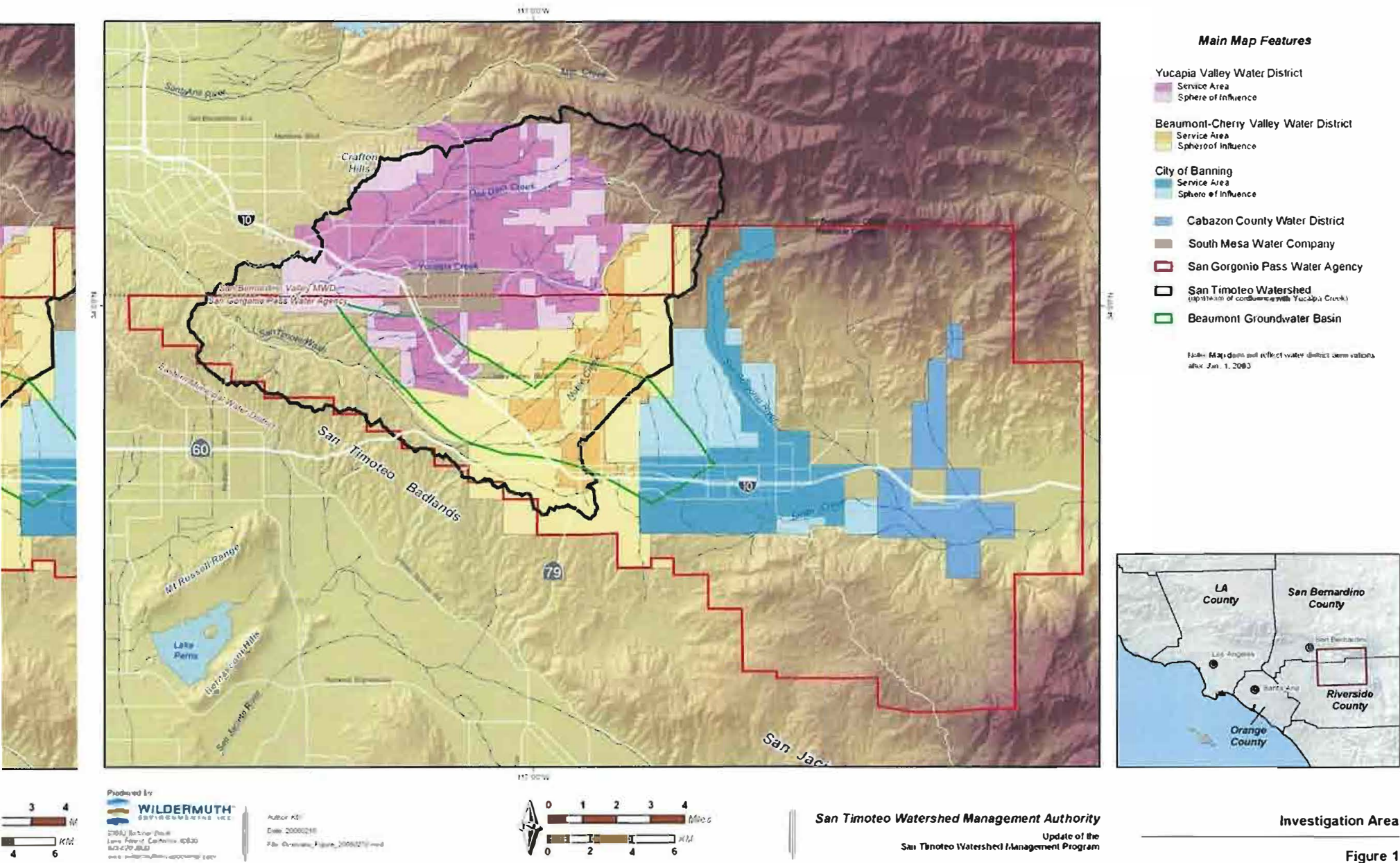
