SANTA MARGARITA RIVER WATERSHED

ANNUAL WATERMASTER REPORT

WATER YEAR 1991-92

UNITED STATES OF AMERICA
VS.
FALLBROOK PUBLIC UTILITY DISTRICT, ET AL

CIVIL NO. 1247 - SD-T

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SECTION 1 - SUMMARY

Section 1 - A summary of the Santa Margarita River Watershed Annual Watermaster Report for the 1991-92 Water Year.

Section 2 - This Annual Watermaster Report is prepared pursuant to Section II of the U. S. District Court Order dated March 13, 1989. The Court has retained jurisdiction over all surface flows of the Santa Margarita River Watershed and all underground waters determined by the Court to be subsurface flow of streams or creeks or which are determined by the Court to add to, support or contribute to the Santa Margarita River stream system. Thus imported waters, whether in storage in Lake Skinner or being transported through the Watershed, are outside Court jurisdiction, along with local, vagrant groundwaters which do not support the Santa Margarita River stream system.

Section 3 - Surface water flows were quite variable in 1991-92, ranging from 31 to 137 percent of normal at gaging stations with long records. Surface diversions to irrigation use totaled 701 acre feet compared with 891 acre feet in 1990-91. The total quantity of water in storage in the Watershed on September 30, 1992 was 22,490 acre feet of Santa Margarita River water and 38,073 acre feet of imported water.

Section 4 - Groundwater extractions were 42,696 acre feet compared to 39,938 acre feet in 1990-91. Water purveyors pumped 35,633 acre feet and 7,063 acre feet were pumped by other substantial users.

Section 5 - During 1991-92, 37,908 acre feet of water were imported and distributed in the Santa Margarita River Watershed by six water purveyors. This compares with 51,166 acre feet in 1990-91, a decrease of approximately 26 percent. Net exports, including wastewater, were 2,052 acre feet.

Section 6 - Water rights during the 1950's and 1960's consisted primarily of riparian and overlying rights. Other rights included appropriative rights and federal reserved rights. More recently, water purveyors in the Watershed have begun exercising groundwater appropriative rights. Appropriative surface water rights on file with the State Water Resources Control Board (SWRCB) amount to 906,892 gallons per day of direct diversion rights and 44,315.5 acre feet of active storage rights.

Section 7 - Total imported supplies plus local production totaled 81,306 acre feet compared to 91,995 in 1990-91. Of that quantity, 45,857 acre feet were used for agriculture, 3,094 acre feet were used for commercial purposes, and 24,161 acre feet were used for domestic purposes; 683 acre feet were discharged to Murrieta Creek; 2,370 acre feet of fresh water were exported and 8,194 acre feet were unaccounted for. Unaccounted for water is the result of many factors including errors in measurement, differences between periods of use and periods of production, losses and unmeasured uses.

Section 8 - Unauthorized water use issues involve storage of surface water without an appropriative water right. In addition, the United States has raised three unauthorized water use issues which include: violation of the 1940 Stipulated Judgment, rediversion and use not in accord with terms of Permit 7032, and other potential unauthorized uses.

A letter from the SWRCB to Rancho California Water District dated September 18, 1990 indicates that a "Progress Report" filed by the District shows that water appropriated under Permit 7032 is being used for municipal and industrial purposes. Since use of water under Permit 7032 is limited to irrigation, domestic use incidental to farming operations and recreation, such use for municipal and industrial purposes represents an unauthorized use.

Section 9 - Threats to water supply include high nitrate levels in Rainbow Creek, potential overdraft conditions and salt balance issues in the upper Watershed, a proposed landfill near Rainbow Creek, and a soil treatment facility.

Section 10 - Water quality data collected by organizations in the Watershed for 1991-92 are presented in Appendix D.

Section 11 - Projected time requirements to provide for the primary Watermaster tasks are presented for the next five water years.

Section 12 - A Watermaster Office budget of $154,400 is proposed for the 1993-94 Water Year. In addition the cost of U. S. Geological Survey (U.S.G.S.) operation of gaging stations is estimated to be $115,540, for a total of $269,940.

SECTION 2 - INTRODUCTION

2.1 Background

On January 25, 1951, the United States of America filed Complaint No. 1247 in the United States District Court for the Southern District of California to seek a judicial determination of all respective water rights within the Santa Margarita River Watershed. The Final Judgment and Decree was entered on May 8, 1963, and appealed to the U. S. Court of Appeals. The decision of the Appeals Court was entered on December 1, 1965, and the Modified Final Judgment and Decree was entered on April 6, 1966. Among other things, the Decree provided that the Court:

> . . . retains continuing jurisdiction of this cause as to the use of all surface waters within the watershed of the Santa Margarita River and all underground or sub-surface waters within the watershed of the Santa Margarita River, which are determined in any of the constituent parts of this Modified Final Judgment to be a part of the sub-surface flow of any specific river or creek, or which are determined in any of the constituent parts of this Modified Final Judgment to add to, contribute to, or support the Santa Margarita River stream system.

In March, 1989, the Court appointed James S. Jenks as Watermaster, to administer and enforce the provisions of the Modified Final Judgment and Decree and subsequent orders of the Court. The Order also described the Watermaster's Powers and Duties as well as procedures for funding and operating the Watermaster's Office. The Court also appointed a Steering Committee which currently is comprised of representatives from the United States, Eastern Municipal Water District, Fallbrook Public Utility District and Rancho California Water District to assist the Watermaster.

2.2 Authority

Section II of the Order for the Appointment of a Watermaster requires that the Watermaster submit a written report containing his findings and conclusions to the Court promptly after the end of each water year.

2.3 Scope

The subjects addressed in this report are responsive to Section II of the appointing order. Information and data contained in this report are based on information reported to the Watermaster by others. Therefore, the Watermaster does not guarantee the completeness and accuracy of the information presented in this report. However, it is noted that most of the data presented are based on measurements by various organizations in the Watershed. Estimates by the Watermaster are so noted.

SECTION 3 - SURFACE WATER AVAILABILITY AND USE

3.1 Surface Flow

Over the years, flows in the Santa Margarita River Watershed have been measured at the stations listed on Table 3.1. A number of these stations have been discontinued so that during Water Year 1991-92 the U.S.G.S. operated 12 stations and the Marine Corps Base at Camp Pendleton collected measurements from one additional station.

During 1991-92, the U.S.G.S. had difficulty establishing a rating curve for the DeLuz Creek station and no data are available for that station. In addition, construction activities during the year limited the usable record at the Warm Springs Creek and Santa Gertrudis Creek stations.

Monthly flows for these stations are shown on Table 3.2. Of these, stations with long periods of record are shown below. Total flow for Water Years 1990-91 and 1991-92 at these stations, together with the average discharge for the station for the period of record through Water Year 1991, are listed below:

	TOTAL FLOW		AVERAGE FLOW
	1990-91 Acre Feet	1991-92 Acre Feet	Through 1991 Acre Feet
Temecula Creek Near Aguanga	9,132	1,521	4,930 (1957-91)
Murrieta Creek At Temecula	19,682	9,040	7,900 (1924-91)
Santa Margarita River Near Temecula	27,126	12,650	10,800 (1949-91) 20,240 (1924-48)
Santa Margarita River Near Ysidora	36,501	33,478	24,357 (1923-91)

Comparisons of flows at stations with long records indicate that flows in 1991-92 were quite variable with annual discharges ranging from 31 percent of normal for Temecula Creek near Aguanga to 137 percent of the long-term average for the Santa Margarita River near Ysidora station.

Average flows for the Santa Margarita River near Temecula station are shown for two periods: 1924 to 1948 before Vail Dam was constructed, and since 1948 after Vail Dam was constructed.

TABLE 3.1

SANTA MARGARITA RIVER WATERSHED
STREAM GAGING STATIONS
1991-92

STATION NAME	STATION NO.	AREA SQ. MILES	RECORDED BY	PERIOD OF RECORD (1920–1990)
Temecula Creek Near Aguanga	11042400	131	USGS	8/57
Wilson Creek Above Vail Lake	11042490	122	USGS	10/89
Temecula Creek At Vail Dam	11042520	320	USGS	2/23 10/77
Vail Lake at Temecula (Reservoir Storage)	11042510	320	USGS	10/60
Pechanga Creek Near Temecula	11042631	13.8	USGS	10/87
Warm Springs Creek Near Murrieta	11042800	55.4	USGS	10/87
Santa Gertrudis Creek Near Temecula	11042900	92.8	USGS	10/87
Murrieta Creek At Temecula	11043000	222	USGS	10/25
Santa Margarita River Near Temecula	11044000	588	USGS	2/23
Rainbow Creek Near Fallbrook	11044250	10.3	USGS	9/89
Sandia Creek Near Fallbrook	11044350	21.4	USGS	9/89
Santa Margarita River Near Fallbrook	11044300	620	USGS	10/24 80 9/89
Santa Margarita River Tributary Near Fallbrook	11044600	0.52	USGS	10/61 9/65
DeLuz Creek Near Fallbrook	11044900	47.5	USGS/NRO	2/51 67 68 77 9/89
Santa Margarita River Near DeLuz Station	11045000	705	USGS	10/24 9/26
Fallbrook Creek Near Lake O'Neill	NA	9.5	USGS/NRO	10/64 9/76 12/88
Santa Margarita River At Ysidora	11046000	723	USGS	3/23
			WATER YEAR ENDING	1920 1930 1940 1950 1960 1970 1980 1990

TABLE 3.2

SANTA MARGARITA RIVER WATERSHED
MEASURED SURFACE WATER FLOW
1991-92
Quantities in Acre Feet

GAGING STATION	DRAINAGE AREA SQ. MILES	MONTH OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	1991-92 WATER YEAR TOTAL	ANNUAL AVERAGE THRU 1991	YEARS OF RECORD THRU 1991
Temecula Creek Near Aguanga	131	20	41	0	0	0	726	331	160	66	33	116	12	1,505	4,930	34
Wilson Creek Above Vail Lake	122	0	0	0	0	10	0	0	0	0	0	0	0	10	N/A	2
Pechanga Creek Near Temecula	13.8	0	0	0	0	0	0	0	0	0	0	0	0	0	N/A	4
Warm Springs Creek Near Murrieta	55.4	0	---------- See Footnote 1 ----------								0	0	0		N/A	4
Santa Gertrudis Creek Near Temecula	92.8	----------See Footnote 2 ----------													N/A	4
Murrieta Creek At Temecula	222	226	2	279	1,250	4,150	2,260	53	328	92	115	137	135	9,027	7,900	67
Santa Margarita River Near Temecula	588	304	63	592	2,000	5,240	2,680	414	605	214	179	184	172	12,647	10,800 20,420	43 (1949-91) 25 (1924-48)
Rainbow Creek Near Fallbrook	10.3	15	13	58	111	335	518	141	57	35	26	30	26	1,365	N/A	2
Sandia Creek Near Fallbrook	21.4	74	80	181	325	1,070	1,280	536	548	239	183	148	77	4,741	N/A	2
Santa Margarita River Near Fallbrook	620	379	88	1,050	1,860	9,310	4,790	842	848	381	253	323	406	20,530	N/A	2
DeLuz Creek Near Fallbrook	47.5	----------See Footnote 3 ----------													3,915	25 (1951-77) Except 1968
Santa Margarita River At Ysidora	723	101	120	739	3,340	11,430	11,200	3,760	1,430	715	359	193	91	33,478	24,357	68
Fallbrook Creek Near Lake O'Neill	9.5	0	0	8	80	301	204	49	44	25	6	3	3	723	1,225 4/	12 (1965-76) 3 (1989-91)

1/ Station out of operation due to channel lining from 11/5/91 to 6/10/92

2/ No continuous record; discharge measurements available in 1991-92

3/ No continuous record was maintained in 1991-92

4/ Includes wastewater flows

N/A - Not Applicable

Monthly flows shown in Table 3.2 consist primarily of naturally occurring surface runoff except for flows downstream of Murrieta Creek. Flows at those stations include water discharged by Rancho California WD into Murrieta Creek just upstream from the gaging station. These discharges are pursuant to Section Eleventh of the 1940 Stipulated Judgment which requires maintenance of a flow of three cubic feet per second (cfs) at the Santa Margarita River near Temecula station between May 1 and October 31 of each year. Discharges at that station for the months of October, 1991 and May through September, 1992 are shown on the following tabulation:

	MONTHLY DISCHARGE		
	Acre Feet	No. Days	Average Daily cfs
October 1991	304	31	4.9
May 1992	605	31	9.8
June 1992	214	30	3.6
July 1992	179	31	2.9
August 1992	184	31	3.0
September 1992	172	30	2.9
TOTAL	1,658	184	4.5

Release of 683 acre feet by Rancho California WD constituted about 40 percent of the measured 1,658 acre feet of water flowing past the Santa Margarita River gage during the six-month period.

3.2 Surface Water Diversions

Surface diversions to surface water storage and groundwater storage during 1990-91 and 1991-92 are shown in Table 3.3. Surface diversions to irrigation, estimated consumptive use, losses and returns for 1991-92 are shown in Table 3.4.

3.3 Water Storage

Major water storage facilities in the Santa Margarita River Watershed are listed on Table 3.5, together with the water in storage on September 30, 1991 and September 30, 1992. Total Santa Margarita River stream system water in storage at the end of Water Year 1991-92 totaled 22,490 acre feet, compared to 22,775 acre feet at the end of the previous year. Imported water in storage in Lake Skinner operated by Metropolitan Water District of Southern California (MWD) is also shown on Table 3.5. Imported water is not under Court jurisdiction.

TABLE 3.3

SANTA MARGARITA RIVER WATERSHED
SURFACE WATER DIVERSIONS TO STORAGE
1991-92
Quantities in Acre Feet

Surface Water Storage

	Vail Lake		Lake O'Neill	
	1990-91	1991-92	1990-91	1991-92
Storage at end of year (9/30)	21,815	22,190	960	300
Change in Storage	4,361	375	0	(660)
Annual Evaporation	3,619	3,629	366[1]	366[1]
Annual Release	6,253	2,244	900[1]	1,720[2]
Diversions to Surface Storage	14,233[3]	6,248[3]	957	1,426[4]

Groundwater Storage

Recharge (Surface Release)	6,253	2,244	900[1]	1,720[1]
Recharge (Direct)	0	0	5,178	5,431

[1] Estimated

[2] Equals Change of Storage, plus Diversion to Storage less Evaporation

[3] Equals Change of Storage, plus Evaporation, plus Releases

[4] 702 AF diverted from the Santa Margarita River, 724 AF inflow from Fallbrook Creek

TABLE 3.4

SANTA MARGARITA RIVER WATERSHED
SURFACE WATER DIVERSIONS TO IRRIGATION
1991-92
Quantities in Acre Feet

	Surface Diversions	Consumptive Use [1]	Losses [2]	Returns [3]
Prestininzi	18	13	2	3
Bluebird Ranch	21	14	2	5
Chambers	14	10	1	3
Cal June, Inc.	100	67	10	23
Cottle/Strange	250	169	25	56
Agri-Empire, Inc.				
Wilson Creek	42	28	4	10
Chihuahua Creek	127	86	13	28
Temecula Creek	40	27	4	9
Ward	2	1.35	0.2	0.45
Sage Ranch Nursery	30	20	3	7
Margarita Land and Development Co.	57	38	6	13
TOTAL	701	473.35	70.2	157.45

[1] Consumptive use equals 75% of Diversions less Losses

[2] Losses equal 10% of Diversions

[3] Returns equal 25% of Diversions less Losses

TABLE 3.5

SANTA MARGARITA RIVER WATERSHED
WATER IN STORAGE
1991-92
Quantities in Acre Feet

Santa Margarita River Storage	Total Capacity	Water in Storage 9/30/91	Water in Storage 9/30/92
Dunn Ranch Dam	90	0	0
Chihuahua Creek Reservoirs			
Upper	190	0	0
Middle	8	0	0
Lower	10	0	0
Vail Lake	49,370	21,815	22,190
Lake O'Neill	1,200	960*	300 *
Subtotal	50,868	22,775	22,490
Imported Water Storage			
Lake Skinner	44,000	39,666	38,073
TOTAL STORAGE	94,868	62,441	60,563

* - Estimated

SECTION 4 - SUBSURFACE WATER AVAILABILITY

4.1 General

Much of the water from the Santa Margarita River stream system is obtained by pumping subsurface water. The Court generally has identified two basic types of subsurface water in its interlocutory judgments. One type is vagrant, local, percolating waters which do not add to, support or contribute to the Santa Margarita River or its tributaries. Such waters have been determined to be outside the continuing jurisdiction of the Court. These waters are typically found in the basement complex and/or residuum deposits in the Watershed. Wells tapping these deposits typically have low yields. When such wells are widely spaced there may be sufficient water for domestic uses.

Other subsurface waters were found by the Court to add to, contribute to and support the Santa Margarita River and/or its tributaries. Aquifers containing such waters have been designated by the Court as younger alluvium and older alluvium. Younger alluvial deposits are commonly located along streams. Older alluvium is found underneath younger alluvium and on either side of the younger alluvium and is not limited to areas along stream channels. The use of such subsurface water is under the continuing jurisdiction of the Court and is reported in this report.

4.2 Extractions

Production by substantial water users in the Watershed from all sources is listed on Table 4.1 by hydrologic area along with estimated consumptive use and return flows. Substantial water users include water purveyors as well as private irrigators who irrigate eight acres or more or use an equivalent quantity of water.

Production by purveyors totaled 35,633 acre feet in 1991-92 compared to 31,620 acre feet in 1990-91. Monthly quantities are shown in Appendix A and annual production for water years between 1966 and 1992 is shown in Appendix B.

Subsurface extractions by private irrigators are based on the irrigated acreage and reported in Appendix C. These groundwater extractions were 7,063 acre feet in 1991-92. Of the subsurface extractions, 75 percent is estimated to have been consumed and 25 percent to have been return flow. Surface diversions are treated similarly in Table 4.1 except that 10 percent is estimated to have been lost during delivery of the water. Return flow is that portion of the total deliveries which is not consumed.

TABLE 4.1

SANTA MARGARITA RIVER WATERSHED
SANTA MARGARITA RIVER WATER PRODUCTION BY SUBSTANTIAL USERS
Quantities in Acre Feet
1991-92

HYDROLOGIC AREA	WATER PURVEYOR PRODUCTION ACRE FEET	OTHER IRRIGATED ACRES	IRRIGATION PRODUCTION ACRE FEET	TOTAL GROUNDWATER PRODUCTION ACRE FEET	SURFACE WATER DIVERSIONS ACRE FEET	TOTAL PRODUCTION ACRE FEET	ESTIMATED CONSUMPTIVE USE ACRE FEET 1/	ESTIMATED RETURN FLOW ACRE FEET
1. Wilson Creek Above Aguanga GWA Includes Anza Valley	328 (Anza MWC, Lk Rvside) (Cahuilla)	1,502 2/	1,884	2,212	0	2,212	1,659	553
2. Temecula Creek Above Aguanga GWA	12 (Butterfield Oaks MHP)	744	1,212	1,224	169	1,393	1,032	361
3. Aguanga GWA	43 (Thousand Trails)	416	724	767	292	1,059	772	287
4. Upper Murrieta Creek	-----	-----	-----	-----	-----	-----	-----	-----
5. Lower Murrieta Creek	-----	855	38	38	30	68	49	19
6. Temecula-Murrieta GWA	31,053 (RCWD,MCWD,EMWD) (Pechanga)	1,255	1,974	33,027	0	33,027	24,770	8,257
7. Santa Margarita River Below Gorge								
DeLuz Creek	45 (FPUD)	286	1,072	1,117	53	1,170	878	293
Sandia Creek	-----	126	100	100	100	200	143	58
Rainbow Creek	-----	-----	-----	0	0	-----	-----	-----
Santa Margarita River	4,152 (USMC)	20	59	4,211	57	4,268	843	2,602
TOTAL	35,633	5,204	7,063	42,696	701	43,397	30,145	12,442

1/ Estimated consumptive use is equal to 75% of groundwater production plus 75% of surface diversions less 10% except for Camp Pendleton where net export of 822 acre feet is excluded and return flows include measured wastewater returns

2/ Includes lands overlying deep aquifer in Anza Valley

The foregoing percentages were applied to all users except Camp Pendleton, where consumptive use was estimated to have been 75 percent of the portion of production which is not exported or recharged as wastewater. In addition, five percent of the wastewater recharged was estimated to have been lost as consumptive use.