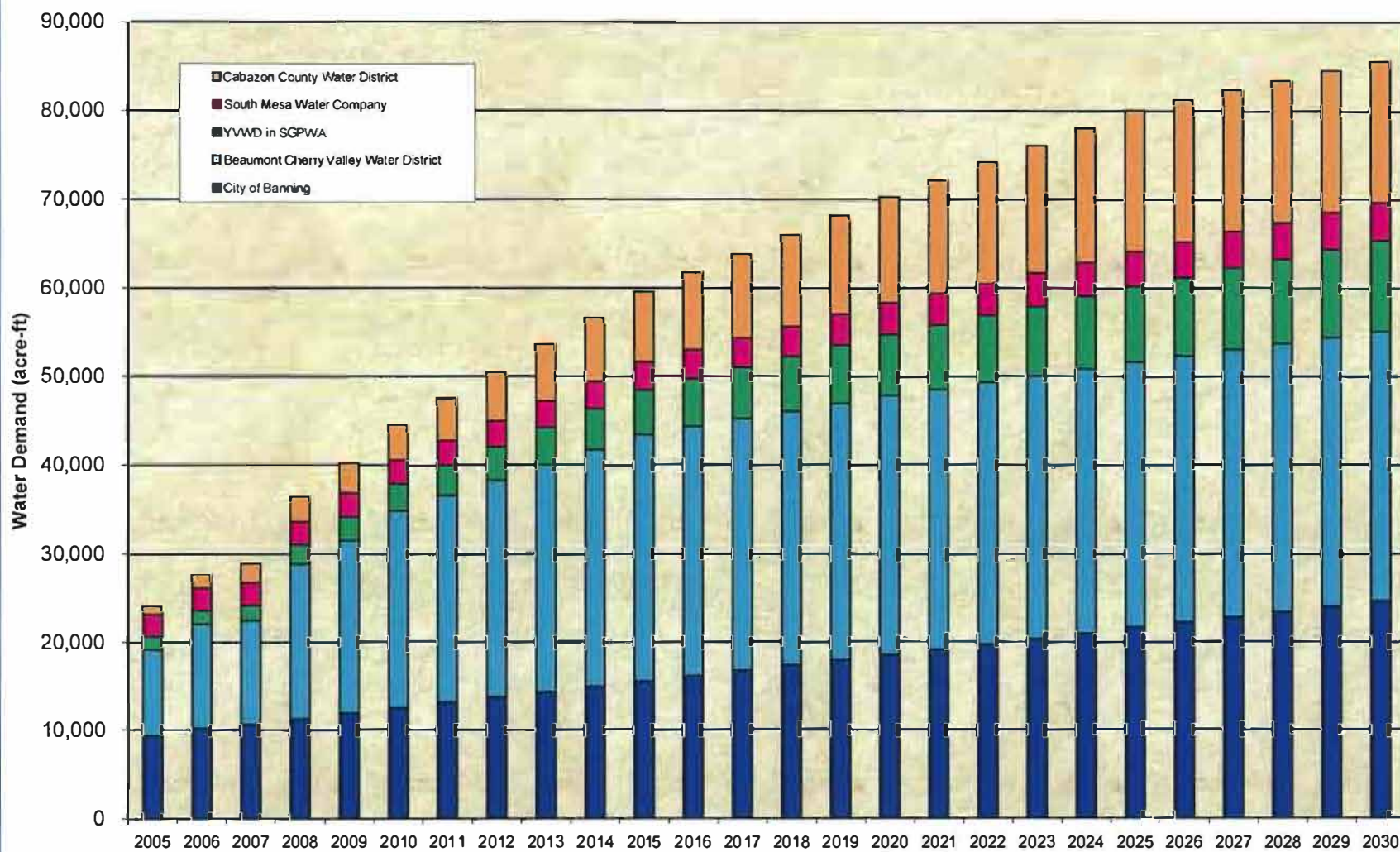