4.3 Subsurface Storage

The quantities of water in storage in the various subsurface sources in the watershed have not yet been computed. However water levels in wells throughout the watershed have been collected.

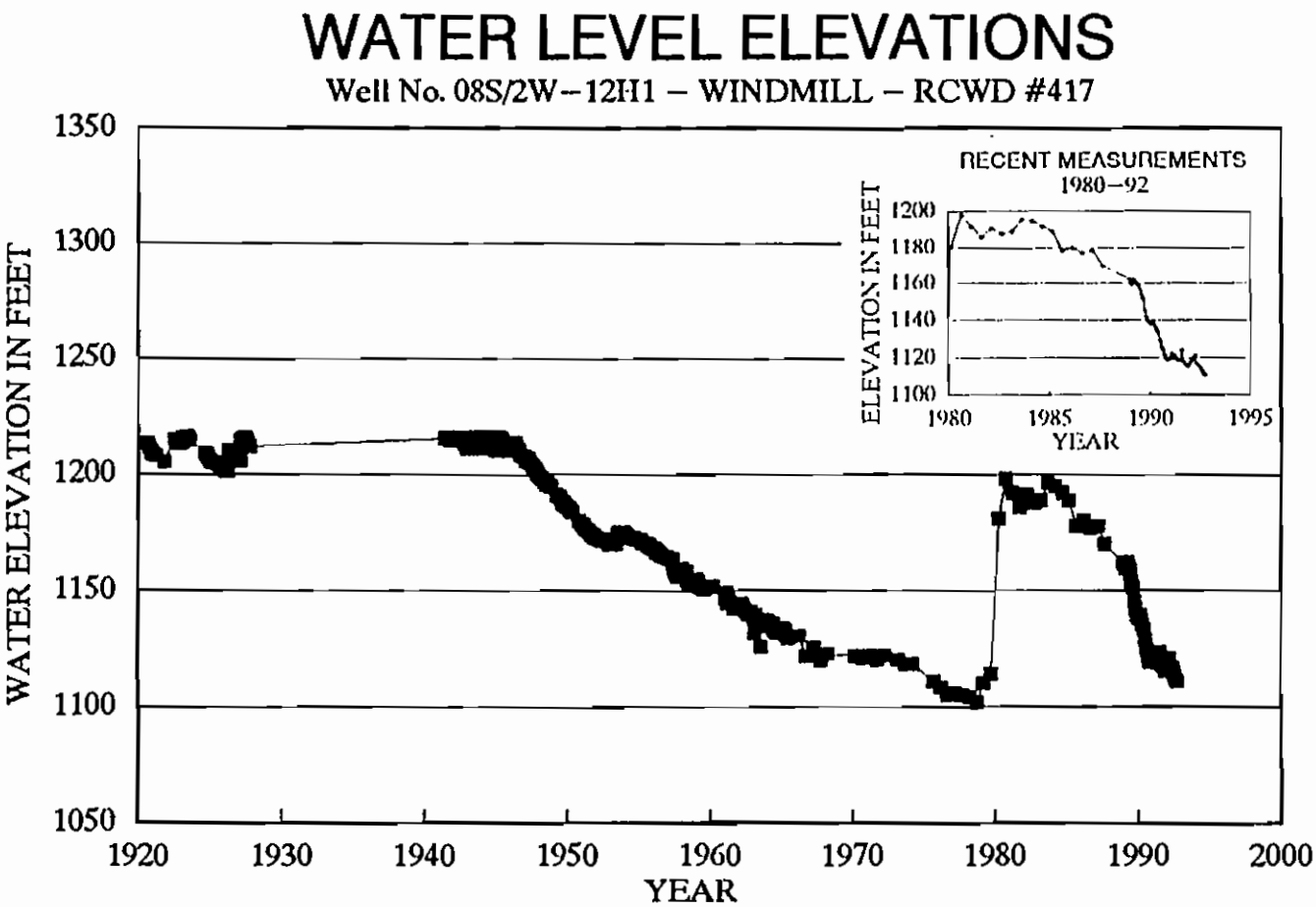
Historic water levels in four wells at various locations in the Watershed are shown on Figures 4.1, 4.2, 4.3 and 4.4. Figure 4.1 shows water levels in Well No. 8S/2W-12H1 (Windmill Well) located in the Rancho California WD Service Area downstream from Vail Lake. Note the extended drawdown from 1945 to 1978, the major recovery during the wet years in 1978-1980, and the effect of recent dry years. The well level at the end of 1992 was 1,111.1 feet, within nine feet of the historical low of 1,102 feet reached in September 1978.

Figure 4.2 shows water levels at Well No. 10S/4W-7J1 at Camp Pendleton. In prior years the groundwater levels for Well 11S/5W-2E1 were shown in this Report to illustrate groundwater conditions at Camp Pendleton. That well demonstrated the lowered levels in the late 1940's and early 1950's that led to seawater intrusion. However in recent years there was little fluctuation in water levels in that well because water levels were being maintained to prevent further seawater intrusion.

Thus beginning with this Report Well 10S/4W-7J1, a monitoring well located in the Upper Sub-basin, will be used to illustrate changes in water levels at Camp Pendleton. Water levels between 1950 and 1992 show no long-term trends. Fluctuations in recent years between 82 and 88 feet in elevation are shown in the inset to Figure 4.2. Water levels in Well 7J1 dropped 1.6 feet between the fall of 1991 and the fall of 1992.

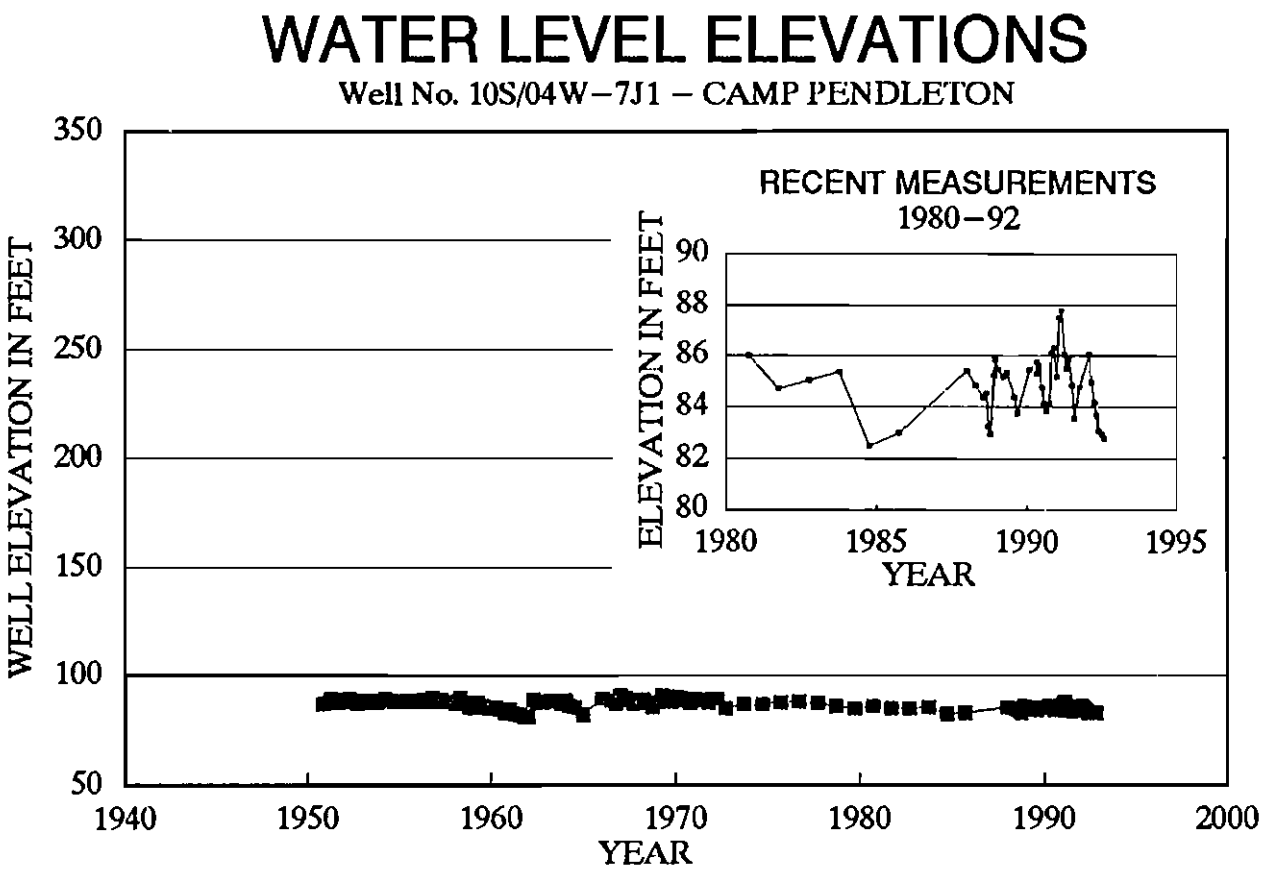
Figure 4.3 shows water levels from Well No. 7S/3W-20C9 (Holiday Well) in the Murrieta County Water District Service Area. Water levels in this well were down 4.3 feet following a 9.9 foot drop last year. Review of the water depths in the District's other wells indicates declines in the maximum depth reached during the water year of one, seven and eight feet in the other three production wells. The Lynch Well, which had no production in 1991-92 and serves as a monitoring well, showed an increase of two feet

FIGURE 4.1



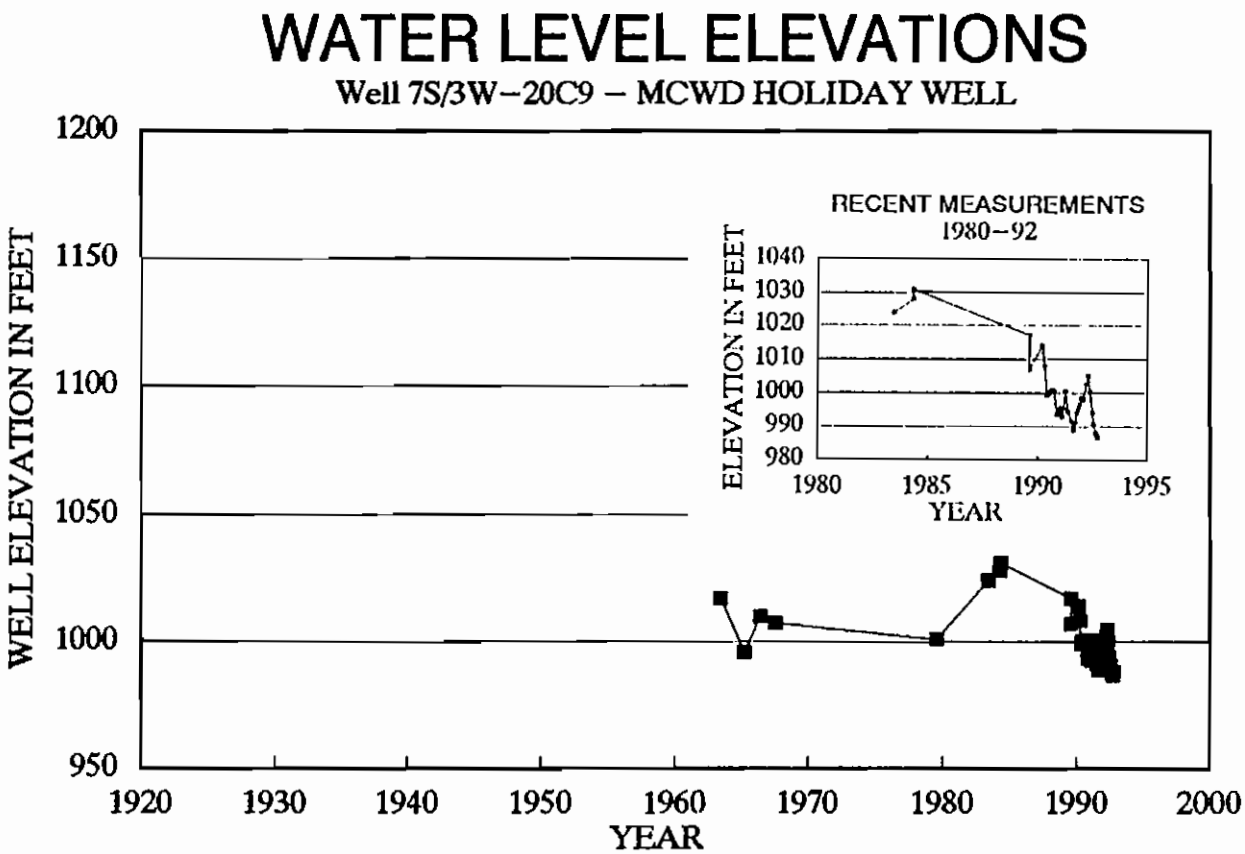
Ground El. 1216 Ft. Depth 515 Ft. Drilled in Alluvium Ref: DWR Bul. 91–20 (1920–67) RCWD Master Plan (1970–83); LH Rpt (1983–87); RCWD Reports (1989–92)

FIGURE 4.2



Ground El. 93 Ft Depth 138.8 Ft Perf Unknown Drilled in Alluvium
Camp Pendleton Records (1950–1972)(1988–1992) LH Study (1973–85) dates estimated

FIGURE 4.3



Ground El. 1080 Ft. Depth 307 Ft. Perf. 60 - 307 Ft.
Murrieta County Water District Records

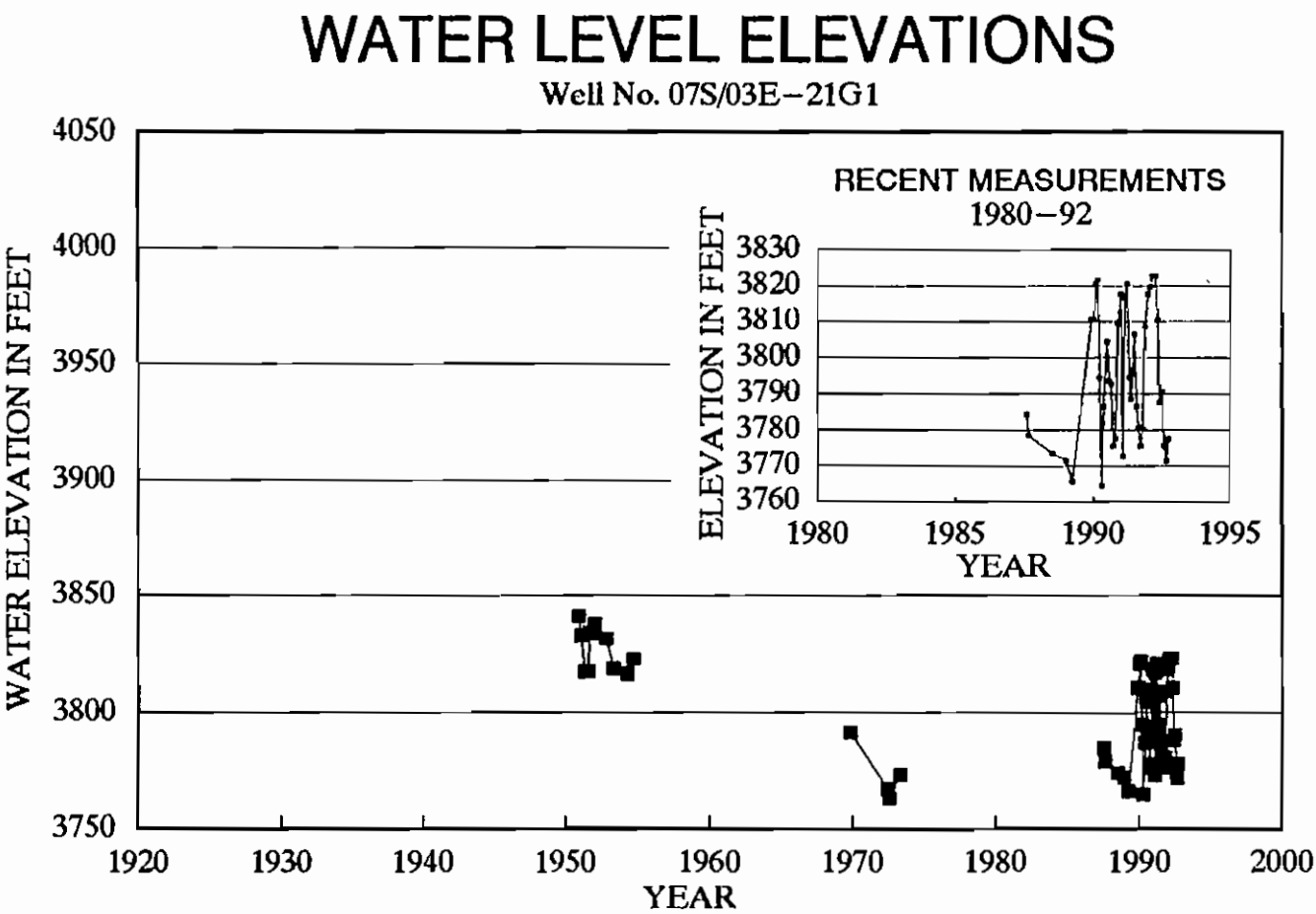
over the year. The South well, which had no production since June 1992, dropped by one-half foot. Thus it appears that the lowered depths in production wells may be related to increased production and not to a general lowering of the groundwater levels.

Figure 4.4 shows water levels for Well No. 7S/3E-21G1, Anza Mutual Water Company's Well No. 1 located in the Anza Valley. Water levels in this well are up two feet this year after no change last year and there appears to be little overall trend in water levels since 1973. Recent measurements highlighted in the inset to Figure 4.4 show a 50 foot fluctuation in groundwater levels at this production well.

Changes in water levels in the above noted wells between the end of the previous water year and the end of the 1992 water year are shown below:

Well	Water Elevation 1991 Feet	Water Elevation 1992 Feet	Change in Water Level Feet
8S/2W-12H1	1117.2	1111.1	Down 6.1
10S/4W-7J1	84.7	83.1	Down 1.6
7S/3W-20C9	990.9	986.6	Down 4.3
7S/3E-21G1	3775.6	3777.6	Up 2.0

FIGURE 4.4



Ground El. 3863 Ft Depth 260 Ft Perf 20--260 Ft Drilled in Old Alluvium
Anza Mutual Water Co. Well No. 1 (1987-1992) DWR Bulletin 91-22 (1950-1973) dated 8/74

SECTION 5 - IMPORTS/EXPORTS

5.1 General

Court Orders require the Watermaster to determine the quantities of imported water used in the Watershed. Most of the water imported into the Santa Margarita River Watershed is by MWD for sale to local districts. MWD obtains its water from the State Water Project (SWP) and the Colorado River. Both the SWP and the Colorado River system have major storage reservoirs to provide long-term carryover storage. The quantities of water in storage in the major reservoirs in each system are shown on Table 5.1. It may be seen that during Water Year 1991-92 water in storage in the SWP decreased from 2.4 million acre feet on September 30, 1991, to 2.3 million acre feet on September 30, 1992. Storage on September 30, 1992, corresponds to 43 percent of the total SWP storage capacity.

Similarly, water in storage in the Colorado River system decreased from 41.7 million acre feet on September 30, 1991, to 40.9 million acre feet on September 30, 1992. On September 30, 1992, those reservoirs contained 64 percent of their total capacity.

Projections of water availability on the SWP for the coming year are prepared by the State Department of Water Resources on a monthly basis from February through May. The May 1, 1993 report indicates that projected April through July runoff from rivers in the State ranges from 103 to 153 percent of average. The May report indicates that in 1993 the SWP approved deliveries of 2.8 million acre feet of agricultural entitlement water and municipal and industrial water requests. This corresponds to about 73 percent of the original request of 3.85 million acre feet; however that request was revised downward following the January 1993 floods in Southern California so that contractors will receive essentially 100 percent of requests in 1993.

The following districts imported water directly or indirectly from MWD into the Santa Margarita River Watershed:

Eastern Municipal Water District
Elsinore Valley Municipal Water District
Fallbrook Public Utility District
Rainbow Municipal Water District
Rancho California Water District
Western Municipal Water District

TABLE 5.1

SANTA MARGARITA RIVER WATERSHED
STORAGE IN STATE WATER PROJECT AND COLORADO RIVER RESERVOIRS
Thousands of Acre Feet

STATE WATER PROJECT RESERVOIRS

	Total Capacity	Water in Storage 9/30/89	9/30/90	9/30/91	9/30/92
Oroville	3,540	2,150	1,163	1,399	1,317
San Luis (State Share)	1,060	216	100	385	381
Pyramid	171	160	163	164	159
Castaic	324	184	268	296	257
Silverwood	73	62	67	68	68
Perris	132	104	116	120	117
Total	5,300	2,876	1,877	2,432	2,299
Percent of Capacity		54%	35%	46%	43%

MAJOR COLORADO RIVER RESERVOIRS

	Total Capacity	Water in Storage 9/30/89	9/30/90	9/30/91	9/30/92
Flaming Gorge	3,789	2,960	3,082	3,391	3,106
Blue Mesa	941	585	618	700	604
Navajo	1,709	1,310	1,361	1,586	1,579
Powell	27,000	19,805	16,252	14,699	14,085
Mead	28,537	21,528	20,144	19,233	19,416
Mohave	1,818	1,388	1,488	1,571	1,623
Havasu	648	563	562	556	548
Total	64,442	48,139	43,507	41,736	40,961
Percent of Capacity		75%	68%	65%	64%

In addition to MWD imports, water is also imported into the Santa Margarita River Watershed from adjacent watersheds. Such importation occurs from the Santa Ana Watershed where Elsinore Valley MWD pumps water from wells outside the Santa Margarita River Watershed but delivers water to a portion of its service area which is inside the Santa Margarita River Watershed.

At Camp Pendleton, there is a pipeline connection to wells located in the Las Flores Creek Watershed to the north of the Santa Margarita River Watershed. Water can be either imported or exported through that line, depending on relative water demands and pumping capacities.

Exportations from the Santa Margarita River Watershed include water pumped at Camp Pendleton which is used in the San Luis Rey River Watershed to the south or in the Las Flores Creek Watershed to the north. Some of the water exported at Camp Pendleton is returned to the Watershed as wastewater. Wastewater from the Fallbrook area is exported by the Fallbrook Sanitary District and wastewater in the Elsinore Valley MWD is exported by that district.

In December 1992, Eastern MWD completed construction of a 24-inch pipeline along Winchester Road. The pipeline is used to transport wastewater from the Rancho California Regional Water Reclamation Facility to areas within the Watershed for reuse as well as for export of up to 10 mgd from the Watershed.

Exports of water from Well No. 7S/3E-23D in Anza Valley in 1991-92 totaled about 383,500 gallons (1.2 acre feet). That water was transported to the Seven Up/Royal Crown Bottling Plant in Buena Park, outside the Watershed and sold as mineral water.

The following paragraphs of this report describe imports during Water Year 1991-92 and during the 1966-1992 period. There is also discussion of MWD's existing Lake Skinner operations as well as proposed operation in Domenigoni Valley.

5.2 Water Year 1991-92

Water quantities imported into and exported from the Santa Margarita River Watershed for months during Water Year 1991-92 are listed on Table 5.2.

TABLE 5.2

SANTA MARGARITA RIVER WATERSHED
IMPORTS/EXPORTS
1991-92
Quantities in Acre Feet

	IMPORTS							EXPORTS					
		ELSINORE			RANCHO			CAMP PENDLETON			ELSINORE		
YEAR MONTH	EASTERN MWD	VALLEY MWD	FALLBROOK PUD	RAINBOW MWD	CAL WD	WESTERN MWD 1/	TOTAL IMPORTS	EXPORTS	IMPORTS	NET EXPORT	VALLEY MWD	FALLBROOK SD	TOTAL EXPORTS
1991													
OCT	1,121	248	841	301	2,074	2	4,587	204	77	127	10	90	227
NOV	1,105	248	675	222	844	2	3,096	186	76	110	10	85	205
DEC	539	178	438	175	143	1	1,474	167	105	62	14	83	159
1992													
JAN	279	178	296	81	0	1	835	164	118	46	12	88	146
FEB	137	130	216	59	0	1	543	147	128	19	11	81	111
MAR	1	130	143	70	0	1	345	122	140	(18)	12	96	90
APR	992	140	507	136	328	1	2,104	80	125	(45)	12	88	55
MAY	766	140	763	189	1,456	2	3,316	206	126	80	12	89	181
JUNE	1,001	150	894	244	2,280	3	4,572	231	113	118	11	84	213
JULY	971	150	975	213	2,961	3	5,273	255	179	76	13	95	184
AUG	981	249	1,109	298	3,737	5	6,379	295	162	133	11	107	251
SEPT	700	249	1,036	288	3,108	3	5,384	313	199	114	12	104	230
TOTAL	8,593	2,190	7,893	2,276	16,931	25	37,908	2,370	1,548	822	140	1,090	2,052

1/ Improvement District A - Rainbow Canyon Only (WR-13)

Camp Pendleton Imports and Fallbrook Sanitary District Exports are Estimated

5.3 Water Years 1966-1992

Water quantities imported by districts into the Santa Margarita River Watershed during Water Years 1966-1992 are shown on Table 5.3. Total imports to these districts are measured, however some districts serve lands outside the Watershed. For these districts, which include Eastern MWD, Elsinore Valley MWD, Fallbrook PUD and Rainbow MWD, the portion delivered in the Santa Margarita River Watershed must be estimated.

Exports over the 1966-1992 period are also shown on Table 5.3. These include estimated water exports on Camp Pendleton less estimated wastewater returns, as well as an estimate of exports by the Fallbrook Sanitary District after 1983, and Elsinore Valley MWD after 1986. Exports do not include water which naturally flows from the Santa Margarita River into the Pacific Ocean.

5.4 Lake Skinner

Lake Skinner is a 44,000 acre foot reservoir constructed by MWD on Tucalota Creek, within the Santa Margarita River Watershed. The purpose of Lake Skinner is to provide regulatory and emergency storage capacity for water imported to southern California.

It was recognized that the construction and operation of Lake Skinner would affect surface and subsurface flows on Tucalota Creek, so a Memorandum of Understanding and Agreement on Operation of Lake Skinner (MOU), dated November 12, 1974, was approved by the Court on January 16, 1975.

The MOU contains provisions to protect Santa Margarita River Watershed water users from potential effects of Lake Skinner on either subsurface or surface flows.

Protection against a decrease in subsurface flows caused by the dam is afforded by a provision in the MOU which requires that MWD release water from Lake Skinner into Tucalota Creek if groundwater levels in Well AV-28 fall below a depth of 22.76 feet. During 1990-91, MWD replaced Well AV-28 with Well AV-28B which is located 40.72 feet west and 8.72 feet south of Well AV-28. The minimum groundwater level to be maintained is an elevation of 1356.64 feet which is equivalent to the previous water level which was expressed in terms of the depth to water from a datum.

During 1991-92, water levels in Well AV-28B reached 1,357.30 in February, 1992 before rising in response to storms. Groundwater levels were at 1,357.26 on September 30, 1992.

TABLE 5.3

SANTA MARGARITA RIVER WATERSHED
IMPORTS/EXPORTS
1966-1992
Quantities in Acre Feet

	IMPORTS							EXPORTS					
		ELSINORE			RANCHO			CAMP PENDLETON			ELSINORE		
WATER YEAR	EASTERN MWD	VALLEY MWD	FALLBROOK PUD 1/	RAINBOW MWD	CAL WD	WESTERN MWD 2/	TOTAL IMPORTS	EXPORTS	IMPORTS	NET EXPORT	VALLEY MWD	FALLBROOK SD	TOTAL EXPORTS
1966	1,604	N/R	3,351	1,308	0	24	6,287	3,299	974	2,325	0	0	2,325
1967	1,630	N/R	2,852	1,095	0	20	5,597	3,231	1,243	1,989	0	0	1,989
1968	1,464	N/R	3,423	1,377	0	27	6,291	3,427	1,214	2,213	0	0	2,213
1969	1,741	N/R	2,837	1,253	0	25	5,855	3,350	1,170	2,181	0	0	2,181
1970	1,417	N/R	3,538	1,689	0	31	6,674	3,829	1,113	2,716	0	0	2,716
1971	1,383	N/R	3,405	1,650	0	34	6,473	3,484	1,090	2,395	0	0	2,395
1972	1,470	N/R	3,916	2,037	0	34	7,457	3,479	1,168	2,311	0	0	2,311
1973	1,533	N/R	3,210	1,616	0	30	6,389	3,480	1,187	2,292	0	0	2,292
1974	1,601	N/R	3,967	2,049	0	36	7,654	3,468	1,140	2,327	0	0	2,327
1975	1,969	N/R	3,597	1,247	0	34	6,847	3,034	1,530	1,504	0	0	1,504
1976	2,493	N/R	4,627	2,239	119	35	9,513	3,555	1,497	2,057	0	0	2,057
1977	2,947	N/R	5,212	2,343	1,845	24	12,372	3,130	1,416	1,714	0	0	1,714
1978	2,551	569	5,202	2,188	5,774	26	16,310	3,006	1,283	1,724	0	0	1,724
1979	1,894	712	5,723	2,348	7,009	24	17,709	4,692	1,427	3,265	0	0	3,265
1980	1,192	696	6,404	2,489	10,126	25	20,932	3,587	1,405	2,182	0	0	2,182
1981	716	798	8,543	3,153	15,282	34	28,527	3,827	1,249	2,579	0	0	2,579
1982	1,112	678	7,079	2,460	13,378	34	24,741	3,696	1,273	2,424	0	0	2,424
1983	1,211	658	6,720	2,190	5,752	26	16,557	2,935	1,242	1,693	0	1,029	2,722
1984	699	816	8,506	3,068	6,716	26	19,831	3,178	1,120	2,058	0	1,058	3,116
1985	679	808	7,831	3,410	7,158	27	19,913	3,320	1,200	2,120	0	1,086	3,206
1986	760	882	8,585	2,945	11,174	34	24,380	3,273	981	2,293	0	1,112	3,405
1987	1,155	938	8,656	3,390	7,564	36	21,739	3,379	1,799	1,581	4	1,155	2,740
1988	2,047	1,032	8,033	2,985	17,854	36	31,988	4,075	1,872	2,203	55	1,180	3,438
1989	3,746	1,341	9,067	3,003	22,895	24	40,076	3,347	1,446	1,901	74	1,204	3,179
1990	8,578	2,255	10,103	3,818	22,030	22	46,806	2,890	1,451	1,439	114	1,298	2,851
1991	16,621	2,421	7,962	2,904	21,238	20	51,166	2,108	1,219	889	134	973	1,996
1992	8,593	2,190	7,893	2,276	16,931	25	37,908	2,370	1,548	822	140	1,090	2,052

1/ Includes DeLuz Heights MWD prior to 1991

2/ Improvement District A - Rainbow Canyon Only (WR-13)

N/R - Not Reported

The MOU also provides that all local surface inflow which enters Lake Skinner will be released into Tucalota Creek. In its 1980 modification the MOU provides that local surface inflow is to be determined by using the hydrologic equation for Lake Skinner which is specified in the MOU. However, in many years the local inflow is small compared to the large quantities of imported water inflow and outflow at Lake Skinner. The error of measurement for these large flows is larger than the local inflow in many instances. Accordingly, MWD also monitors the flow in Tucalota Creek, Rawson Creek and Middle Creek during storms and uses those observations to determine when to apply the hydrologic equation. Since 1986, an unmeasured bypass pipeline has been used with increasing frequency in the MWD operations. Use of this pipeline reduces the accuracy of the calculated flows using the hydrologic equation. The current procedures for estimating local inflow into Lake Skinner are under review.

During 1991-92, there was no recorded local runoff into Lake Skinner.

In addition to releases of water mandated by the MOU, MWD also makes releases of water for maintenance or operational purposes from time to time. In February, 1992, MWD discharged 22 acre feet into Tucalota Creek downstream of Lake Skinner and 5.5 acre feet into Warm Springs Creek as part of the Plants I and II shutdown. In March, 1992, MWD discharged 6 acre feet into Tucalota Creek, Warm Springs Creek and Rainbow Creek as part of the 1992 shutdown of Pipeline 1.

5.5 Eastside Reservoir Project

In 1992 MWD announced that it was proceeding with design and construction of a major new 800,000 acre foot storage facility in Domenigoni Valley which is located within the Santa Margarita River Watershed. The Court has retained jurisdiction over all surface flows in Domenigoni Valley as well as groundwater flows when groundwater elevations are higher than 1,400 feet in Township 6 South, Range 2 West, Section 9. When elevations are lower than 1,400 feet the groundwater is considered to flow into the Santa Ana Watershed located to the north of the Santa Margarita River Watershed.

The proposed storage facility consists of two dams, one at each end of the Valley. The east dam diverts surface and groundwater flows into the Santa Ana River Watershed from a 4.2 square mile drainage area known as Goodhart Canyon in the Santa Margarita River Watershed. The west dam effectively intercepts westward surface and groundwater flows from an additional 13.19 square mile area.

Accordingly, MWD has begun development of an MOU for the Eastside Reservoir Project. The MOU will provide for monitoring groundwater levels west of the west dam by wells similar to those downstream of Lake Skinner. As currently planned, surface runoff from the 4.2 square mile parcel will be measured and used to estimate the quantities of local runoff from the total area of 17.39 square miles tributary to the reservoir.

SECTION 6 - WATER RIGHTS

6.1 General

Water is used in the Santa Margarita River Watershed under a variety of water rights.

In the early 1960's, the U. S. District Court in its Interlocutory Judgments described water rights in the Watershed as primarily riparian rights and overlying rights. Riparian rights belong to owners of land parcels located adjacent to streams in the Watershed or overlying younger alluvium deposits generally along the stream channels. Overlying rights were divided by the Court into two categories based on the location where the water is obtained and used. Water extracted from lands where subsurface waters add to, contribute to and support the Santa Margarita River stream system was found to be subject to the continuing jurisdiction of the Court. Lands in this category were identified by the Court and listed in Interlocutory Judgments. In general, these parcels of land overlie younger or older alluvium deposits.

The other category of overlying use applies to parcels of land where subsurface flows do not add to, contribute to or support the Santa Margarita River stream system. These parcels were also identified by the Court and found to be outside the continuing jurisdiction of the Court. In general, these lands overlie basement complex or residuum deposits.

The Court also described a number of other rights in the Watershed. These included surface water appropriative water rights which have been administered by the State of California since 1914. These rights are discussed in the following subsection of this report.

In Interlocutory Judgment No. 41, the Court found that the United States reserved rights to the use of the waters of the Santa Margarita River stream system which under natural conditions would be physically available on the Cahuilla, Pechanga and Ramona Indian Reservations, including rights to the use of groundwaters sufficient for the present and future needs of the Indians residing thereon. In Interlocutory Judgment No. 44, the Court recognized and reserved water rights for lands within the Cleveland and San Bernardino National Forests and for lands being administered pursuant to the Taylor Grazing Act.

Since the early 1960's there have been substantial changes in water use in the Watershed, especially in the Murrieta-Temecula Ground Water area.

During the 1950's and early 1960's when this case was under active litigation, most of the water use in the Murrieta-Temecula area consisted of individual property owners pumping water for use on their own properties. However, in 1966 the Rancho California WD was formed. The District developed Agency Agreements with most of the landowners within the District. In these Agency Agreements, the landowners "...without transferring any water rights and privileges pertaining to said land...." designated the District as their exclusive agent for the development and management of their water supply.

Thus, many landowners within the Rancho California WD are not now exercising their overlying rights. Instead, Rancho California WD pumps groundwater and uses it throughout the District area under a claimed appropriative groundwater right, with the consent of most of the overlying landowners.

A number of other water purveyors, including Murrieta CWD and Eastern MWD, also pump under groundwater appropriative rights.

Another change from the early 1960's is the large scale importation of water into the Santa Margarita River Watershed by Rancho California WD. A portion of such importation finds its way into the groundwater aquifers. The legal status of return flows from imported supplies as well as direct recharge of imported water was clarified by the final judgment in City of Los Angeles v. City of San Fernando, et al., 1975 14 Cal. 3rd 199. This decision in the Supreme Court of the State of California made two major findings with respect to imported water.

The first was that agencies have the right to recharge and store imported water in a groundwater basin and to extract the imported water for use, subject to applicable state and federal laws.

In addition, agencies that import and deliver water to lands overlying a groundwater basin have a continuing right to extract the return flow from such water. The return flow is that portion of the imported supply which percolates into the groundwater basin. In the San Fernando case this portion was found to range from 20 percent to 35.7 percent of the imported supplies.

The Rancho Division of the Rancho California WD overlies the Murrieta-Temecula Ground Water area. Thus a portion of the import supply delivered to the Rancho Division of Rancho California WD percolates into the underlying aquifers. The first water pumped by Rancho California WD in the ensuing year constitutes recapture of such return flows.

Imported water is also supplied to the Santa Rosa Division within Rancho California WD, however only a relatively small part of this division overlies the Murrieta-Temecula Ground Water area. Thus there is less imported water return flow from the Santa Rosa Division.

Classification of Rancho California WD supplies into various water right categories is discussed in Section 7 of this Report.

6.2 Appropriative Surface Water Rights

Another broad category of water rights used in the Watershed is surface water appropriative rights. Since 1914, these rights have been administered by the SWRCB.

A list of current permits, licenses and other active rights obtained from the SWRCB is shown on Table 6.1.