Figure 2 – Projected Water Demands for Banning, BCVWD, YVWD, SMWC and CCWD
Based on Planning Information Provided by the Retail Agencies



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Figure 3 – Projected Water Supply Plan and Demand for Banning, the BCVWD, the SMWC, and Riverside County Part of the YVWD Based on Planning Information Provided by these Retail Agencies

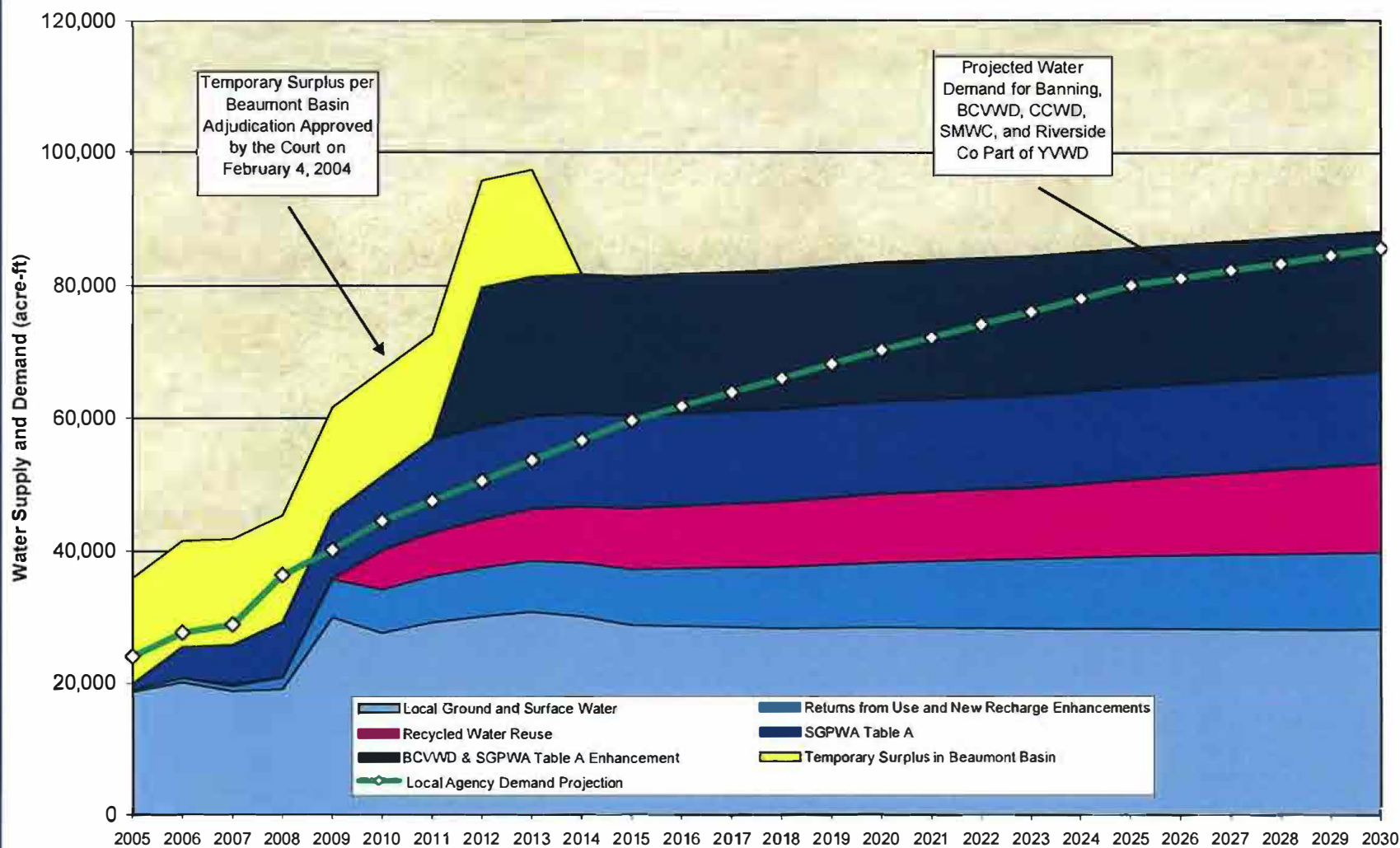


EXHIBIT A

Sunny-Cal
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| Year | Sunny-Cal Egg and Poultry Company ^{1,2} | | | | | | | | | |
|------|--|------|--------|---------------------|-----------------------|----------------|----------------|-------------------|----------------|-------------------|
| | Overlying Right | Used | Unused | Direct Use by BCVWD | Distribution of Users | | | | Total to BCVWD | Total Transferred |
| | | | | | BCVWD 42.51% | YVWD 13.58% | SMWC 12.48% | Banning 31.43% | | |
| 2004 | 1,784 | 452 | 1,332 | 0 | 566 | 181 | 166 | 419 | 566 | 0 |
| 2005 | 1,784 | 452 | 1,332 | 0 | 566 | 181 | 166 | 419 | 566 | 0 |
| 2006 | 1,784 | 0 | 1,784 | 0 | 758 | 242 | 223 | 561 | 758 | 0 |
| 2007 | 1,784 | 0 | 1,784 | 0 | 758 | 242 | 223 | 561 | 758 | 0 |
| 2008 | 1,784 | 0 | 1,784 | 0 | 758 | 242 | 223 | 561 | 758 | 0 |
| 2009 | 1,784 | 0 | 1,784 | 493 | 549 | 175 | 161 | 406 | 1,042 | 1,825 |
| 2010 | 1,784 | 0 | 1,784 | 493 | 549 | 175 | 161 | 406 | 1,042 | 1,825 |
| 2011 | 1,784 | 0 | 1,784 | 493 | 549 | 175 | 161 | 406 | 1,042 | 2,277 |
| 2012 | 1,784 | 0 | 1,784 | 493 | 549 | 175 | 161 | 406 | 1,042 | 2,277 |
| 2013 | 1,784 | 0 | 1,784 | 493 | 549 | 175 | 161 | 406 | 1,042 | 2,277 |
| 2014 | 1,784 | 0 | 1,784 | 493 | 549 | 175 | 161 | 406 | 1,042 | 1,784 |
| 2015 | 1,784 | 0 | 1,784 | 493 | 549 | 175 | 161 | 406 | 1,042 | 1,784 |
| 2016 | 1,784 | 0 | 1,784 | 493 | 549 | 175 | 161 | 406 | 1,042 | 1,784 |
| 2017 | 1,784 | 0 | 1,784 | 493 | 549 | 175 | 161 | 406 | 1,042 | 1,784 |
| 2018 | 1,784 | 0 | 1,784 | 493 | 549 | 175 | 161 | 406 | 1,042 | 1,784 |

1 – Unused rights are not transferred until after preceding five year period; direct use is transferred the same year.

2 – Assumes area served by BCVWD in 2009.

fter preced

1 – Unused rights are not transferred until after preceding five year period; direct use is transferred the same year.

| Direct Use BCVWD 25.00% | Year | Oak Valley Partners ¹ | | | | | | | | | | | |
|-------------------------------|------|----------------------------------|------|--------|---------------------------------|----------------------------------|-----------------------|----------------|----------------|-------------------|------------------|-------------------|----------------------|
| | | Overlying Right | Used | Unused | Direct Use by YVWD 75.00% | Direct Use by BCVWD 25.00% | Distribution of Users | | | | Total to YVWD | Total to BCVWD | Total Transferred |
| | | | | | | | BCVWD 42.51% | YVWD 13.58% | SMWC 12.48% | Banning 31.43% | | | |
| | 2004 | 1,806 | 500 | 1,306 | 0 | | 555 | 177 | 163 | 410 | 177 | 555 | 0 |
| | 2005 | 1,806 | 400 | 1,406 | 0 | | 598 | 191 | 175 | 442 | 191 | 598 | 0 |
| | 2006 | 1,806 | 480 | 1,326 | 0 | | 564 | 180 | 165 | 417 | 180 | 564 | 0 |
| 200 | 2007 | 1,806 | 500 | 1,306 | 200 | 200 | 385 | 123 | 113 | 285 | 323 | 585 | 400 |
| 242 | 2008 | 1,806 | 500 | 1,306 | 392 | 242 | 286 | 91 | 84 | 211 | 484 | 527 | 634 |
| 284 | 2009 | 1,806 | 0 | 1,806 | 585 | 284 | 399 | 127 | 117 | 295 | 712 | 682 | 2,175 |
| 326 | 2010 | 1,806 | 0 | 1,806 | 777 | 326 | 299 | 95 | 88 | 221 | 873 | 625 | 2,509 |
| 368 | 2011 | 1,806 | 0 | 1,806 | 970 | 368 | 199 | 64 | 58 | 147 | 1,033 | 567 | 2,663 |
| 410 | 2012 | 1,806 | 0 | 1,806 | 1,162 | 410 | 100 | 32 | 29 | 74 | 1,194 | 509 | 2,478 |
| 452 | 2013 | 1,806 | 0 | 1,806 | 1,355 | 452 | 0 | 0 | 0 | 0 | 1,355 | 452 | 2,478 |
| 452 | 2014 | 1,806 | 0 | 1,806 | 1,355 | 452 | 0 | 0 | 0 | 0 | 1,355 | 452 | 2,743 |
| 452 | 2015 | 1,806 | 0 | 1,806 | 1,355 | 452 | 0 | 0 | 0 | 0 | 1,355 | 452 | 2,509 |
| 452 | 2016 | 1,806 | 0 | 1,806 | 1,355 | 452 | 0 | 0 | 0 | 0 | 1,355 | 452 | 2,275 |
| 452 | 2017 | 1,806 | 0 | 1,806 | 1,355 | 452 | 0 | 0 | 0 | 0 | 1,355 | 452 | 2,040 |
| 452 | 2018 | 1,806 | 0 | 1,806 | 1,355 | 452 | 0 | 0 | 0 | 0 | 1,355 | 452 | 1,806 |

1 -- Unused rights are not transferred until after preceding five year period; direct use is transferred the same year.

fter preced

1 -- Unused rights are not transferred until after preceding five year period; direct use is transferred the same year.

| Used | E |
|-------|---|
| 1,251 | |
| 1,269 | |
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transferred un

| Year | Minor Overliers ¹ | | | | | | | |
|------|------------------------------|------|--------|-----------------------|----------------|----------------|-------------------|-------------------|
| | Overlying Right | Used | Unused | Distribution of Users | | | | Total Transferred |
| | | | | BCVWD 42.51% | YVWD 13.58% | SMWC 12.48% | Banning 31.43% | |
| 2004 | 1,910 | 659 | 1,251 | 532 | 170 | 156 | 393 | 0 |
| 2005 | 1,910 | 641 | 1,269 | 540 | 172 | 158 | 399 | 0 |
| 2006 | 1,910 | 734 | 1,176 | 500 | 160 | 147 | 370 | 0 |
| 2007 | 1,910 | 678 | 1,232 | 524 | 167 | 154 | 387 | 0 |
| 2008 | 1,910 | 678 | 1,232 | 524 | 167 | 154 | 387 | 0 |
| 2009 | 1,910 | 678 | 1,232 | 524 | 167 | 154 | 387 | 1,251 |
| 2010 | 1,910 | 678 | 1,232 | 524 | 167 | 154 | 387 | 1,269 |
| 2011 | 1,910 | 678 | 1,232 | 524 | 167 | 154 | 387 | 1,176 |
| 2012 | 1,910 | 678 | 1,232 | 524 | 167 | 154 | 387 | 1,232 |
| 2013 | 1,910 | 678 | 1,232 | 524 | 167 | 154 | 387 | 1,232 |
| 2014 | 1,910 | 678 | 1,232 | 524 | 167 | 154 | 387 | 1,232 |
| 2015 | 1,910 | 678 | 1,232 | 524 | 167 | 154 | 387 | 1,232 |
| 2016 | 1,910 | 678 | 1,232 | 524 | 167 | 154 | 387 | 1,232 |
| 2017 | 1,910 | 678 | 1,232 | 524 | 167 | 154 | 387 | 1,232 |
| 2018 | 1,910 | 678 | 1,232 | 524 | 167 | 154 | 387 | 1,232 |

1 – Unused rights are not transferred until after preceding five year period; direct use is transferred the same year.