TABLE 6.1

SANTA MARGARITA RIVER WATERSHED
APPROPRIATIVE WATER RIGHTS

PERMITS AND LICENSES

I.D. No.	Owner	Filing Date	Source Of Water	Point Of Diversion	Amount	Use	Status
6629	William H. & Sandra J. Cyrus	4/9/30	Coahuila Valley	Sec. 4, 7S, 3E	DD-720 gpd	D	License
6893	Earl C. & Mamie LaBine	2/13/31	Temecula Creek	Sec. 20, 9S, 2E	DD-820 gpd	D/I	License
7035	Myla Lawler	8/10/31	Cutca Creek	Sec. 29, 9S, 1E	DD-5725 gpd	D/I	License
7731	Earl C. & Mamie LaBine	11/02/33	Temecula Creek	Sec. 20, 9S, 2E	DD-7200 gpd	D/I	License
9137	Goodarz Irani	10/07/37	Temecula Creek	Sec. 12, 9S, 1E	DD-400 gpd	D	License
9291	Luis Olivos	5/13/38	Nelson Creek	Sec. 23, 8S, 5W	DD-1550 gpd	D	License
10806	James R., Phyllis & Bruce Grammer	4/22/44	Temecula Creek	Sec. 34, 9S, 2E	DD-2880 gpd	D	License
11161	Roy C. Pursche & J. Zink	9/26/45	Rattlesnake Canyon	Sec. 28, 9S, 2E	DD-12,000 gpd	D/I	License
11518	Rancho California Water District	8/16/46	Temecula Creek	Sec. 10, 8S, 1W	ST-40,000 AF	D/I/R	Permit
11587	U. S. Bureau of Reclamation	10/11/46	Santa Margarita River	Sec. 12, 9S, 4W	ST-10,000 AF	D/I/M	Permit
12178	U. S. Bureau of Reclamation	11/28/47	Santa Margarita River	Sec. 12, 9S, 4W	ST-10,000 AF	D/I/M	Permit
12179	U. S. Bureau of Reclamation	11/28/47	Santa Margarita River	Sec. 12, 9S, 4W	ST-10,000 AF	D/I/M	Permit
13505	David H. & Kathleen C. Lypps	12/12/49	Cottonwood Creek	Sec. 30, 8S, 4W	DD-0.75 cfs & ST-42 AF	R/S	License
17239	Ward Family Trust	8/15/56	Temecula Creek	Sec. 20, 9S, 2E	DD-120 gpd	D/E	License
20507	David H. & Kathleen C. Lypps	11/24/61	Cottonwood Creek	Sec. 19, 8S, 4W Sec. 30, 8S, 4W	ST-18 AF	I/R	License
20608	Richard F. & Rosabel L. Matthews	2/13/62	DeLuz Creek	Sec. 20, 8S, 4W	ST-100 AF	D/I/R	License
20742	U. S. Cleveland National Forest	4/24/62	Sourdough Spring	Sec. 25, 9S, 1E	DD-55 gpd	E	License
21074	U. S. Cleveland National Forest	12/07/62	Cutca Spring	Sec. 17, 9S, 1E	DD-100 gpd	S/W	License
21471A	U. S. Department of Navy	9/23/63	Santa Margarita River	Sec. 5, 10S, 4W Sec. 2, 11S, 5W	ST-4,000 AF	D/I/M/Z	License
21471B	U. S. Bureau of Reclamation	9/23/63	Santa Margarita River	Sec. 32, 9S, 4W	ST-165,000 AF	D/I/M/Z	Permit
27756	James R. Grammer	5/23/83	Temecula Creek	Sec. 3, 10S, 2E	DD-14,400 gpd	I/S	Permit
28133	Charles F. Ruggles	5/14/84	Cahuilla Creek	Sec. 15, 8S, 2E	ST-5AF	E/H/I/R/S	Permit

APPLICATIONS

28930	Agri-Empire, Inc.	10/22/86	Chihuahua Creek	Sec. 1, 9S, 2E Sec. 2, 9S, 2E Sec. 11, 9S, 2E	ST-70 AF*	I	

OTHER RIGHTS

05751S/Federal	U. S. Cleveland National Forest	1/01/70	Long Canyon Spring	Sec. 16, 9S, 1E	DD-89 gpd	E/R/S/W	
000024/State	Judge Dial Perkins	12/26/86	Santa Margarita River	Sec. 12, 9S, 4W	DD-133.3 gpd	D	
000751/State	Lawrence Butler	5/31/67	Fern Creek	Sec. 31, 8S, 4W	DD-0.33 cfs ST-100 AF	I	
011411/State	Agri Empire, Inc.	5/16/84	Kohler Canyon	Sec. 33, 9S, 2E	DD-0.245 cfs ST-40 AF	I/S	
012235/State	William A. & Lois D. Cunningham	8/27/85	DeLuz Creek	Sec. 4, 9S, 4W	DD-4700 gpd	D/I	
001583/Stock	George F. Yackey	12/27/77	Sandia Canyon	Sec. 25, 8S, 4W	ST-8.0 AF	S	
002380/Stock	Chris R. & Jeanette L. Duarte	12/16/77	Rainbow Creek	Sec. 12, 9S, 3W	ST-0.5 AF	S	

KEY TO USE: DD - Direct Diversion; D - Domestic; R - Recreation; E - Fire Protection; H - Fish Culture; ST - Diversion to Storage; I - Irrigation; M - Municipal; S - Stockwatering; Z - Other

* - Storage capacities in existing reservoirs are 172 AF (Sec. 1), 8 AF (Sec. 2) and 10 AF (Sec. 11)

Total direct diversion rights and active storage rights from creeks in the Watershed are summarized below:

	Direct Diversions Gallons Per Day	Storage Acre Feet
Cahuilla Valley	720	5
Cottonwood Creek	485,000	60
Cutea Creek	5,825	---
DeLuz Creek	4,700	100
Fern Creek	213,000	100
Kohler Canyon	158,000	40
Long Canyon Spring	89	---
Rainbow Creek	---	0.5
Rattlesnake Canyon	12,000	---
Temecula Creek	25,820	40,000
Sandia Canyon	---	8
Sourdough Spring	55	---
Santa Margarita River	133	4,000
Nelson Creek	1,550	---
TOTAL	906,892	44,313.5

These direct diversion rights of 906,892 gallons per day correspond to 1.4 cfs or 2.78 acre feet per day.

In addition to the active storage rights shown in the previous tabulation, the SWRCB also lists 195,000 acre feet in storage rights on the Santa Margarita River held by the U. S. Bureau of Reclamation for the Santa Margarita Project.

Table 6.1 also lists other rights recognized by the SWRCB. These rights generally are based on Statements of Water Diversion and Use that have been filed with the SWRCB. Such statements include one by the United States on behalf of the Cleveland National Forest, which states that the diversion and use of water from Long Canyon Spring is made pursuant to a withdrawal and reservation of the land and resources for National Forest System purposes as of February 14, 1907.

Besides the federal filing, there are also Statements of Water Diversion and Use filed by individuals. Three of these statements represent riparian or pre-1914 appropriative diversions from DeLuz Creek, Fern Creek and Santa Margarita River which have been reported to the SWRCB. The other statement represents a pre-1914 appropriative right to divert water from a spring in Kohler Canyon into a 40 acre foot reservoir.

The last two rights noted on Table 6.1 represent filings made in 1977 pursuant to Subchapter 2.5 to Chapter 3 of Title 23 of the California Code of Regulations. That subchapter deals with Water Rights for Stockponds.

In addition to appropriative rights under SWRCB jurisdiction, there are a number of nonstatutory appropriative rights which were established prior to 1914. These rights continue to be used to support diversions of water from the Santa Margarita River stream system, and are listed in the various Interlocutory Orders developed in this litigation.

In 1990-91, in Order No. 91-07, the SWRCB revised its Order No. 89-25 entitled, "Order Adopting Declaration of Fully Appropriated Stream Systems and Specifying Conditions for Acceptance of Applications and Registrations." These Orders list the Santa Margarita River stream system as fully appropriated "from the confluence of the Santa Margarita River and the Pacific Ocean upstream including all tributaries where hydraulic continuity exists."

The consequences of this Order are as follows:

1. The Board is precluded from accepting any application to appropriate water from the Santa Margarita River System except where the proposed appropriation is consistent with conditions contained in the Declaration.

2. Initiation of a water right pursuant to the Water Rights Permitting Reform Act of 1988 (Water code Section 1228 et seq.)--that is, by registering small use domestic appropriations--is precluded, except where the proposed appropriation is consistent with conditions contained in the Declaration.

3. Pursuant to Water Code Section 1206(a) the Board is authorized, but not required, to cancel pending applications where inconsistent with conditions contained in the Declaration; previous Orders implement a procedure for disposition of such applications pending on the effective date of the Declaration.

The Order provides for reconsideration of the Order either upon petition of an interested party or upon the Board's own motion.

SECTION 7 - WATER PRODUCTION AND USE

7.1 General

Among other things the Court requires an annual report on the use of water by each substantial user within the Santa Margarita River Watershed. Substantial water users are those who irrigate eight or more acres or who produce or use an equivalent quantity of water.

Water production and use data were obtained from several types of substantial users including water purveyors, Indian Reservations, mobile home parks and individual irrigation users.

Major water purveyors who reported production and use data in 1991-92 Water Year are listed as follows:

Anza Mutual Water Company
Eastern Municipal Water District
Elsinore Valley Municipal Water District
Fallbrook Public Utility District
Lake Riverside Estates
Murrieta County Water District
Rainbow Municipal Water District
Rancho California Water District
U. S. Marine Corps, Camp Pendleton
Western Municipal Water District

Lake Riverside Estates is listed with major water purveyors although it produces make-up water for losses from Lake Riverside and does not deliver water to customers.

In addition to the major purveyors, there are a number of smaller water systems in the Watershed. Of these, Butterfield Oaks Mobile Home Park, and Thousand Trails Resorts are substantial users.

There are three Indian Reservations in the Watershed, however only the Cahuilla and Pechanga Indian Reservations use significant quantities of water. The third Reservation is the Ramona Indian Reservation which has no resident population.

The final category of water users are private landowners who use water primarily for irrigation use.

The water use data collected for the 1991-92 Water Year are summarized on Table 7.1. Monthly production and use data for major water purveyors are attached to this report as Appendix A. Uses are listed under agricultural, commercial and domestic categories. The definition of what constitutes agricultural, commercial and domestic use varies for the different purveyors in the Watershed. Accordingly definitions of these uses for major water purveyors are shown on Table 7.2. It is noted also that much of the non-agricultural water use in the Watershed can also be considered municipal use, which includes both the domestic and commercial uses shown in tables in this report. Similar data for the period 1966-1992 Water Years are summarized in tables presented in Appendix B. Appendix C presents information on substantial users outside of purveyor service areas.

The status of data availability from each of the water users is summarized in the following sections.

7.2 Water Purveyors

Anza Mutual Water Company

Anza Mutual Water Company's Service Area is in the eastern part of the Watershed in the Anza Valley. Production is from two wells: Well No. 1 drilled in 1951 and perforated from 20 feet to 260 feet; and Well No. 2 drilled later to a depth of 287 feet which is perforated in the bottom 130 feet. Production for 1991-92 was 4 acre feet from Well No. 1 and 27 acre feet from Well No. 2 for a total production of 31 acre feet. The depth of water in Well No. 1 ranged from 40 feet to 91 feet.

Interlocutory Judgment No. 33 divides aquifers in Anza Valley at this location into two categories: the shallow aquifer and the deep aquifer. Based on information available to the Court the shallow aquifer was determined to include the younger and older alluvial deposits in the Anza Groundwater Basin and extend to a maximum but variable depth of approximately 100 feet. The deep aquifer underlies the shallow aquifer in an area about one half mile in width and two miles in length, within portions of Sections 16, 17, 21, 22, 27 and 28 of Township 7 South, Range 3 East, SBBM. Anza Mutual Water Company's wells are within the area of the deep aquifer. From the perforated intervals in the wells, it may be concluded that most of the production from Well No. 1 and all of the production from Well No. 2 are from the deep aquifer. Interlocutory Judgment No. 33 concluded that waters contained in the deep aquifer did not add to, support or contribute to the Santa Margarita River stream system and were, therefore, declared to be outside the Court's jurisdiction.

TABLE 7.1

SANTA MARGARITA RIVER WATERSHED
WATER PRODUCTION AND USE
Quantities in Acre Feet
1991-92

	PRODUCTION			USE					
	GROUNDWATER	IMPORT	TOTAL	AG	COMM	DOM	LOSS	TOTAL	WATER RIGHT
WATER PURVEYORS									
Anza Mutual Water Company	31	0	31	0	0	28	3	31	Appropriative
Eastern MWD	527	8,593	9,120	29	0	8,635	456	9,120	Appropriative
Elsinore Valley MWD	0	2,190	2,190	0	0	1,971	219 1/	2,190	----
Fallbrook PUD	45	7,893	7,938	5,285	264	1,937	452	7,938	Appropriative
Lake Riverside Estates	279	0	279	0	279 2/	0	0	279	Appropriative
Murrieta CWD	492	0	492	6	122	302	62	492	Appropriative
Rainbow MWD	0	2,277	2,277	1,877	0	193	207	2,277	----
Rancho California WD	29,968	16,931	46,899	30,651	2,406	9,672	4,170 3/	46,899	Various
U.S.M.C. - Camp Pendleton	4,152	0	4,152	315	--- 4/	1,289	2,548 1/ 5/	4,152	Appropriative/ Riparian
Western MWD	0	25	25	0	23	0	2 1/	25	----
INDIAN RESERVATIONS									
Cahuilla	417	0	417	399	0	18	0	417	Overlying/ Reserved
Pechanga	66	0	66	0	0	66	0	66	Overlying/ Reserved
MOBILE HOME PARKS/CAMPGROUNDS									
Butterfield Oaks Mobile Home Park	12	0	12	0	0	11	1 1/	12	Riparian/ Overlying
Thousand Trails Resorts	43	0	43	0	0	39	4 1/	43	Overlying
SUBSTANTIAL USERS	7,365 6/	0	7,365	7,295	0	0	70 7/	7,365	
TOTAL	43,397	37,909	81,306	45,857	3,094	24,161	8,194	81,306	

1/ Assumes 10% loss
2/ Recreation Use
3/ Includes 683 acre feet released into Murrieta Creek
4/ Listed with Domestic uses
5/ Includes exports of 2370 acre feet
6/ 701 acre feet for surface diversion, 7147 acre feet from groundwater minus 417 acre feet on the Cahuilla Reservation and minus 66 acre feet on the Pechanga Reservation
7/ 10% of surface diversions

TABLE 7.2

SANTA MARGARITA RIVER WATERSHED
DEFINITIONS OF WATER USE
BY MUNICIPAL WATER PURVEYORS
1991-92

	AGRICULTURAL	DOMESTIC	COMMERCIAL
EASTERN MWD	A commercial enterprise producing a crop/livestock on at least 5 acres and able to accept a delivery of at least 24 consecutive hours	Single family, multiple units and agricultural uses of less than 5 acres	Not Reported
FALLBROOK PUD	AG - A commercial enterprise producing a crop/livestock/ fowl on at least 1 acre fully used for ag purposes; can include incidental domestic use related to residency AG/DOM - Water used for both ag and domestic purposes	Single family, multi-unit and large domestic residences and the first 20,000 gallons used by an ag/domestic meter	Offices, business, schools and hydrants
RAINBOW MWD	AG - 1 acre or more of plantable, resalable products DOM/AG - Same as Ag with a house on the parcel	DOMESTIC - Homes	Generally no commercial use in district
RANCHO CALIFORNIA WD	AG - 1 acre or more of plantable, resalable products GOLF - Outside water use at golf courses VINEYARDS - Outside irrigation for vineyards LANDSCAPE - Landscaping around freeways, parking lots, office buildings, median strips, etc.	DOMESTIC - Homes MULTIPLE - Apartments and Condominiums	COMMERCIAL - Office buildings, industrial users other than agri-businesses FLOATING - Fire hydrants used during construction CONSTRUCTION - Other fire hydrants used for grading UNMETERED - Construction accounts used for finish construction work MISCELLANEOUS - Schools, fire departments, parks, government agencies DETECTOR CK. METERS - Only used when there is a fire
MURRIETA CO. WD	Agricultural uses and irrigation for crops	Homes and multiple units	Businesses, public agencies schools and construction
USMC, CAMP PENDLETON	IRRIGATION - Water used for ag purposes, not landscaping, golf courses or parks	CAMP SUPPLY - Includes landscaping, golf courses parks and commercial use	Reported under Camp Supply

Thus, most of the water produced by the Anza Mutual Water Company is outside the Court's jurisdiction. The relatively small portion pumped from the shallow aquifer in Well No. 1 is pumped under a groundwater appropriative right.

Eastern Municipal Water District

Eastern MWD is a member agency of MWD and its service area includes a portion of the Rancho California WD. Within the Watershed, the District wholesales water to Rancho California WD and also sells water directly to consumers. Water sold to Rancho California WD is listed in this report as imported water to the Rancho California WD Service Area.

Eastern MWD's service area outside of Rancho California WD is located in the northern part of the Watershed as shown on the map bound at the end of this Report. Water for their service area is imported or produced locally from Well 7S/3W-15N which is 345 feet deep.

Groundwater production for the 1991-92 Water Year in the Santa Margarita River Watershed totaled 527 acre feet and imports totaled 13,486 acre feet. A portion of that import amounting to 4,893 acre feet was exported from the Santa Margarita River Watershed. These data are shown in Appendix A.

Recent static water levels in Eastern MWD's well have varied from a depth of 129 feet in July, 1989, to as low as 140 feet in August, 1992. The well is generally perforated between the depths of 106 and 333 feet.

The well is located within the Murrieta-Temecula Ground Water Area where the older alluvium is at ground surface. Thus the well produces water from the older alluvium and pumping is under groundwater appropriative rights.

In addition during 1991-92, Eastern MWD reclaimed 3,953 acre feet of wastewater, of which 1,323 acre feet were reused, 245 acre feet were discharged into Temecula Creek and 2,385 acre feet were recharged into the groundwater basin.

During 1991-92, Eastern MWD continued construction of a 24-inch pipeline along Winchester Road to transport wastewater from the Rancho California Regional Water Reclamation Facility to areas within the Watershed for reuse as well as for export of up to 10 mgd from the Watershed. The portion of wastewater which might be exported from the Watershed relative to the proportion of native water in the supply to the wastewater treatment plant's sewer area was considered in an investigation by the Watermaster. It was

concluded that in 1991-92 about one-third of the supply to the plant originates as groundwater in the Santa Margarita River Watershed. The other two-thirds originated as imported water. Thus, export of less than two-thirds of the wastewater production would mean that on a proportional basis no native water would be exported from the Watershed.

Estimates of water production and use for the period 1966-1992 are shown in Appendix B.

Elsinore Valley Municipal Water District

Elsinore Valley MWD provides water to its service area around Lake Elsinore, a portion of which is within the Santa Margarita River Watershed. Elsinore Valley MWD obtains its supply from ten wells, all located outside the Santa Margarita River Watershed, and also imports MWD water through Western MWD.

The District reports that 2,190 acre feet were imported into the portion of their service area which is inside the Santa Margarita River Watershed in 1991-92. Also during 1991-92, approximately 140 acre feet of wastewater were exported from that same area.

Fallbrook Public Utility District

In 1991-92, Fallbrook PUD imported 13,698 acre feet through its contract with the San Diego County Water Authority as shown in Appendix A. Of this quantity, 2,950 acre feet were delivered to the former DeLuz area which is entirely within the Santa Margarita River Watershed. Of the remaining importations it is estimated that 46 percent, or 4,943 acre feet, were delivered to lands inside the Santa Margarita River Watershed. The remainder was delivered to lands in the adjacent San Luis Rey River Watershed. Thus, imports to the Watershed totaled 7,893 acre feet in 1991-92.

In addition to importations, the District has three wells which have supplied water since 1977. In 1991-92 these wells produced 45 acre feet.

All three of these wells are located along the East Fork of DeLuz Creek in an area which has younger alluvium at the ground surface. Interlocutory Judgment No. 32 indicates that this stringer of alluvium varies in width from 100 feet to one-fourth mile and at no place is greater than 50 feet in depth. The well logs for these wells indicate depths of alluvium of 32 feet, 31 feet and 32 feet respectively. Below these depths the wells penetrate fractured granite which composes the basement complex. These wells are cased and sealed with cement grout to depths of 50, 51 and 51.5 feet respectively. Thus it may be concluded that all

of the water from these wells originates in the granite fractures. Interlocutory Judgment No. 32 declares that waters found in the basement complex (fractured granite) are vagrant, local, percolating waters not part of the Santa Margarita River stream system and outside the Court's jurisdiction.

Production during the period 1966 to 1992 included direct diversions from the Santa Margarita River for water years before 1972 as well as imported water and well production as shown in Appendix B.

Lake Riverside Estates

Lake Riverside Estates pumps water from Well No. 7S/2E-32C1, into Lake Riverside to make up evaporation losses. Production for 1991-92 was 279 acre feet. The production well was drilled in 1962 and is located in an area of younger alluvium in the Cahuilla Ground Water Basin. The driller's log shows sand and clay for the entire well depth of 338 feet.

Interlocutory Judgment No. 33 indicates that the owners of lands in the Cahuilla Ground Water Basin have correlative overlying rights to the use of the groundwater which is the basis for this production.

Murrieta County Water District

Murrieta CWD serves the area in the vicinity of the town of Murrieta in Riverside County. In Water Year 1991-92, Murrieta CWD produced 492 acre feet of water as shown in the following tabulation and in Appendix A.

Well Designation	Well Name	1991-92 Production Acre Feet	Casing Depth Feet	Water Depth Feet	Well Depth Feet	Perforated Interval Feet
7S/3W-20C9	Holiday	126	25	85 - 103	307	60 - 307
7S/3W-20G5	House	88	50	112 - 127	298	120 - 252
7S/3W-17R2	Lynch	0	26	63 - 65	212	172 - 212
7S/3W-18J2	North	187	50	136 - 149	650	240 - 260
						500 - 640
7S/3W-20D	South	91	50	119 - 125	446	120 - 446

All of these wells are located in the Murrieta-Temecula Ground Water Area. Interlocutory Judgment No. 30 indicates that in Murrieta Valley the younger alluvium deposits extend in various depths to a maximum of approximately 30 feet from the ground surface. The finding of the maximum depth of the younger alluvium

was based, in part, on U. S. Exhibit 16. That exhibit includes a geologic cross section along the length of Murrieta Valley. This geologic section defines the depth of the younger alluvium based on geologic logs from six wells. These wells are listed below together with the depth of the younger alluvium and the characteristic of the well log that defines the depth of the younger alluvium.

Murrieta Valley Wells Shown on U. S. Exhibit 16	Depth of Younger Alluvium Per Well Log *	Log Characteristic
6S/4W 35P2	64 Feet	Top of 17 feet of light gray clay
7S/4W 12B1	28 Feet	Top of 6 feet of brown sediment
7S/3W 18A3 (Projected)	12 Feet	Top of 52 feet of clay
7S/3W 27N2	18 Feet	Top of 28 feet of sandy soft clay
7S/3W 35P1 (Projected)	26 Feet	Top of 3 feet of clay
8S/3W 13R1	0 Feet	16 feet adobe at top of log

* Logs shown in State of California Department of Water Resources Bulletin 91-20 entitled "Water Wells and Springs in the Western Part of Upper Santa Margarita River Watershed" dated August 1971.

It may be noted that the depth of the younger alluvium is less than 30 feet for all wells in the previous tabulation except 6S/4W 25P2 which lists 64 feet to the first major clay layer, and shows 64 feet to younger alluvium on Exhibit 16.

The reason for not recognizing well 35P2 in determining a maximum depth for younger alluvium is not clear. However it may be noted that the well is near the boundary of the Watershed and perhaps it was believed that it was not representative of the Murrieta Valley. Another point worth noting is that U. S. Exhibit 15L, which is the geologic map of the Murrieta-Temecula area, shows many wells in the Murrieta Valley within the area mapped as younger alluvium in addition to the six noted on U. S. Exhibit 16. Well logs for many of these wells are listed in State of California Department of Water Resources Bulletin 91-20 dated August 1971.

For example, Bulletin 91-20 lists geologic logs for 21 wells in 7S/3W Section 17 which is located in Murrieta Valley. Review of these logs reveals depths of younger alluvium less than 30 feet being clearly shown in all but two wells. One well showed sand to 35 feet (7S/3W 17E2) and another indicated fine sand to 55 feet (7S/3W 17F4).

The Court noted that it was impossible based on evidence available in 1962 to determine the depth of the younger alluvial deposits throughout the Valley with exactness but that subsequent findings could be made if needed because the Court would retain continuing jurisdiction. Older alluvial deposits are found below the younger alluvium.

Four of the five Murrieta CWD wells are perforated at depths of 120 feet or more. One of the Murrieta CWD wells has perforations beginning at a depth of 60 feet. This depth is well below the maximum depth of younger alluvium found by the Court in 1962. In addition, water depths in the well with perforations below 60 feet ranged from 85 to 103 feet in 1991-92. Accordingly the production for all of Murrieta CWD wells is from the older alluvium under a groundwater appropriative right.

Production for the period between 1966 and 1992 is shown in Appendix B.

Rainbow Municipal Water District

Rainbow MWD is located in San Diego County in the south-central part of the Watershed. In recent years about ten percent of the District's imported supply is delivered to the portion inside the Watershed. Most of the District is in the San Luis Rey River Watershed. As shown in Appendix A, total deliveries in the Watershed in 1991-92, which are all imported water, amounted to 2,277 acre feet.

Total imports to the District, for years between 1966 and 1992, as well as the estimated portion served inside the Santa Margarita River Watershed, are shown in Appendix B.

Rancho California Water District

Rancho California WD serves water to a 99,600 acre service area in the central portion of the Watershed. The District produced water from 39 wells in 1991-92 and also imported water, as shown in Appendix A. Use is also shown in Appendix A under the categories of agriculture, commercial and domestic. In Water Year 1991-92, 29,968 acre feet of local supplies were pumped from the Murrieta-Temecula Ground Water Area and 16,931 acre feet were

imported for total production of 46,899 acre feet not including 2,244 acre feet of water released from Vail Dam for recharge. During 1991-92, 683 acre feet were released into the Santa Margarita River to maintain flows.

The District reclaimed 374 acre feet of wastewater during the year which were all reused within the Watershed.

Rancho California WD produces groundwater under a variety of rights as follows:

1. Recovery of water appropriated at Vail Lake
2. Recovery of import return flows and recharged imported water
3. Groundwater appropriative rights

Vail Appropriation

Rancho California WD's Vail Dam appropriative rights are described in Application No. 11518 as amended on June 17, 1947, and Permit 7032. That right provides that the District may store up to 40,000 acre feet in Vail Reservoir each year between November 1 and April 30, and that the water so stored may be used for irrigation and domestic uses incidental to farming operations on 3,797 acres of land between May 1 and October 31. Such use may be by direct diversion from Vail Lake or by recovery with wells of water released from Vail and spread downstream in Pauba Valley.

The place of use for irrigation and domestic use is described as follows:

Sections 5, 6, 7 and 18; T8S, R1W
Sections 1, 10 through 21, 28 and 29; T8S, R2W
Sections 13 and 24; T8S, R3W.

In 1971, the Permit was amended to add recreational use at Vail Reservoir within Section 10, T8S, R1W.

As previously mentioned, 2,244 acre feet were released from Vail during 1991-92. Releases from Vail for groundwater recharge for the period 1972 to 1992 are shown on Table B-7.

A letter from the SWRCB to Rancho California WD dated September 18, 1990 indicates that a "Progress Report" filed by Rancho California WD shows that water appropriated under Permit 7032 is being used for municipal and industrial purposes. Since use of water under Permit 7032 is limited to irrigation, domestic use incidental to farming operations and recreation, such use for municipal and industrial purposes represents an unauthorized use. However the magnitude of the unauthorized use cannot be reported

for the year 1991-92 due to lack of data. Rancho California WD began reporting water use in the Permit 7032 service area and such use will be reported in 1992-93.

United States' representatives have indicated that storage of water in Vail Lake may exceed Rancho California WD's share of the Santa Margarita River flow as allocated under the 1940 Stipulated Judgment. This possibility is being investigated by the Watermaster.

Imported Water Return Flows

During 1991-92, Rancho California WD imported 16,931 acre feet of water compared to 21,238 acre feet in 1990-91. Quantities of imported water served to the Rancho Division and the Santa Rosa Division are shown below for Water Years 1990-91 and 1991-92.

Month	Imported Deliveries Rancho Div.		Imported Deliveries Santa Rosa Div.		Total Imported Deliveries	
	1991	1992	1991	1992	1991	1992
October	444	303	2,509	1,771	2,953	2,074
November	359	0	1,174	841	1,533	844
December	235	0	1,023	143	1,258	143
January	486	0	1,185	0	1,671	0
February	86	0	158	0	244	0
March	131	0	342	0	473	0
April	1	51	1,305	277	1,306	328
May	161	537	883	919	1,044	1,456
June	381	728	1,518	1,552	1,899	2,280
July	836	887	2,203	2,074	3,039	2,961
August	939	918	2,340	2,819	3,279	3,737
September	702	534	1,837	2,574	2,539	3,108
Total	4,761	3,958	16,477	12,973	21,238	16,931

Return flows for 1991-92 from imported water delivered to the Rancho Division are computed as shown on Table 7.3 and on Table 7.4 for the Santa Rosa Division.

In those tables, imported water is allocated to agricultural, commercial and domestic uses in each of eight hydrogeologic areas in the Rancho Division service area. This allocation is the proportion of the total deliveries to each use that is made up of imported water. In 1991-92, 21% of the supply to the Rancho Division was imported and 54% of the supply to the Santa Rosa Division was imported.

TABLE 7.3

SANTA MARGARITA RIVER WATERSHED
RANCHO CALIFORNIA WATER DISTRICT
RETURN FLOW CREDIT
1991-1992
RANCHO DIVISION
Quantities in Acre Feet

HYDROGEOLOGIC AREAS

AQUIFER	0 NO HYDRO-GEO CODE	1 MURRIETA WOLF 1/2 QYAL 1/2 QTOAL	2 SANTA GERTRUDIS QYAL	3 LOWER MESA QTOAL	4 PAUBA QYAL	5 SOUTH MESA QTOAL	6 UPPER MESA QTOAL	7 PALOMAR QTOAL	TOTAL
USE									
AGRICULTURAL *									
Total	2,471.74	1,344.95	240.08	1,574.81	362.13	532.65	1,737.64	935.39	9,199.39
% Import	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21
Import	519.15	282.48	50.42	330.76	76.06	111.87	364.96	196.46	1,932.17
% Credit	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33
Credit	171.32	93.22	16.64	109.15	25.10	36.92	120.44	64.83	637.62
COMMERCIAL									
Total	69.35	683.54	242.49	664.64	165.46	81.61	(113.65)	0.89	1,794.34
% Import	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21
Import	14.56	143.57	50.93	139.60	34.75	17.14	(23.87)	0.19	376.87
% Credit	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Credit	1.46	14.36	5.09	13.96	3.48	1.71	(2.39)	0.02	37.69
DOMESTIC									
Total	657.95	1,310.14	370.78	4,761.66	52.05	138.78	401.42	158.21	7,851.00
% Import	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21
Import	138.19	275.17	77.88	1,000.10	10.93	29.15	84.31	33.23	1,648.96
% Credit	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Credit	34.55	68.79	19.47	250.03	2.73	7.29	21.08	8.31	412.24
TOTAL USE	3,199.04	3,338.63	853.35	7,001.12	579.64	753.04	2,025.42	1,094.49	18,844.72
TOTAL									
Total Import	671.90	701.22	179.23	1,470.46	121.74	158.16	425.40	229.88	3,958.00
Total Credit	207.32 **	176.37	41.20	373.14	31.31	45.92	139.13	73.16	1,087.54
Total Credit Qyal		88.18	41.20		31.31				160.69
Total Credit Qtoal		88.18		373.14		45.92	139.13	73.16	719.53

* Includes golf course and landscape irrigation

** This credit not applied to either Qyal or Qtoal

TABLE 7.4

SANTA MARGARITA RIVER WATERSHED
RANCHO CALIFORNIA WATER DISTRICT
RETURN FLOW CREDIT
1991-1992
SANTA ROSA DIVISION
Quantities in Acre Feet

	HYDROGEOLOGIC AREAS		
AQUIFER	1 MURRIETA WOLF 1/2 QYAL 1/2 QTOAL	8* RTS 279, 280 & 285 1/4 QYAL 3/4 QTOAL	TOTAL
USE			
AGRICULTURAL **			
Total	0.00	656.13	656.13
% Import	0.54	0.54	
Import	0.00	356.39	356.39
% Credit	0.33	0.33	
Credit	0.00	117.61	117.61
COMMERCIAL			
Total	1.87	87.52	89.39
% Import	0.54	0.54	
Import	1.02	47.54	48.55
% Credit	0.10	0.10	
Credit	0.10	4.75	4.86
DOMESTIC			
Total	0.00	652.70	652.70
% Import	0.54	0.54	
Import	0.00	354.53	354.53
% Credit	0.25	0.25	
Credit	0.00	88.63	88.63
TOTAL USE	1.87	1,396.35	1,398.22
TOTAL			
Total Import	1.02	758.46	759.47
Total Credit	0.10	210.99	211.10
Total Credit Qyal	0.05	52.75	52.80
Total Credit Qtoal	0.05	158.25	158.30

* Data for December 1991 through September 1992
** Includes golf course and landscape irrigation

In general the Santa Rosa Division does not overlie the groundwater area. However there are several areas classified as being in the Santa Rosa Division which do overlie the groundwater area and generate return flows from imported supplies. Data from most of these lands have been reported since December, 1991. Return flows from these lands are shown on Table 7.4 (based on a partial year).

There are other areas classified as being in the Santa Rosa Division that also overlie the groundwater area and water use data on these areas is being gathered for future reports.

The percent of imported water which became return flow varies according to the use as follows:

Agricultural Use	33%
Commercial Use	10%
Domestic Use	25%

Based on the foregoing factors, the return flow credit for 1991-92 is computed to be 1,087.54 acre feet for the Rancho Division and 211 acre feet for the Santa Rosa Division.

Some of the hydrologic areas overlie older alluvium and some overlie younger alluvium. Comparison of exposures of younger alluvium with maps of the District's hydrogeologic areas indicates that the Santa Gertrudis, Pauba and half of the Murrieta-Wolf areas overlie younger alluvium. The area of the Santa Rosa Division that overlies the groundwater area is one-fourth in the younger alluvium and three-fourths in the older alluvium. Import return flows in these areas can be credited against pumping from the younger alluvium. These credits for 1991-92 for the Rancho Division are 160.69 acre feet and 52.8 acre feet for the Santa Rosa Division.

There was no recharge of imported water in 1991-92.

Division of Local Water

During 1991-92 Rancho California WD pumped 29,968 acre feet of groundwater. Some of this water was pumped from the younger alluvium as recovery of import return flows, import recharge and Vail recharge and some from the older alluvium under groundwater appropriative rights.

Interlocutory Judgment No. 30 describes the Court's findings with respect to the Murrieta-Temecula Ground Water Area. The Murrieta-Temecula Ground Water Area is depicted on maps presented as exhibits during the litigation. The exhibits show that the groundwater area is generally underlain by younger and older alluvial deposits.

The younger alluvial deposits were determined by the Court to be those deposits laid down by stream action after the course of the Santa Margarita River shifted to its present westerly flow through the Temecula Gorge to the Pacific Ocean. The areal extent of the younger alluvium is shown on maps developed in the 1960's during the litigation. The depth of the younger alluvial deposits throughout the Murrieta Valley could not be determined by the Court with exactness. However the Court did indicate that based on evidence available to the Court in 1962, the maximum depth of the younger alluvium in the Murrieta Valley was approximately 30 feet. The bases for this 30-foot determination have already been discussed in this report in connection with Murrieta CWD production. Similarly in Pauba Valley, the Court stated that the evidence indicated a maximum depth of 130 feet. The Court also noted that it would retain continuing jurisdiction in the case so that subsequent findings could be made if required.

Subsequent to the Court's findings in the early 1960's, additional wells have been constructed by Rancho California WD and additional geologic studies have been conducted. These data and studies indicate a maximum depth of younger alluvium of approximately 200 feet in the Pauba Valley. The basis for the original 130 feet was determined by checking the transcripts of the court case. The transcripts indicate that the 130 feet maximum was based on the depth of younger alluvium at the Windmill Well (8S/2W-12H1) as determined by Mr. Fred Kunkel, a geologist with the U.S.G.S. He also testified that the depth of the younger alluvium progressively thinned to the west from the Windmill Well, so that the deepest younger alluvium was found in the easterly portion of the Pauba Valley. At that time the Windmill Well was the easternmost well in Pauba Valley. It was speculated that the younger alluvium might thin to the east of the Windmill Well as well as to the west but at that time no wells were located east of the Windmill Well. The depths of the younger alluvium in Pauba Valley are shown on U.S. Exhibit 16.

U. S. Exhibit 16 is a geologic cross section of Pauba Valley which shows the depth of younger alluvium It was based on well logs which were shown graphically on Exhibit 16. Well logs for each of those wells were reviewed and the basis for establishing the depth of the younger alluvium was determined as shown in the following tabulation.

DEPTH OF YOUNGER ALLUVIUM FROM LOGS OF WELLS IN PAUBA VALLEY USED TO PREPARE U. S. EXHIBIT 16

Wells Shown on U.S. Exhibit 16	Depth of Younger Alluvium Per Well Log*	Log Characteristic
8S/2W-12H1	130 Feet	Top of 87 feet yellow clay
8S/2W-12K1	140 Feet	Top of 2 feet yellow clay
8S/2W-12F1	115 Feet	Top of 6 feet clay
8S/2W-11J4	137 Feet	Top of 7 feet sandy clay Note: interbedded clays at depths of 54, 80, 82 & 137 feet
8S/2W-11L1	112 Feet	Top of 24 feet of clay
8S/2W-11P1	Deeper than 78 Feet	Depth of well is 78 feet Note: 5 feet clay at depths of 55 feet
8S/2W-15C1	89 Feet	Top of 201 feet of clay and hardpan
8S/2W-16A1	75 Feet	Top of 205 feet of red clay
8S/2W-17Q1	62 Feet	Top of 8 feet brown shaley clay; Note 22 feet black clay with roots at a depth of 29 feet
8S/2W-17M1	55 Feet	Clay streaks 43 - 73 feet
8S/2W-18R1	44 Feet	Depth of well
8S/3W-13R1	Not Applicable	85 feet - stopped in granite

* Logs shown in State of California Department of Water Resources Bulletin 91-20 entitled "Water Wells and Springs in the Western Part of Upper Santa Margarita River Watershed" dated August, 1971.

It is noteworthy that based on the well logs, the depth of younger alluvium in two of the wells, 12K1 and 11J4, is deeper than 130 feet.

From the foregoing it is clear that the depth of the younger alluvium varies from well to well and must be established separately for each well constructed in areas where the younger alluvium is located.

Rancho California WD has made available records of water production for 70 wells for the period between 1966 and 1992.

These wells were located on U.S. Exhibit 15L to determine the aquifer at the ground surface at the well location. Of the 70 wells, nine were determined to be located in areas where older alluvium is at the ground surface and three were determined to be outside the Murrieta-Temecula Ground Water area.

Wells which were located in areas where younger alluvium is at the surface were checked to determine the depths of perforations. Twenty-six of the remaining wells were determined to have no perforations above 200 feet in depth.