APPENDIX B

COOPERATIVE AGREEMENT WITH REGIONAL WATER QUALITY CONTROL BOARD

COOPERATIVE AGREEMENT
TO PROTECT WATER QUALITY AND ENCOURAGE THE CONJUNCTIVE USES OF IMPORTED
WATER IN THE SANTA ANA RIVER BASIN

This Cooperative Agreement to Protect Water Quality and Encourage the Conjunctive Uses of Imported Water in the Santa Ana River Basin (“**Agreement**”) is entered into and effective this 18th day of July, 2007 by and among the California Regional Water Quality Control Board, Santa Ana Region (the “**Regional Board**”) and the entities listed in paragraph 11(n) below. The Regional Board and each of the entities listed in paragraph 11(n) below are individually referred to as a “**Party**” and are collectively referred to as the “**Parties**.”

Recitals

A. Water imported to the Santa Ana River Region, as defined in Water Code section 13200(e) (the “**Region**”), from the State Water Project, the Colorado River and other sources, and to groundwater basins within the Region from other groundwater basins within the Region, is vital to meet present and future demands for water within the Region. Such water is directly used; injected or percolated within groundwater basins; stored in a groundwater basin for later use; may be combined with or used in addition to the native groundwater supplies in a basin; may be exported/imported from one basin to another; and after consumptive use may form a portion of the wastewater that is treated, recharged and reused within the Region. Such conjunctive uses of surface water and groundwater within the Region have been contemplated by the State of California at least since the issuance of the original California Water Plan in 1957 and the adoption by the State Water Quality Control Board of Resolution No. 64-1.

B. The Regional Board is charged by statute with adopting such water quality objectives as may be required to protect the beneficial uses of water within the Region. In particular, the long-term conjunctive use of groundwater in the Region requires that the quality of water in groundwater basins in the Region be managed to meet the water quality objectives for nitrogen and total dissolved solids (collectively, the “**Salinity Objectives**”) adopted by the Regional Board in the 1995 Water Quality Control Plan for the Santa Ana River Basin, as amended in 2004 by R8 2004-0001 (the “**Basin Plan**”).

C. The Salinity Objectives presently included in the Basin Plan are the result of a multi-year, multi-million dollar cooperative effort among many of the Parties. The Salinity Objectives are a product of the best scientific and technical information available.

D. The Legislature has declared that the facilitation of voluntary transfers of water and water rights is the established policy of the State. The Legislature has further declared that voluntary water transfers between water users can result in a more efficient use of water and can allow more intensive use of developed water resources so as to conserve all available water resources. The Legislature has directed the Regional Board to encourage voluntary transfers of water and water rights.

E. The Parties disagree whether the Regional Board may regulate the conjunctive uses of imported water in the Region by means of general waste discharge requirements. Some of the Parties believe the Regional Board lacks authority to regulate the conjunctive uses of water in the Region because, they contend, such water does not constitute "waste" as defined in Water Code section 13050(d); the Regional Board and other Parties believe the Regional Board has such authority.

F. To avoid costly and time-consuming litigation brought to resolve the scope of the Regional Board's authority to regulate imported water and without prejudice to the Parties' competing views on this question, the Parties wish to act cooperatively with the goal of achieving compliance with the Salinity Objectives without the necessity of general waste discharge requirements.

G. The Parties wish to memorialize the terms of their cooperative effort by means of this Agreement.

Agreements

1. *Purpose of Agreement*

This Agreement is intended to allow the Parties to monitor and improve water quality within the Santa Ana River Region in a manner that is consistent both with adopted water quality objectives and with the needs of the inhabitants of the Region for a reliable supply of water. This Agreement is limited in scope to compliance with and implementation of the Salinity Objectives.

2. *Parties*

The Regional Board or any public agency or non-profit mutual water company that imports water to the Region, exports/imports water between basins within the Region, recharges such imported water within the Region, delivers such imported water for potable use within the Region, or treats and/or recharges wastewater within the Region that includes imported water may become a Party to this Agreement.

3. *Term of Agreement*

This Agreement will have an initial term of 10 years and shall automatically renew for subsequent 10-year periods, *provided* that any Party may withdraw at any time by providing one year's written notice of withdrawal to all other Parties.

4. *Preparation of Triennial Water Quality Report*

The Parties that intentionally recharge imported water within the Santa Ana Region (the "**Recharging Parties**") agree voluntarily to collect, compile and analyze the N/TDS water quality data necessary to determine whether the intentional recharge of imported water in the Region may have a significant adverse impact on compliance with the Salinity Objectives within

Objectives.

2. *Parties*

the Region. To that end, the Recharging Parties will collect, compile and analyze such N/TDS water quality data and prepare, within eighteen months from the effective date of this Agreement and every three years thereafter, a report containing the following information:

- a. A summary of the then-current ambient water quality in each groundwater management zone and a comparison of that ambient water quality with the Salinity Objectives. The Recharging Parties shall calculate ambient water quality for each groundwater management zone in a manner that allows for a technically valid comparison with the Salinity Objectives.
- b. A summary of the amount and quality of imported water recharged in each groundwater management zone during the previous three-year period.
- c. The initial report and each report prepared at six-year intervals thereafter will include a projection of ambient water quality in each groundwater management zone for the subsequent 20 years.
 - (1) The projection of ambient water quality for each groundwater management zone will be based upon professionally accepted modeling techniques, will reasonably account for surface fluxes of salt input, will reflect the effects of all existing and reasonably foreseeable recharge projects for which there is a certified environmental document and will compare baseline ambient water quality with the Salinity Objectives.
 - (2) The projections for different groundwater management zones may be based on different modeling techniques.
 - (3) Each report that includes a 20-year projection of ambient water quality will also present a comparison of then-current water quality in each groundwater management zone with the ambient water quality projection made six years earlier, together with an evaluation of the reason(s) for any differences.

The Recharging Parties will agree among themselves regarding the manner in which they will prepare the report and the manner in which they will share the cost of preparing the report. The Recharging Parties will circulate a draft version of each report to all other Parties for review and written comments for at least a 45-day period. The Recharging Parties shall consider written comments received on the draft report in preparing the final report. Upon completion of the final report, the Recharging Parties shall promptly lodge the final report with the Regional Board.

5. *CEQA Review of Proposed Projects*

Each Recharging Party agrees that, when it serves as a lead agency under the California Environmental Quality Act ("CEQA") for a proposed project involving the recharge of imported water within the Region, it will analyze that project as follows:

- (3) Each report that includes a 20-year projection of ambient water quality will also present a comparison of then-current water quality in each

- a. The environmental document will include the water quality data compiled in the most recent triennial report to the Regional Board (see paragraph 4 above) in the analysis of the potential impacts of the proposed project.
- b. The environmental document will incorporate professionally acceptable modeling techniques. The Parties agree that the following models meet this standard:
- (1) The Wildermuth models used to establish maximum benefit objectives.
 - (2) The Orange County Basin Groundwater Model.
 - (3) The USGS/Geoscience/Secor model of the Bunker Hill Groundwater Basin.
 - (4) The Chino Basin Watermaster/Inland Empire Utilities Agency model.
 - (5) The Beaumont-Cherry Valley model for the Beaumont management zone
 - (6) Eastern Municipal Water District's San Jacinto Groundwater Model.
 - (7) Elsinore Valley Municipal Water District's Elsinore Basin Groundwater Model.
 - (8) The USGS model of the Beaumont Basin (with MT3D package or equivalent added).
- Updates/refinements of these models are presumed to be professionally acceptable.
- c. A Recharging Party may base its environmental analysis on a model other than those described above if that model has been presented to the Regional Board at least 180 days prior to the release of the draft environmental document and there has been a determination by the Regional Board or its staff that the alternative model is acceptable.
- (1) The Regional Board agrees that an alternative model is acceptable for purposes of this Agreement if the proponent of that model can demonstrate with reasonable certainty that the relative error of the model's calibration for the groundwater management zones in question for a reasonable base period is $\pm 10\%$ or less when compared with existing groundwater data.
 - (2) The provisions of the immediately preceding paragraph are not to be construed to preclude other means or methodologies for an alternative model's proponent to demonstrate to the Regional Board that an alternative model is acceptable for purposes of this Agreement.

(3) If an alternative model has not been deemed acceptable by the Regional Board or its staff and a lead agency wishes to include results from that model in the environmental document, the lead agency shall include results from both the alternative model and one of the pre-approved models in the environmental document.

d. The environmental document will include the following analyses:

(1) A summary of the condition of the groundwater management zones, as reflected in the most recent triennial report to the Regional Board, that might be affected by the project.

(2) A 20-year projection of water quality in the groundwater management zone with the proposed project and a comparison of that water quality with conditions expected without the project.

(3) A comparison of the 20-year water quality projection for conditions with the proposed project with the Salinity Objectives for the groundwater management zone.

(4) A description and evaluation of any measures proposed to mitigate the potential effects of the proposed project.

e. The draft environmental document will be circulated to all Parties.

f. Each Recharging Party agrees to adopt the operative guidelines contained in this paragraph 5 as part of its CEQA implementing procedures pursuant to section 15022 of the CEQA Guidelines.

g. The environmental document shall include, if required under CEQA, an effective mitigation monitoring and reporting plan that enables the lead agency to demonstrate compliance with applicable regulatory standards and any performance standards adopted in the environmental document.

6. *Basin Planning Updates*

The Regional Board will review and, if appropriate, revise water quality objectives for the purpose of facilitating the recharge of imported water in groundwater management zones within the Region. The Parties agree to cooperate in such efforts and agree to work cooperatively to develop a program that addresses the use and allocation of assimilative capacity as part of overall Basin planning and management.