Thus of the 70 listed wells, 38 are either outside the groundwater area or pump 100% from the older alluvium aquifer. The remaining 32 wells are listed in Table 7.5 along with their locations, depth of seals and perforated intervals. The depth of the younger alluvium at each well location has been determined from well logs of the individual wells or nearby well logs or cross sections, using the same criteria as was used in Court exhibits.

The younger alluvium was considered to be very shallow in wells located close to the surface contact between the younger alluvium and the older alluvium.

There are a number of factors which can be considered in allocating total well production between the younger alluvium and older alluvium. These factors include relative permeability of the younger and older alluvium, water levels, perforated intervals and the presence of clay layers.

Although the Court has found that the younger alluvium is more permeable than the older alluvium, no data are available to indicate the magnitude of such differences. Even if tests had been conducted at one well, there could be significant variations at other locations in the groundwater area.

TABLE 7.5

SANTA MARGARITA RIVER WATERSHED
DEPTH OF YOUNGER ALLUVIUM IN
RANCHO CALIFORNIA WATER DISTRICT WELLS

RCWD WELL NO.	LOCATION TWN/RGE/SEC	SEAL DEPTH FEET	PERFORATED INTERVAL FEET	DATE DRILLER'S LOG	DEPTH YOUNGER ALLUVIUM FEET	PERCENT YOUNGER ALLUVIUM %		REMARKS
106	7S/3W-26R1	55	130-980	12/14/82	Shallow	0.0%	Murrieta	No. 108 Winchester
107	7S/3W-26J1	55	60-590	12/14/82	Shallow	0.0%	Murrieta	No. 110 Winchester
108	7S/3W-25E1	55	60-590	12/14/82	Shallow	0.0%	Murrieta	No. 109 Franklin Ave
109	8S/2W-17J1	52	70-210	07/14/80	75	4.2%		Brown clay and gravel at 75' to 105'
110	8S/1W-6K1	54	70-460	10/14/82	165	43.2%		Clay 165'-190'
113	7S/2W-25H1	52	96-542	01/15/83	Shallow	0.0%		
115	8S/1W-6H	Unknown	60-326	Not Available	165	39.5%		See #110
116	8S/1W-6J	Unknown	60-390	Not Available	165	31.8%		See #110
119	8S/2W-19J	55	170-470	12/23/86		0	Wolf Valley	
123	8S/1W-7B	55	100-500	05/12/86	135	8.8%		Brown Sand Clay 135'-210'
129	7S/2W-20L	Unknown	180-600	10/26/86	Shallow	0.0%	Santa Gertrudis Creek	Qyal very shallow along Santa Gertrudis Creek
132	8S/1W-7D	55	70-500	02/25/87	175	24.4%		Brown Clay 175'-185'
135	7S/3W-27M10	55	70-170	05/27/87	Shallow	0.0%	Murrieta Valley	
141	8S/2W-11P	55	120-510	10/26/87	104	0.0%		Silt & sand 104'-185'; Well 1111 is 112'
144	7S/3W-27Q	Unknown		Not Available	Shallow	Unknown		Well not equipped
205	7S/3W-35A	96	150-1000	12/23/65	Shallow	0.0%	Santa Gertrudis/ Murrieta Valley	
210	8S/2W-12K	None	48-228	05/17/57	160	62.2%		Clay cobblestones 160'-167'
218	8S/2W-20C1	27	48-289	01/10/54	115	27.8%		Old No. 28; soft clay at 115' to 120'
466	8S/3W-1P2	Unknown	106-822	01/29/52	Shallow	0.0%	Murrieta Valley	
220	7S/3W-35	Unknown	Unknown	Not Available		0.0%		
467	8S/2W-12K1	Unknown	50-100	Not Available		100.0%		Old JK Well, #221, See 12H1
223	8S/2W-20C1	Unknown	48-250	04/17/53	115	33.2%		CAT Well; nearby well 218 at 115'; 17Q at 62'
224	8S/2W-15D	Unknown	48-250	03/17/53	106	28.7%		Old Well 50
230	8S/2W-12	Unknown	24-113	05/31/19	>113	100.0%		Old Well 30
231	8S/2W-20B6	55	80-270	Not Available	115	21.9%		Old P31, 105, 111 Well 218 at 115'
232	8S/2W-11J1	51	95-295	06/04/80	135	28.6%		Old P32; coarse sand & clay 135' - 155'
233	8S/2W-12K1	51	95-295	06/04/80	145	35.7%		Sand & clay 145'-220'
234	8S/2W-11P1	52	80-400	11/12/82	125	14.1%		Brown Clay at 125'; sand & clay at 125' to 140'
235	8S/3W-1Q	55	Unknown	06/15/87	Shallow	0.0%	Murrieta Valley	
236	No data				Unknown	Unknown		No Production
240	8S/2W-11	Unknown	48-298	01/15/53	112	25.6%		Old Well No. 40; Well 11L1 is 112'
301	7S/3W-18Q1	93	140-640	09/13/79	Shallow	0.0%	Murrieta	Old JR1

The allocation of production could be based on the saturated thickness of the younger alluvium relative to the saturated thickness in the older alluvium. This approach would tend to reduce the quantities estimated from the younger alluvium if water levels lower. Water levels vary throughout the year so monthly computations would be necessary. In addition the measured water levels are influenced by the rate of well production and the time between well shut off and the time of measurement.

Thus use of saturated thickness would complicate the computation and require use of water level data which may have errors of measurement.

In this report the production from the younger alluvium is computed using the ratio of the perforated interval in younger alluvium to the total perforated interval in the well. In this way a percentage can be computed for each well and there are no monthly changes. The influences of permeability and water levels are considered to be generally offsetting.

A refinement to the perforated interval approach is to remove clay layers from the analysis, although it might be argued that few wells are perforated in intervals exposed to clay layers. In 1992-93 well logs will be reviewed to determine if clay layers in the perforated sections significantly affect the calculation of production from the younger alluvium.

Production from the younger alluvium and older alluvium for 1991-92 using the percentages noted in Table 7.5 is presented in Table 7.6. It may be noted that 2,487 acre feet were pumped from the younger alluvium and 27,481 were pumped from the older alluvium in 1991-92.

Representatives of Camp Pendleton dispute the foregoing presentation of the depth of and production from the younger alluvium in both the Pauba and Murrieta Valleys but have not provided specific objections.

Western Municipal Water District

Western MWD wholesales imported water to Rancho California WD and also serves water to its Improvement District A near the southern boundary of Riverside County along I-15 freeway. Deliveries to Rancho California WD are included under Rancho California WD.

In Water Year 1991-92, imports to Improvement District A amounted to approximately 25 acre feet.

Deliveries to Improvement District A through turnout WR-13 for the period 1966 to 1992 are shown in Table 5.3.

TABLE 7.6
SANTA MARGARITA RIVER WATERSHED
RANCHO CALIFORNIA WATER DISTRICT
WELL PRODUCTION FROM YOUNGER AND OLDER ALLUVIUM
1991-92
Quantities in Acre Feet

WELL NO.	PRODUCTION FROM QYAL	PRODUCTION FROM QTOAL	TOTAL PRODUCTION
101	0.00	169.00	169.00
102	0.00	173.00	173.00
105	0.00	0.00	0.00
106	0.00	599.00	599.00
107	0.00	0.00	0.00
108	0.00	0.00	0.00
109	33.77	770.23	804.00
110	0.00	0.00	0.00
113	0.00	397.00	397.00
115	0.00	0.00	0.00
116	0.00	0.00	0.00
117	0.00	0.00	0.00
118	0.00	296.00	296.00
119	0.00	0.00	0.00
120	0.00	2,199.00	2,199.00
121	0.00	91.00	91.00
122	0.00	0.00	0.00
123	0.00	0.00	0.00
124	0.00	677.00	677.00
125	0.00	0.00	0.00
126	0.00	1,343.00	1,343.00
128	0.00	182.00	182.00
129	0.00	87.00	87.00
130	0.00	1,224.00	1,224.00
131	0.00	1,010.00	1,010.00
132	0.00	0.00	0.00
133	0.00	0.00	0.00
135	0.00	134.00	134.00
138	0.00	1,831.00	1,831.00
139	0.00	0.00	0.00
140	0.00	759.00	759.00
141	0.00	271.00	271.00
143	0.00	590.00	590.00
144	0.00	0.00	0.00
145	0.00	562.00	562.00
201	0.00	433.00	433.00
203	0.00	627.00	627.00
204	0.00	120.00	120.00
205	0.00	1,534.00	1,534.00
207	0.00	105.00	105.00
208	0.00	433.00	433.00
209	0.00	200.00	200.00
210	1,058.02	642.98	1,701.00
211	0.00	0.00	0.00
212	0.00	291.00	291.00
215	0.00	409.00	409.00
216	0.00	662.00	662.00
217	0.00	390.00	390.00
218	0.00	0.00	0.00
467	0.00	0.00	0.00
223	0.00	0.00	0.00
224	0.00	0.00	0.00
230	0.00	0.00	0.00
231	328.28	1,170.72	1,499.00
232	394.97	986.03	1,381.00
233	672.23	1,210.77	1,883.00
234	0.00	0.00	0.00
235	0.00	1,726.00	1,726.00
240	0.00	0.00	0.00
301	0.00	54.00	54.00
302	0.00	298.00	298.00
309	0.00	2,824.00	2,824.00
TOTAL	2,487.27	27,480.73	29,968.00

U. S. Marine Corps - Camp Pendleton

Camp Pendleton is located on the coastal side of the Santa Margarita River Watershed. Water is provided by 14 wells which produced 4,152 acre feet in Water Year 1991-92. This production is from the younger alluvium and is based on riparian and appropriative rights. Of this quantity, 2,370 acre feet were exported out of the Watershed as shown in Appendix A.

A portion of the exported water amounting to 1,548 acre feet was returned to the Santa Margarita River Watershed as wastewater.

Production and estimated use inside and outside the Watershed, as well as wastewater returns, are shown in Appendix B for the period 1966-1992.

7.3 Indian Reservations

Water use information about the three Indian Reservations in the Watershed is described in the following sections:

Cahuilla Indian Reservation

In general, water deliveries on the Cahuilla Indian Reservation are not measured, however Reservation representatives report that 127 people reside on the Reservation. These residents use water primarily for domestic purposes as well as for livestock watering and grazing. Annual domestic water use, based on 125 gallons per capita per day, amounts to a total annual use of about 18 acre feet from wells listed in Appendix C.

In 1991-92, 205 acres were leased for irrigation use. Crops included 80 acres of potatoes and 125 acres of oats. Water was supplied from the Agri-Empire, Inc. water system which includes six wells at various locations in the Anza Valley based on overlying and reserved rights. One of the wells in the Agri-Empire water system (7S/3E-27D1) is located on the Reservation.

Pechanga Indian Reservation

Reservation representatives report that about 475 people reside on the Reservation. Based on use of 125 gallons per capita per day, annual use from wells listed in Appendix C amounts to approximately 66 acre feet per year for domestic purposes. There is no reported irrigation use.

Ramona Indian Reservation

The Ramona Indian Reservation occupies 560 acres of land of which 321 acres are inside the Watershed. There are no residents on the Reservation and no reported irrigation water use.

7.4 Mobile Homes/Campgrounds

There are a number of mobile home parks in the Watershed. These range from relatively permanent structures, to those catering to recreational vehicles and campgrounds. Water production from wells is shown on Table 7.1 for Butterfield Oaks Mobile Home Park, and Thousand Trails Resorts.

7.5 Irrigation Water Use

Estimated water use reported by other substantial users in the Santa Margarita River Watershed is shown on Table 7.1 to be 7,365 acre feet. This estimate was based on reported irrigated acreage and includes 701 acre feet of surface diversions as shown in Appendix C.

SECTION 8 - UNAUTHORIZED WATER USE

8.1 General

From time to time there are complaints of unauthorized water uses of various types in the Watershed. Such complaints are investigated when they are brought to the attention of the Watermaster Office. The status of the current list of unauthorized uses is described as follows:

8.2 Dams on Chihuahua Creek

In 1986, Agri-Empire, Inc. filed Application No. 28930 with the SWRCB for water rights to store water at three dams previously built on Chihuahua Creek. These dams have capacities to store 172, 8 and 10 acre feet respectively. The application was protested by downstream interests.

During the storms in February and March of 1991, all of these reservoirs filled and spilled. The stored water was subsequently used to irrigate crops in the Oak Grove Valley. It was determined that 100 acre feet had been stored without a water right. After discussions, Agri-Empire agreed to certain requirements regarding the distribution of water until such time as the water right is approved. These requirements included release of 100 acre feet of water as soon as possible into Chihuahua Creek and release of 50 percent of the subsequent water produced by the system into Chihuahua Creek.

During February and March of 1992, 122 acre feet were released into Chihuahua Creek which satisfied the 100 acre feet owed plus an additional 22 acre feet. During 1992, 225 acre feet were diverted into the irrigation system and 64 acre feet were released into Chihuahua Creek in addition to the 100 acre feet previously noted. Thus as of September, 1992 Agri-Empire owed 48 acre feet in Chihuahua Creek releases. These releases were made in January 1993.

Subsequently, the SWRCB has advised Agri-Empire that in Orders 89-25 and 91-07 the Board declared the Santa Margarita River System to be fully appropriated and that the Board is unable to process the application.

In April 1992 Agri-Empire requested that the Board continue to process the application and contended that Application 28930 should not be subject to the Declarations of Fully Appropriated Stream Systems because the Chihuahua Creek area is not hydraulically continuous to Temecula Creek.

In August 1992, the Watermaster advised the SWRCB that the U. S. District Court does retain continuing jurisdiction over, among other things, the use of all surface waters within the Watershed. The SWRCB was also advised that the Court had found, in Interlocutory Judgment No. 34, that the surface water and subsurface waters of Chihuahua Creek do add to, contribute to, and support the Santa Margarita River stream system.

8.3 Unauthorized Small Storage Ponds

In addition to the dams on Chihuahua Creek, many other small dams and reservoirs have been constructed on streams in the Watershed. The legal basis for these ponds is described in the 1988-89 Watermaster Report. Basically, the Court has held that ponds less than 10 acre feet in capacity and used for stock watering are a valid use of riparian water. The Court has also held that:

> The temporary or non-seasonal impoundment by riparian owners for the purpose of providing a head for irrigation or for the purpose of temporarily accumulating sufficient water to make possible efficient irrigation is a proper riparian use of water.

Criteria for determining non-seasonal storage of irrigation water have yet to be developed.

8.4 Rancho California Water District Water Use

A number of unauthorized water use issues have been raised by the United States. These issues and action to investigate and/or correct the issues are as follows:

1. Violation of the 1940 Stipulated Judgment - United States' representatives have indicated their belief that the provisions of the 1940 Stipulated Judgment have been violated in two respects by Rancho California WD:

   A. Storage of water in Vail Lake exceeds the portion of the Santa Margarita River flow allocated to Rancho California WD by the Stipulated Judgment.

   B. Production of water by Rancho California WD from the older alluvium should be included with surface water in determining whether water use by Rancho California WD exceeds that portion allocated to Rancho California WD by the Stipulated Judgment.

   Rancho California WD disagrees with each of these contentions. The Watermaster is preparing an analysis of the 1940 Stipulated Judgment which will address these contentions.

2. Rediversion and Use not in Accord with Terms of Permit 7032 - As noted in Section 7 of the report, the place of use, rediversion facilities and the type of use of water appropriated under Rancho California WD's Vail Dam Application No. 11518 and Permit 7032 have changed since the Application was filed in 1947.

   A letter from the SWRCB to Rancho California WD dated September 18, 1990 indicates that a "Progress Report" filed by Rancho California WD shows that water appropriated under Permit 7032 is being used for municipal and industrial purposes. Since use of water under Permit 7032 is limited to irrigation, domestic use incidental to farming operations and recreation, such use for municipal and industrial purposes represents an unauthorized use. However the magnitude of the unauthorized use in 1991-92 cannot be reported due to lack of data. Data are being collected to determine the magnitude of the uses on the authorized service area of Permit 7032.

   Rancho California WD initiated the process of changing Permit 7032 on September 1, 1992 by filing a Notice of Intent to Adopt a Negative Declaration for a Petition for Change to the SWRCB, Division of Water Rights, relative to Appropriations Water Permit 7032.

8.5 Other Potential Unauthorized Uses

United States' representatives also contend that water is being pumped from the younger alluvium in Murrieta Valley without a permit. This contention is based on the belief that the younger alluvium is more than 30 feet in depth in the Murrieta Valley. Well logs are being reviewed to determine if there is basis for such contentions.

SECTION 9 - THREATS TO WATER SUPPLY

9.1 General

General threats to the long-term water supply in the Santa Margarita River Watershed were previously mentioned in Watermaster Reports. These included:

1. High nitrate concentrations in Rainbow Creek and in Anza Valley.

2. Potential overdraft conditions at various locations in the Santa Margarita River Watershed.

3. Potentially adverse salt balance conditions in the upper Santa Margarita River area.

4. Proposed San Diego County Landfill along Rainbow Creek.

5. Construction of a soil treatment facility on the Cahuilla Indian Reservation.

9.2 High Nitrate Concentrations

In recent years high concentrations of nitrate have been measured on Rainbow Creek and in Anza Valley. During 1991-92 one water sample was collected from Rainbow Creek at Willow Glen Road by the Environmental and Natural Resources Management Office at Camp Pendleton as part of their surface water quality monitoring program. Analysis of the water quality sample collected on June 22, 1992 indicated a nitrate concentration of 13.7 mg/l as Nitrogen which exceeds the drinking water limit of 10 mg/l as Nitrogen.

In August, 1992 a grant to the Mission Resource Conservation District for the "Rainbow Creek Non-Point Source Nitrate Reduction Project" was approved by the SWRCB. The project includes installation of a stream gaging station on Rainbow Creek to monitor nitrate and phosphate concentrations. The project also includes distribution of educational literature, seminars, and a demonstration of a tailwater recovery project. The project is expected to be initiated in the Spring of 1993.

In 1986 the U.S.G.S. reported in Water-Resources Investigation Report 88-4029 that the EPA drinking water limit of 10 mg/l of Nitrogen was exceeded in 8 of 30 wells sampled in Anza Valley. The U.S.G.S. attributed the high concentrations to animal wastes and septic systems which affected wells perforated in weathered consolidated rocks. Except for one sample, wells in the main agricultural areas of Anza Valley have concentrations below the EPA drinking water limit for nitrate.

Since 1986, the U.S.G.S. has collected water samples from four wells on the Cahuilla Indian Reservation as shown in Appendix D. None of the four were among the wells which exceeded the drinking water standard in 1986. Samples collected from the wells noted nitrate concentrations below the drinking water standard of 10 mg/l as Nitrogen.

9.3 Potential Overdraft Conditions

Previous Watermaster reports have noted concerns about overdraft conditions in Anza Valley and in the Temecula-Murrieta area.

The 1989-90 Report indicated that a water supply study, conducted by a consultant to Riverside County, concluded that water use in 1986 was approximately equal to the perennial yield in the Anza Valley and that as of 1986 useable groundwater in storage approximated 56,000 acre feet.

No further groundwater studies have been conducted.

Groundwater levels for Anza Mutual Water Company's Well No. 1 (7S/3E-21G1) rose two feet between October, 1991 and October, 1992.

No recent studies of safe yield are available for the Temecula-Murrieta area. Groundwater resources in much of the area are being managed by Rancho California WD. The District has indicated that it operates the basin so as to develop its maximum perennial yield. If the District is successful in its approach there should be no net lowering of groundwater levels over an extended period of time.