7. *Enforcement*

If the Recharging Parties fail timely to prepare the triennial report described in paragraph 4 above or if a Recharging Party fails to include the analyses described in paragraph 5 above in an environmental document prepared in connection with a proposed project involving the recharge of imported water, then any other Party may enforce the terms of this Agreement as

193 follows.

194 If the dispute relates to the triennial report on water quality, the Regional Board will hold
195 a hearing asking the Recharging Parties to provide an explanation for the delay or failure to
196 prepare the report. Such a hearing will precede an action for specific performance of the terms
197 of this Agreement by the Regional Board. In the event that the dispute relates to the failure of a
198 Party to provide the appropriate analysis in an environmental document, that dispute will be
199 addressed by the Party(ies) using the remedies available under CEQA.

200 The Parties recognize that nothing in this Agreement can or is intended to divest the
201 Regional Board of its authority under the Porter-Cologne Water Quality Control Act.
202 Furthermore, nothing in this Agreement shall be construed as a waiver by any Party of any
203 remedies it may have against a non-Party for interference with the implementation of this
204 Agreement.

205 8. *Books and Records*

206 Each Party shall have access to and the right to examine any of the other Parties'
207 pertinent books, documents, papers or other records (including, without limitation, records
208 contained on electronic media) relating to the performance of that Party's obligations pursuant to
209 this Agreement. The Parties shall each retain all such books, documents, papers or other records
210 for at least four years after the termination of this Agreement to facilitate such review. Access
211 to each Party's books and records shall be during normal business hours only. Nothing in this
212 paragraph shall be construed to operate as a waiver of any applicable privileges.

213 9. *No Admissions*

214 Nothing in this Agreement shall be construed as an admission by any Party regarding any
215 subject matter of this Agreement, including but not limited to the authority of the Regional Board
216 to regulate the importation of water to the Region. The Parties agree that Evidence Code
217 sections 1152 and 1154 render this Agreement inadmissible as evidence against any of the
218 Parties in any adjudicative proceeding, except a proceeding to enforce or interpret the terms or
219 conditions of this Agreement.

220 10. *Preservation of Rights*

221 The Parties agree that this Agreement is in settlement of a dispute and preserves all rights
222 of the Parties as they may exist as of the effective date of this Agreement.

223 11. *General Provisions*

224 a. *Authority.* Each signatory of this Agreement represents that s/he is authorized to
225 execute this Agreement on behalf of the Party for which s/he signs. Each Party
226 represents that it has legal authority to enter into this Agreement and to perform
227 all obligations under this Agreement.

228 b. *Amendments.* This Agreement may only be amended with the approval of all
229 Parties.

214 Nothing in this Agreement shall be construed as an admission by any Party regarding any
215 subject matter of this Agreement, including but not limited to the authority of the Regional Board

- 230 c. *Jurisdiction and Venue.* This Agreement shall be governed by and construed in
231 accordance with the laws of the State of California, except for its conflicts of law
232 rules. Any suit, action, or proceeding brought under the scope of this Agreement
233 shall be brought and maintained to the extent allowed by law in the County of
234 Riverside, California.
- 235 d. *Representations and Warranties.* Each representation and warranty contained
236 herein or made pursuant hereto shall be deemed to be material and to have been
237 relied upon and shall survive the execution, delivery and termination of this
238 Agreement.
- 239 e. *Entire Agreement.* This Agreement constitutes the entire agreement of the Parties
240 with respect to the subject matter of this Agreement and supersedes any prior oral
241 or written agreement, understanding, or representation relating to the subject
242 matter of this Agreement.
- 243 f. *Successors and Assigns.* This Agreement shall be binding on and inure to the
244 benefit of the successors and assigns of the respective Parties to this Agreement.
245 No Party may assign its interests in or obligations under this Agreement without
246 the written consent of the other Parties, which consent shall not be unreasonably
247 withheld or delayed.
- 248 g. *Advice of Counsel; Drafting by Negotiations.* This Agreement has been arrived at
249 through negotiations and each Party has had a full and fair opportunity to revise
250 the terms of this Agreement. As a result, the normal rule of construction that any
251 ambiguities are to be resolved against the drafting Party shall not apply in the
252 construction or interpretation of this Agreement. Each Party represents that it has
253 sought and obtained any legal advice it deems necessary from its own separate
254 counsel before entering into this Agreement.
- 255 h. *Waiver.* No waiver of any violation or breach of this Agreement shall be
256 considered to be a waiver of any other violation or breach of this Agreement, and
257 forbearance to enforce one or more of the remedies provided in this Agreement
258 shall not be deemed to be a waiver of that remedy.
- 259 i. *Severability.* If, after the date of execution of this Agreement, any provision of
260 this Agreement is held to be illegal, invalid, or unenforceable under present or
261 future laws effective during the term of this Agreement, such provision shall be
262 fully severable. However, in lieu thereof, there shall be added a provision as
263 similar in terms to such illegal, invalid or unenforceable provision as may be
264 possible and be legal, valid and enforceable.
- 265 j. *Compliance with Laws.* In performing their respective obligations under this
266 Agreement, the Parties shall comply with and conform to all applicable laws,
267 rules, regulations and ordinances.