Accordingly, groundwater levels throughout the basin area are being monitored by the District and the Watermaster Office. The District uses the record of well production and the related water levels to prepare and implement its annual groundwater production program so as to avoid continual declines in groundwater levels. Water level data collected each year are plotted on graphs in the Watermaster's office which depict water levels measured since the well was constructed. In this way long-term trends in groundwater levels can be monitored. If there is no continual decline in water levels or other adverse impact, then overdraft conditions do not exist.

Data reported in Section Four of this Report indicate that the Windmill Well (8S/2W-12H1) located at the eastern part of Pauba Valley dropped 6.1 feet in 1991-92. Well 7S/3W-20C9 in the Murrieta CWD area dropped 4.3 feet.

9.4 Salt Balance

A key issue in management of salt buildup is the export of water from the upper Santa Margarita River Watershed.

During 1990, agreement to allow Live Stream Discharge to the Santa Margarita River was reached among four parties: Eastern MWD, Fallbrook PUD, Rancho California WD and the United States Marine Corps Base at Camp Pendleton.

During 1991-92 the Regional Water Quality Control Board adopted Resolutions 92-03 and 92-09 issuing National Pollutant Discharge Elimination System (NPDES) permits to Eastern MWD and Rancho California WD. These permits would allow Live Stream Discharge of treated wastewater into the Santa Margarita River stream system. The U. S. Environmental Protection Agency (EPA) objected to some of the terms of the permits and assumed responsibility for the permits. Negotiations are continuing among EPA and the project proponents over the terms of the permits.

If approved, this project would provide a cost-effective solution to the disposal of wastewater in the upper Santa Margarita River area, as well as provide the potential for controlling salt balance in the Watershed.

9.5 Proposed Landfill

San Diego County continued to seek approvals for Class III landfill sites in the northern part of San Diego County. In 1992 the County added two additional sites to those previously listed so that the following four sites are now under consideration:

1. Aspen Road site
2. Gopher Canyon site
3. Gregory Canyon Road site
4. Merriam Mountain South site

Detailed site studies are to be conducted on these sites in 1993 with a report to the County Board of Supervisors due in early 1994. Following that report an environmental impact report will be prepared on the alternatives which are found to be acceptable by the County.

Three of the four sites are in the San Luis Rey River Watershed and the Aspen Road site is in the Santa Margarita River Watershed along Rainbow Creek about two miles upstream from its confluence with the Santa Margarita River.

9.6 Soil Treatment Facility

In 1991 a soil treatment facility was constructed on lands in the Cahuilla Indian Reservation. This facility receives and treats regulated wastes which include soils which contain petroleum hydrocarbons (Non-RCRA hazardous waste).

The site is within the Watershed tributary to Cahuilla Creek and surface flows of Cahuilla Creek are subject to the continuing jurisdiction of the Court. The operator has installed a temporary berm around the perimeter of the site and has constructed a holding pond to collect runoff that falls within the treatment facility. In 1992 the operator developed a permanent plan for containment of runoff under 100-year rainfall conditions. This plan is being revised to respond to concerns about the size of ponds required to contain the 100-year rainfall.

SECTION 10 - WATER QUALITY

10.1 Surface Water Quality

In 1991-92 surface water quality in the Watershed was monitored by Camp Pendleton and Eastern MWD. Stations monitored by Camp Pendleton are listed on Table 10.1 which also shows the available period of record at these locations. Water quality data collected in June 1992 are shown on Appendix Table D-1.

As already noted the sample taken from Rainbow Creek at Willow Glen showed nitrate concentrations above the drinking water limit. That same sample also showed a significant increase in the bicarbonate concentration from past analysis. There are no drinking water standards for bicarbonate.

The sample taken from the Santa Margarita River at DeLuz Road indicates a total dissolved solids concentration of 1880 mg/l. When compared to the other constituents this concentration appears to be too high. A value of about 900 mg/l would be more in line with the other determinations.

Water quality data for surface streams sampled by Rancho California WD in prior years are shown in Appendix Table D-2.

Santa Margarita River Monitoring Program

Under the Santa Margarita River Monitoring Program Eastern MWD collected samples from eight sites along the Santa Margarita River stream system from Temecula Creek near I-15 to the estuary near I-5.

Samples collected at these sites were analyzed for a wide variety of information including total dissolved solids, total nitrogen, nitrate as nitrogen, total phosphorus and dissolved oxygen. This information plus temperature, velocity and flow data collected at the sites are shown on Appendix Table D-8 for Water Years 1990-91 and 1991-92.

In addition to the data listed on Appendix Table D-8, samples from the Camp Pendleton diversion dam site were also analyzed for chemical constituents. These results are shown on Appendix Table D-7.

10.2 Groundwater Quality

During 1991-92 samples of groundwater were collected from four wells at Camp Pendleton as shown on Appendix Table D-6. All four of the samples show decreases in specific conductance. Normally these decreases would also be reflected in lowered total dissolved solids (TDS) concentrations. In this instance two of the wells show increases in TDS.

TABLE 10.1

SANTA MARGARITA RIVER WATERSHED
WATER QUALITY STATIONS
MONITORED BY USMC, CAMP PENDLETON
1991-92

STATION	SAMPLING FREQUENCY	PERIOD FROM	PERIOD TO	PERIOD OF RECORD
Fallbrook Creek/NWS	Periodically	1968	Present	XXXXXXXXXXXXXXXXXXXXXXX
Santa Margarita River Near FPUD Sump	Periodically	1951	Present	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
DeLuz Creek at DeLuz/ Murrieta Road (McDowell)	Periodically	1953	Present	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
Murrieta Creek Near Temecula	Periodically	1968	Present	XXXXXXXXXXXXXXXXXXXXXXX
Temecula Creek at I-15	Periodically	1961	Present	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
Fallbrook Creek at Lake O'Neill	Periodically	1965	Present	XXXXXXXXXXXXXXXXXXXXXXXXXXXX
Lake O'Neill	Periodically	1952	Present	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
Rainbow Creek at Willow Glen Road	Periodically	1970	Present	XXXXXXXXXXXXXXXXXXXXX
Sandia Creek Near Fallbrook	Periodically	1989	Present	XXXX
Santa Margarita River at Temecula Gorge	Periodically	1989	Present	XXXX

YEAR 1950 1960 1970 1980 1990 2000

Further examination indicates that the ratio of TDS to specific conductance for the four wells increased from an average of 0.59 from the prior reading in June 1991 to an average of 0.63 for the March 1992 samples indicating a change in the relative proportion of constituents in the water. Review of the data shows consistent increases in bicarbonate concentrations in all four wells and decreases in chlorides in three of the four wells. However comparison of these increased bicarbonate concentrations with historic concentrations shows these increases to be within the range of historic fluctuations.

Water quality sampling data for seven wells in Murrieta CWD are listed in Appendix Table D-3. All active production wells were sampled repeatedly for nitrate in 1991-92. None of the samples had concentrations that exceed drinking water standard for nitrate.

Water quality data for Rancho California WD wells are shown in Appendix Table D-4. New data were collected from 14 wells during 1991-92.

Changes in TDS included increases in five of the 14 wells, decreases in five wells and no change or no report for the other four wells. Two wells had significant increases in TDS: Well 102 showed increases from 370 to 615 mg/l and Well 231 showed increases from 805 to 1270 mg/l. Similarly two wells showed major decreases: concentrations in Well 150 decreased from 1235 to 590 mg/l and those in Well 151 dropped from as much as 3410 mg/l in 1988 to 295 mg/l.

Well 231 with a sulfate concentration of 510 mg/l from a March 4, 1992 sampling is well above the 250 mg/l secondary standard. Normally in large water systems production from a single well is blended with that from other wells to produce delivered water that is well within recognized standards. However the well and its production should be monitored to insure that the water is blended.

Appendix Table D-5 shows water quality data collected in prior years by the U.S.G.S. from wells on Indian Reservations.

SECTION 11 - FIVE YEAR PROJECTION OF WATERMASTER OFFICE TASKS, EXPENDITURES AND REQUIREMENTS

11.1 General

Primary Watermaster tasks are listed in Table 11.1 together with the budgeted hours of time to be devoted to each task during the current Water Year and over the five Water Years 1993-94 through 1997-98. A projection of Watermaster Office expenditures over the next five years is also shown on Table 11.1.

11.2 Task Description

These tasks are briefly described in the following paragraphs.

1. Update List of Substantial Users - A basic list of substantial water users is shown in Appendix C. Activities include adding new users to the list and monitoring the users on the current list.

2. Collect Water Production, Use, Import and Availability Data - This task includes collection of the quantities of water diverted, extracted, impounded, exported, imported, used or reclaimed by water districts and by other substantial users. As shown in Appendices A and B, water use is categorized among agricultural, domestic and commercial uses. This task also includes collection of data on surface diversions, and related consumptive use, return flows and losses.

3. Collect Well Location, Construction and Water Level Data Determination of the water in subsurface storage, changes in groundwater storage and trends in water levels requires collection of information on water levels and well construction data.

4. Administer Water Rights - Water users in the Watershed employ a wide variety of water rights. Activities in this task include researching the bases of existing water rights and comparing water rights with water use.

TABLE 11.1

SANTA MARGARITA RIVER WATERSHED
PROJECTED WATERMASTER TASKS
Estimated Hours per Water Year

WATERMASTER TASKS	CURRENT YEAR	PROJECTED FUTURE YEARS				
	1992/93	1993/94	1994/95	1995/96	1996/97	1997/98
1. Update List of Substantial Users	50	50	50	50	50	50
2. Collect Water Production, Use, Import and Availability Data	100	100	100	100	100	100
3. Collect Well Construction and Water Level Data	100	50	50	50	50	50
4. Administer Water Rights	100	100	100	100	100	100
5. Determine Changes in Subsurface Storage	200	200	200	100	100	100
6. Collect Water Quality Data	40	40	40	40	40	40
7. Determine Salt Balance	0	50	50	150	80	80
8. Prepare List of All Water Users under Court Jurisdiction	100	100	100	100	100	100
9. Attend Meetings	150	150	150	150	150	150
10. Administer Lake Skinner MOU	60	60	60	60	60	60
11. Administer Steering Committee Matters	150	150	150	150	150	150
12. Prepare Court Reports/Budgets	100	100	100	100	100	100
13. Miscellaneous Computer Operation	60	60	60	60	60	60
14. Monitor Streamflow and Water Quality Measuring Stations	50	50	50	50	50	50
15. Monitor Water Quality Activities and Water Right Appropriations	50	50	50	50	50	50
16. Miscellaneous Administrative Services	100	100	100	100	100	100
17. Data Management	1,500	1,500	1,500	1,500	1,500	1,500
18. Prepare Inventory of Stockponds and Reservoirs	30	30	30	30	100	100
19. Contingency for Unforeseen Tasks	200	200	200	200	200	200
20. TOTAL	3,140	3,140	3,140	3,140	3,140	3,140
21. ESTIMATED BUDGET	$153,000	$161,000	$169,000	$177,000	$186,000	$195,000

5. Determine Changes in Subsurface Storage - In this task well construction and water level data will be used to determine trends in levels, as well as quantities in storage in various hydrologic subunits. This determination will include estimates of quantities of water in storage and the source and quantity of recharge.

6. Collect Water Quality Data - Determination of basin water quality trends and salt balance requires collection of water quality data. Such data are needed for historic surface water supplies, historic outflows and exports as well as groundwater in storage.

7. Determine Salt Balance - Following collection of water quality data and understanding of subsurface recharge the salt balances for various hydrologic subunits will be determined. This work follows the water level and storage change analysis.

8. Prepare List of All Water Users Under Court Jurisdiction This major task has been deferred because it involves preparing a list of all private water users within certain areas in the Watershed. It can best be prepared using the assessor rolls as a starting point and then determining if there is any water use on the property. This list will also include a description of vested rights and appropriative priority dates if required.

9. Attend Meetings - This task provides for attending meetings to remain apprised of activities which affect water matters in the Santa Margarita River Watershed.

10. Administer Lake Skinner MOU - This task provides for monitoring the operation of Lake Skinner to ensure that MWD is in compliance with the provisions of the Memorandum of Understanding on the Operation of Lake Skinner. This task includes cooperation with MWD in the development of an MOU for MWD's Eastside Reservoir Project.

11. Administer Steering Committee Matters - This task involves administration of quarterly Steering Committee meetings, including distribution of notices and agendas, preparation of minutes, attendance at meetings, and dealing with various Steering Committee matters.

12. Prepare Court Reports/Budgets - Each year an annual report, which includes a budget and projected tasks, is required to be forwarded to the Court.

13. Miscellaneous Computer Operations - Efficient operation of the Watermaster Office is based on maximizing the use of computers. This requires periodic attendance at training sessions, classes and/or acquisition and use of new software and computer equipment.

14. Monitor Streamflow and Water Quality Measuring Stations Operation and maintenance of existing stream gaging stations and water quality monitoring stations are handled by others. However, the Watermaster Office relies on the data from these stations and assists in interpretation of station data and in maintaining or improving the quality of station records and data. This task includes determining source of flows measured at gaging stations.

15. Monitor Water Quality and Water Right Activities - This task provides for investigating unauthorized water appropriations and water quality violations in the Watershed.

16. Miscellaneous Administrative Services - This task provides for office administration, operation and general correspondence.

17. Data Management - This task provides for assistance to the Watermaster with data management for reports and correspondence.

18. Prepare Inventory of Ponds and Reservoirs - In recent years numerous small ponds and reservoirs have been constructed along streams in the Watershed. Some of these store water appropriated using SWRCB procedures. Other impoundments may constitute unauthorized water appropriations. In this task an inventory of ponds would be developed as a first step in determining which are authorized and which are not. Completion of this task provides an opportunity to check surface water diversions and substantial users.

19. Contingency for Unforeseen Tasks - This task provides for tasks that cannot be foreseen two or three years ahead.

SECTION 12 - WATERMASTER OFFICE BUDGET 1993-94

A proposed Watermaster Office Budget of $154,400 for the Water Year ending September 30, 1994, is included in this report as Table 12.1.

In addition to the operation of the Watermaster Office, the Watermaster has executed an Agreement with the U.S.G.S. to operate gaging stations in the Watershed. It is anticipated that this Agreement will be continued in succeeding years. The local cost for operation and maintenance of these stations, including a credit for the lack of operation of the station on DeLuz Creek during the Water Year 1991-92, is $115,540.

TABLE 12.1

SANTA MARGARITA RIVER WATERSHED
PROPOSED WATERMASTER OFFICE BUDGET
Water Year Ending September 30, 1994

	APPROVED BUDGET CURRENT YEAR 1992-1993	PROPOSED BUDGET 1993-1994
	Total	Total
Watermaster Office	$	$
Rent	2,400	2,400
Accounting Services	4,000	4,000
Supplies	2,000	2,000
Insurance		
General Liability & Professional	4,000	4,000
Printing	1,200	1,200
Audit	2,100	2,100
Publications	2,200	2,200
Clerical/Data Management	36,000	40,000
Engineering Assistance	4,000	4,000
Utilities		
Telephone	2,100	2,100
Sanitation	1,000	1,000
Electric	900	900
Miscellaneous Operating/Maintenence	2,000	2,000
Watermaster		
Consulting Services	75,000	75,000
Automobile Expense	3,600	3,600
Travel Reimbursements	4,800	4,800
Equipment		
Computer	1,500	1,500
Software	1,200	1,200
Furniture	300	---
Copy Machine	400	400
Contingency	2,300	---
SUBTOTAL WATERMASTER OFFICE	$153,000	$154,400
Estimated Cost of USGS Gaging Station Operation	109,984	115,540
TOTAL	$262,984	$269,940

WATERMASTER
SANTA MARGARITA RIVER WATERSHED

SANTA MARGARITA RIVER WATERSHED
ANNUAL WATERMASTER REPORT
WATER YEAR 1991-92

APPENDIX A
WATER PRODUCTION AND USE
WATER YEAR 1991-92

JULY 1993

TABLE A-1

SANTA MARGARITA RIVER WATERSHED
MONTHLY WATER PRODUCTION AND USE

EASTERN MUNICIPAL WATER DISTRICT
1991-92
Quantities in Acre Feet

	PRODUCTION					USE						RECLAIMED WASTE WATER				
MONTH YEAR	WELLS	IMPORTED 1/	EXPORTED FROM SMRW	NET IMPORT	TOTAL	AG 2/	COMM	DOM 3/	TOTAL	LOSS	TOTAL USE+LOSS	REUSE IN SMRW	EXPORT	DISCHARGED TO RIVER	RECHARGED	TOTAL
1991																
OCT	62	1,830	709	1,121	1,183	5	0	1119	1,124	59	1,183	114	0	0	92	206
NOV	56	1,420	315	1,105	1,161	1	0	1102	1,103	58	1,161	58	0	0	203	261
DEC	53	978	439	539	592	0	0	562	562	30	592	60	0	82	94	236
1992																
JAN	66	422	143	279	345	0	0	328	328	17	345	30	0	81	195	306
FEB	48	297	160	137	185	1	0	175	176	9	185	24	0	82	257	363
MAR	57	2	1	1	58	1	0	54	55	3	58	28	0	0	353	381
APR	58	1,538	546	992	1,050	1	0	997	998	52	1,050	29	0	0	366	395
MAY	51	1,366	600	766	817	1	0	775	776	41	817	86	0	0	274	360
JUNE	12	1,466	465	1,001	1,013	7	0	955	962	51	1,013	106	0	0	222	328
JULY	45	1,385	414	971	1,016	3	0	962	965	51	1,016	313	0	0	53	366
AUG	4	1,583	602	981	985	4	0	932	936	49	985	263	0	0	131	394
SEPT	15	1,199	499	700	715	5	0	674	679	36	715	212	0	0	145	357
TOTAL	527	13,486	4,893	8,593	9,120	29	0	8,635	8,664	456	9,120	1,323	0	245	2,385	3,953

1/ Does not include deliveries to Rancho California Water District or Elsinore Valley Municipal Water District

2/ Figures are 95% of water pumped and imported to allow for 5% loss

3/ Figures are 95% of water pumped and imported to allow for 5% loss

TABLE A-2

SANTA MARGARITA RIVER WATERSHED
MONTHLY WATER PRODUCTION AND USE

FALLBROOK PUBLIC UTILITY DISTRICT
1991-92
Quantities in Acre Feet

	PRODUCTION							USE					
MONTH YEAR	LOCAL	TOTAL DISTRICT IMPORT	DELUZ AREA IMPORT	FALLBROOK AREA IMPORT	SMRW IMPORT 1/	TOTAL SMRW IMPORT	TOTAL PRODUCTION	AG	COMM	DOM	TOTAL IN SMRW	LOSS*	TOTAL USE IN SMRW
1991													
OCT	7	1,418	350	1,068	491	841	848	590	26	206	822	26	848
NOV	6	1,182	242	940	433	675	681	473	23	153	649	32	681
DEC	6	752	171	581	267	438	444	341	18	151	510	(66)	444
1992													
JAN	4	550	80	470	216	296	300	160	14	98	272	28	300
FEB	5	415	47	368	169	216	221	140	15	111	266	(45)	221
MAR	6	288	20	268	123	143	149	54	13	92	159	(10)	149
APR	3	875	193	682	314	507	510	237	14	103	354	156	510
MAY	0	1,309	298	1,011	465	763	763	496	23	137	656	107	763
JUNE	0	1,520	361	1,159	533	894	894	587	25	208	820	74	894
JULY	8	1,719	342	1,377	633	975	983	646	31	196	873	110	983
AUG	0	1,897	437	1,460	672	1,109	1,109	784	29	257	1,070	39	1,109
SEPT	0	1,773	409	1,364	627	1,036	1,036	777	33	225	1,035	1	1,036
TOTAL	45	13,698	2,950	10,748	4,943	7,893	7,938	5,285	264	1,937	7,486	452	7,938