- 268 k. *No Third-Party Beneficiaries.* This Agreement shall not create any right or
269 interest in any non-Party or in any member of the public as a third party
270 beneficiary.
- 271 l. *Necessary Actions.* Each Party agrees to execute and deliver additional
272 documents and instruments and to take any additional actions as may be
273 reasonably required to carry out the purposes of this Agreement.
- 274 m. *Counterparts.* This Agreement may be executed in one or more counterparts,
275 which may be executed and delivered via facsimile transmission, each of which
276 shall be deemed to be an original, but all of which together shall constitute but
277 one and the same instrument.
- 278 n. *Notices.* All notices, requests, demands or other communications required or
279 permitted under this Agreement shall be in writing unless provided otherwise in
280 this Agreement and shall be deemed to have been duly given and received on:
281 (i) the date of service if served personally or served by facsimile transmission on
282 the Party to whom notice is to be given at the address(es) provided below, (ii) on
283 the first day after mailing, if mailed by Federal Express, U.S. Express Mail, or
284 other similar overnight courier service, postage prepaid, and addressed as
285 provided below, or (iii) on the third day after mailing if mailed to the Party to
286 whom notice is to be given by first class mail, registered or certified, postage
287 prepaid, addressed as follows:

288 CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

289 California Regional Water Quality Control Board
290 Santa Ana Region
291 3737 Main St., Suite 500
292 Riverside, CA 92501
293 (951) 782-4130 ph
294 (951) 781-6288 fax

295 CITY OF CORONA

296 City of Corona
297 400 S. Vicentia Avenue
298 Corona, CA 92882-2187
299 (951) 736-2239 ph
300 (951) 736-2231 fax

301 CITY OF RIVERSIDE

302 City of Riverside
303 5950 Acorn Street
304 Riverside, CA 92504-1036
305 (951) 351-6080 ph
306 (951) 351-6267 fax

307 EASTERN MUNICIPAL WATER DISTRICT

308 Eastern Municipal Water District
309 2270 Trumble Road
310 Perris, CA 92570
311 P.O. Box 8300
312 Perris, CA 92572-8300
313 (951) 928-3777 ph
314 (951) 928-6177 fax

315 ELSINORE VALLEY MUNICIPAL WATER DISTRICT

316 Elsinore Valley Municipal Water District
317 31315 Chaney Street
318 Lake Elsinore, CA 92530
319 P.O. Box 3000
320 Lake Elsinore, CA 92531-3000

321 ORANGE COUNTY WATER DISTRICT

322 Orange County Water District
323 10500 Ellis Avenue
324 Fountain Valley, CA 92708-6921
325 P.O. Box 8300
326 Fountain Valley, CA 92728-8300
327 (714) 378-3200 ph
328 (714) 378-3371 fax

329 SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT

330 San Bernardino Valley Municipal Water District
331 1350 South "E" Street
332 San Bernardino, CA 92408-2725
333 P.O. Box 5906
334 San Bernardino, CA 92412-5906
335 (909) 387-9200 ph
336 (909) 387-9247 fax

337 SAN GORGONIO PASS WATER AGENCY

338 San Gorgonio Pass Water Agency
339 1210 Beaumont Avenue
340 Beaumont, CA 92223
341 (951) 845-2577 ph
342 (951) 845-0281 fax

343 WESTERN MUNICIPAL WATER DISTRICT

344 Western Municipal Water District
345 450 E. Alessandro Blvd.
346 Riverside, CA 92508-2449
347 P.O. Box 5286
348 Riverside, CA 92517-5286
349 (951) 789-5000 ph
350 (951) 780-3837 fax

CALIFORNIA REGIONAL WATER
QUALITY CONTROL BOARD

By: _____
Title:

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360 APPROVED AS TO FORM ONLY:
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362 By: _____

CITY OF CORONA

By: _____
Title:

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CITY OF RIVERSIDE

By: _____
Title: _____

APPROVED AS TO FORM ONLY:

By: _____

EASTERN MUNICIPAL WATER
DISTRICT

By: _____
Title: _____

APPROVED AS TO FORM ONLY:

By: _____

ELSINORE VALLEY MUNICIPAL
WATER DISTRICT

By: _____
Title: _____

APPROVED AS TO FORM ONLY:

By: _____

ORANGE COUNTY WATER DISTRICT

By: _____
Title: _____

APPROVED AS TO FORM ONLY:

By: _____

SAN BERNARDINO VALLEY
MUNICIPAL WATER DISTRICT

By: _____
Title: _____

APPROVED AS TO FORM ONLY:

By: _____

SAN GORGONIO PASS WATER
AGENCY

By: _____
Title: _____

APPROVED AS TO FORM ONLY:

By: _____

WESTERN MUNICIPAL WATER
DISTRICT

By: _____


Donald D. Galleano
President, Board of Directors

APPROVED AS TO FORM ONLY:

By: _____





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