1/ Approximately 46% of the Fallbrook area is within the Santa Margarita River Watershed

*Loss = Total production less total use

TABLE A-3

SANTA MARGARITA RIVER WATERSHED
MONTHLY WATER PRODUCTION AND USE

MURRIETA COUNTY WATER DISTRICT
1991-92
Quantities in Acre Feet

	PRODUCTION	USE					
MONTH YEAR	WELLS	AG	COMM	DOM	TOTAL DELIVERED	LOSS*	TOTAL USE
1991							
OCT	41	1	10	28	39	2	41
NOV	35	1	8	21	30	5	35
DEC	29	1	8	21	30	-1	29
1992							
JAN	23	0	5	16	21	2	23
FEB	20	0	2	3	6	14	20
MAR	21	0	6	12	18	3	21
APR	22	0	6	15	21	1	22
MAY	51	0	9	29	38	13	51
JUNE	59	0	14	34	48	11	59
JULY	64	1	17	38	55	9	64
AUG	67	1	14	43	58	9	67
SEPT	60	1	23	42	66	-6	60
TOTAL	492	6	122	302	430	62	492

* Loss = Total production less total delivered

TABLE A-4

SANTA MARGARITA RIVER WATERSHED
MONTHLY WATER PRODUCTION AND USE

RAINBOW MUNICIPAL WATER DISTRICT
1991-92
Quantities in Acre Feet

	PRODUCTION			USE				
MONTH YEAR	LOCAL	IMPORT TO WATERSHED	TOTAL IN WATERSHED	AG	COMMERCIAL/ DOMESTIC	TOTAL DELIVERIES	LOSS*	TOTAL USE
1991								
OCT	0	301	301	237	37	274	27	301
NOV	0	223	223	173	29	202	21	223
DEC	0	175	175	133	26	159	16	175
1992								
JAN	0	81	81	67	7	74	7	81
FEB	0	59	59	48	5	53	6	59
MAR	0	70	70	52	11	63	7	70
APR	0	136	136	115	9	124	12	136
MAY	0	189	189	162	10	172	17	189
JUNE	0	244	244	208	14	222	22	244
JULY	0	213	213	176	18	194	19	213
AUG	0	298	298	259	12	271	27	298
SEPT	0	288	288	247	15	262	26	288
WATER YEAR TOTAL	0	2,277	2,277	1,877	193	2,070	207	2,277

*Loss = 10% of use

TABLE A-5

SANTA MARGARITA RIVER WATERSHED
MONTHLY WATER PRODUCTION AND USE

RANCHO CALIFORNIA WATER DISTRICT
1991-92
Quantities in Acre Feet

	PRODUCTION					USE									RECLAIMED WASTE WATER		
	LOCAL			IMPORT	TOTAL	AG	COMM	DOM	SWR RELEASE	VAIL RECHARGE	IMPORT RECHARGE	TOTAL USE	LOSS*	TOTAL	REUSE IN SWRW	EXPORT	RECHARGED
MONTH YEAR	WELLS IN GWA	WELLS OUT GWA	VAIL RELEASE														
1991																	
OCT	3,201	0	458	2,074	5,733	3810	190	1079	153	458	0	5,690	43	5,733	31	0	0
NOV	2,621	0	765	844	4,230	3645	313	1018	0	765	0	5,741	(1,511)	4,230	31	0	0
DEC	2,177	0	362	143	2,682	2787	231	766	0	362	0	4,146	(1,464)	2,682	21	0	0
1992																	
JAN	1,395	0	257	0	1,652	1,255	150	577	0	257	0	2,239	(587)	1,652	13	0	0
FEB	1,320	0	0	0	1,320	809	113	401	0	0	0	1,323	(3)	1,320	11	0	0
MAR	986	0	0	0	986	755	135	466	0	0	0	1,356	(370)	986	10	0	0
APR	2,517	0	0	328	2,845	285	111	393	0	0	0	789	2,056	2,845	29	0	0
MAY	3,348	0	0	1,456	4,804	1,756	203	512	46	0	0	2,517	2,287	4,804	43	0	0
JUNE	2,939	0	0	2,280	5,219	2,877	227	935	108	0	0	4,147	1,072	5,219	41	0	0
JULY	3,150	0	0	2,961	6,111	3,502	274	1,021	118	0	0	4,915	1,196	6,111	46	0	0
AUG	3,323	0	0	3,737	7,060	4,166	224	1,170	134	0	0	5,694	1,366	7,060	49	0	0
SEPT	2,991	0	402	3,108	6,501	5,004	235	1,334	124	402	0	7,099	(598)	6,501	49	0	0
TOTAL	29,968	0	2,244	16,931	49,143	30,651	2,406	9,672	683	2,244	0	45,656	3,487	49,143	374	0	0

*Loss = Total production less total use

TABLE A-6

SANTA MARGARITA RIVER WATERSHED
MONTHLY WATER PRODUCTION AND USE

U.S.M.C. - CAMP PENDLETON
1991-92
Quantities in Acre Feet

	PRODUCTION			USE						RECLAIMED WASTE WATER		
MONTH / YEAR	AG	CAMP SUPPLY	TOTAL	AGRICULTURE 1/ IN-SMRW	AGRICULTURE 1/ OUT-SMRW	CAMP SUPPLY 2/ IN-SMRW	CAMP SUPPLY 2/ OUT-SMRW	TOTAL EXPORT	TOTAL* IN-SMRW	RECHARGED IN-SMR 3/	IMPORT 4/ RECHARGED IN SMRW	TOTAL RECHARGED IN SMRW
1991												
OCT	100	256	356	38	61	113	144	204	151	78	77	155
NOV	73	253	326	29	45	111	141	186	140	65	76	141
DEC	20	276	296	7	12	122	155	167	129	59	105	164
1992												
JAN	15	276	291	6	10	121	154	164	127	67	118	185
FEB	14	247	261	6	9	108	138	147	114	78	128	206
MAR	13	204	217	5	8	90	114	122	95	83	140	223
APR	25	116	141	10	15	51	65	80	61	78	125	203
MAY	91	269	360	36	55	118	151	206	154	74	126	200
JUNE	77	327	404	30	48	144	183	231	174	87	113	200
JULY	123	322	445	48	75	142	180	255	190	84	179	263
AUG	176	335	511	68	107	148	188	295	216	86	162	248
SEPT	171	373	544	67	104	164	209	313	231	94	199	293
TOTAL	898	3,254	4,152	350	548	1,432	1,822	2,370	1,782	933	1,548	2,481

* Assumes no losses

1/ Agricultural water use is divided with 39% used inside the SMRW and 61% used outside

2/ Camp Supply water use is divided with 44% used inside the SMRW and 56% used outside

3/ Discharge from Plant Nos. 3 plus 8 plus 29.17 acre feet per month from Plant No. 13

4/ Discharge from Plant No. 1 plus excess of Plant No. 13 over 29.17 acre feet per month

TABLE A-7

SANTA MARGARITA RIVER WATERSHED
MISCELLANEOUS WATER PRODUCTION AND IMPORTS

1991-1992
Quantities in Acre Feet

MONTH YEAR	WESTERN MWD IMPORTS TO IMPROVEMENT DISTRICT A	PRODUCTION			
		ANZA MUTUAL WATER CO.	THOUSAND TRAILS	BUTTERFIELD OAKS MOBILE HOME PARK	LAKE RIVERSIDE ESTATES
1991					
OCT	1.90	2.97	4.74	0.30 E	32.72
NOV	1.40	1.38	4.25	0.30 E	15.27
DEC	1.10	1.09	3.03	0.30 E	14.47
1992					
JAN	1.10	0.92	2.10	0.30 E	0.93
FEB	0.90	0.93	2.02	0.30 E	8.21
MAR	0.90	1.17	1.62	0.30 E	1.08
APR	1.40	2.36	2.85	0.30 E	0.06
MAY	1.80	2.82	4.90	0.48 E	7.65
JUNE	3.00	5.05	3.64	0.53 E	39.53
JULY	3.00	2.63	4.65	0.63 E	41.05
AUG	4.70	5.75	4.84	0.70 E	80.46
SEPT	3.40	4.14	4.22	0.30 E	37.61
SUBTOTAL				4.74	
				7.50 *	

TOTAL	24.60	31.21	42.86	12.24	279.04

E indicates an estimate

* Estimated non-metered lawn watering

SANTA MARGARITA RIVER WATERSHED
ANNUAL WATERMASTER REPORT
WATER YEAR 1991-92

APPENDIX B
WATER PRODUCTION AND USE
WATER YEAR 1965-66 TO WATER YEAR 1991-92

JULY 1993

TABLE B-1

SANTA MARGARITA RIVER WATERSHED
MONTHLY WATER PRODUCTION AND USE

EASTERN MUNICIPAL WATER DISTRICT
Quantities in Acre Feet

	PRODUCTION					USE						RECLAIMED WASTE WATER				
WATER YEAR	WELLS	IMPORTED 1/	EXPORTED FROM SMRW	NET IMPORT	TOTAL	AG 2/	COMM	DOM 3/	TOTAL	LOSS	TOTAL USE+LOSS	REUSE IN SMRW	EXPORT	DISCHARGED TO RIVER	RECHARGED	TOTAL
1966	0	1,604	0	0	1,604	1,520	0	4	1,524	80	1,604	0	0		100	100
1967	0	1,630	0	0	1,630	1,544	0	4	1,548	82	1,630	0	0		100	100
1968	0	1,464	0	0	1,464	1,386	0	5	1,391	73	1,464	0	0		100	100
1969	0	1,741	0	0	1,741	1,648	0	6	1,654	87	1,741	0	0		100	100
1970	0	1,417	0	0	1,417	1,340	0	7	1,346	71	1,417	0	0		101	101
1971	0	1,383	0	0	1,383	1,306	0	8	1,314	69	1,383	0	0		119	119
1972	0	1,470	0	0	1,470	1,388	0	8	1,396	74	1,470	0	0		242	242
1973	0	1,533	0	0	1,533	1,447	0	10	1,456	77	1,533	0	0		217	217
1974	0	1,601	0	0	1,601	1,511	0	10	1,521	80	1,601	0	0		193	193
1975	0	1,969	0	0	1,969	1,859	0	11	1,871	98	1,969	0	0		253	253
1976	145	2,493	0	0	2,638	2,356	0	150	2,506	132	2,638	134	0		155	289
1977	431	2,947	0	0	3,378	2,723	64	423	3,209	169	3,378	244	0		70	314
1978	375	2,551	0	0	2,926	2,409	0	371	2,780	146	2,926	300	0		75	375
1979	289	1,894	0	0	2,183	1,784	0	290	2,074	109	2,183	350	0		147	497
1980	281	1,192	0	0	1,473	1,116	0	283	1,399	74	1,473	375	0		220	595
1981	282	716	0	0	998	663	0	285	948	50	998	375	0		304	679
1982	321	1,112	0	0	1,433	1,038	0	323	1,361	72	1,433	375	0		386	761
1983	106	1,211	0	0	1,317	1,131	0	120	1,251	66	1,317	375	0		466	841
1984	236	699	0	0	935	644	0	244	888	47	935	400	0		525	925
1985	314	679	0	0	993	624	0	319	943	50	993	450	0		565	1,015
1986	229	760	0	0	989	700	0	239	940	49	989	600	0		509	1,109
1987	89	1,155	0	0	1,244	638	0	543	1,182	62	1,244	650	0		554	1,204
1988	4	2,047	0	0	2,051	524	0	1,424	1,948	103	2,051	650	0		650	1,300
1989	685	3,746	0	0	4,431	1,146	0	3,064	4,209	222	4,431	1,058	0		1,636	2,694
1990 *	492	8,578	2,977	5,601	6,093	978	0	4,810	5,788	305	6,093	1,567	0		2,160	3,727
1991 *	456	16,621	7,142	9,479	9,935	851	0	8,587	9,438	497	9,935	1,282	0		2,272	3,554
1992	527	13,486	4,893	8,593	9,120	29	0	8,635	8,664	456	9,120	1,323	0	245	2,385	3,953

* Revised data for this year

1/ Does not include deliveries to Rancho California Water District or Elsinore Valley Municipal Water District

2/ Figures are 95% of water pumped and imported to allow for 5% loss

3/ Figures are 95% of water pumped and imported to allow for 5% loss

TABLE B-2

SANTA MARGARITA RIVER WATERSHED
ANNUAL WATER PRODUCTION AND USE

FALLBROOK PUBLIC UTILITY DISTRICT
Quantities in Acre Feet

	PRODUCTION							USE				
WATER YEAR	LOCAL	TOTAL DISTRICT IMPORT	DELUZ AREA IMPORT	FALLBROOK AREA IMPORT	SMRW IMPORT	TOTAL SMRW IMPORT	TOTAL PRODUCTION	AG	COMM/DOM	TOTAL DELIVERED	LOSS*	TOTAL USE IN SMRW
1966	176	11,169	0	11,169	3,351		3,404	2,735	328	3,063	341	3,404
1967	16	9,508	0	9,508	2,852		2,857	2,253	319	2,572	285	2,857
1968	13	11,411	0	11,411	3,423		3,427	2,554	531	3,085	342	3,427
1969	178	9,458	0	9,458	2,837		2,891	1,787	814	2,601	290	2,891
1970	305	11,794	0	11,794	3,538		3,630	2,649	617	3,266	364	3,630
1971	7	11,350	0	11,350	3,405		3,407	2,386	681	3,067	340	3,407
1972	0	13,054	0	13,054	3,916		3,916	2,749	775	3,524	392	3,916
1973	0	10,610	38	10,572	3,210		3,210	2,156	732	2,888	322	3,210
1974	0	12,911	134	12,777	3,967		3,967	2,703	868	3,571	396	3,967
1975	0	11,492	213	11,279	3,597		3,597	2,420	816	3,236	361	3,597
1976	0	13,147	431	12,716	4,627		4,627	3,200	965	4,165	462	4,627
1977	20	13,435	587	12,848	5,212		5,232	3,536	1,174	4,710	522	5,232
1978	97	12,626	651	11,975	5,202		5,299	3,504	1,265	4,769	530	5,299
1979	187	12,865	961	11,904	5,723		5,910	3,820	1,498	5,318	592	5,910
1980	192	13,602	1,191	12,411	6,404		6,596	4,258	1,678	5,936	660	6,596
1981	87	16,878	1,994	14,884	8,543		8,630	5,688	2,144	7,832	798	8,630
1982	0	13,270	1,805	11,465	7,079		7,079	4,614	1,862	6,476	603	7,079
1983	0	12,298	1,969	10,329	6,720		6,720	4,320	1,871	6,191	529	6,720
1984	0	15,429	2,609	12,820	8,506		8,506	5,814	2,077	7,891	615	8,506
1985	0	14,256	2,358	11,898	7,831		7,831	5,187	2,135	7,322	509	7,831
1986	0	15,383	2,794	12,589	8,585		8,585	5,698	2,319	8,017	568	8,585
1987	0	15,313	2,986	12,327	8,656		8,656	5,793	2,281	8,074	582	8,656
1988	28	14,460	2,559	11,901	8,033		8,061	5,181	2,348	7,529	532	8,061
1989	94	16,179	3,007	13,172	9,066		9,160	5,620	2,706	8,326	834	9,160
1990	15	17,568	3,745	13,823	10,103		10,118	6,275	2,878	9,153	965	10,118
1991	46	13,939	2,871	11,068	7,962		8,008	5,146	2,314	7,460	548	8,008
1992	45	13,698	2,950	10,748	4,943	7,893	7,938	5,285	2,201	7,486	452	7,938

*Loss = Total production less total use
(Neglects change in Storage at Red Mtn After 1985)

This table has combined the historic production of DeLuz Heights Municipal Water District with Fallbrook Public Utility District for years prior to 1991

TABLE B-3

SANTA MARGARITA RIVER WATERSHED
ANNUAL WASTEWATER PRODUCTION AND DISPOSITION

FALLBROOK SANITARY DISTRICT
Quantities in Acre Feet

WATER YEAR	TOTAL WASTEWATER PRODUCTION	% WASTEWATER FROM SMRW	WASTEWATER FROM SMRW	WASTEWATER EXPORTED FROM SMRW	% WASTEWATER FROM SLR* WATERSHED	WASTEWATER IMPORTED FROM SLR* WATERSHED
1966	395	81	320	0	19	75
1967	460	80	368	0	20	92
1968	524	80	419	0	20	105
1969	588	79	465	0	21	123
1970	652	78	509	0	22	143
1971	717	78	559	0	22	158
1972	782	77	602	0	23	180
1973	847	76	644	0	24	203
1974	912	75	684	0	25	228
1975	976	75	732	0	25	244
1976	1,040	74	770	0	26	270
1977	1,105	73	807	0	27	298
1978	1,170	72	842	0	28	328
1979	1,234	72	888	0	28	346
1980	1,298	71	922	0	29	376
1981	1,363	70	954	0	30	409
1982	1,428	69	985	0	31	443
1983	1,492	69	1,029	1,029	0	0
1984	1,556	68	1,058	1,058	0	0
1985	1,621	67	1,086	1,086	0	0
1986	1,685	66	1,112	1,112	0	0
1987	1,750	66	1,155	1,155	0	0
1988	1,815	65	1,180	1,180	0	0
1989	1,881	64	1,204	1,204	0	0
1990	1,952	66	1,298	1,298	0	0
1991	1,622	60	973	973	0	0
1992	1,730	63	1,090	1,090	0	0

NOTE: Measured quantities available for Total Wastewater in Water Year 1969 and July 1989
All other quantities are estimated.
Prior to 1983, Wastewater was discharged into Fallbrook Creek.
After 1983, Wastewater is discharged into an ocean outfall

* - San Luis Rey

TABLE B-4

SANTA MARGARITA RIVER WATERSHED
ANNUAL WATER PRODUCTION AND USE

MURRIETA COUNTY WATER DISTRICT
Quantities in Acre Feet

	PRODUCTION	USE					
WATER YEAR	WELLS	AG	COMM	DOM	TOTAL DELIVERED	LOSS*	TOTAL USE
1966	41	0	0	37	37	4	41
1967	45	0	0	41	41	4	45
1968	54	0	0	49	49	5	54
1969	54	0	0	49	49	5	54
1970	73	0	0	66	66	7	73
1971	83	3	0	72	75	8	83
1972	111	10	0	91	101	10	111
1973	92	11	0	72	84	8	92
1974	132	14	0	107	120	12	132
1975	153	18	0	121	139	14	153
1976	117	22	0	84	106	11	117
1977	170	21	0	134	155	15	170
1978	169	19	0	135	154	15	169
1979	197	19	0	160	179	18	197
1980	218	20	0	178	198	20	218
1981	265	30	0	211	241	24	265
1982	230	21	0	188	209	21	230
1983	216	14	0	182	196	20	216
1984	304	26	0	250	276	28	304
1985	308	19	0	261	280	28	308
1986	305	22	0	255	277	28	305
1987	326	23	0	273	296	30	326
1988	303	13	35	262	275	28	303
1989	286	11	72	262	344	-4	340
1990	465	13	76	266	355	110	465
1991 **	459	15	88	250	353	106	459
1992	492	6	122	302	430	62	492

* Losses assumed to be 10% of use (1966 - 1988)

** Production revised from 1991 report

TABLE B-5

SANTA MARGARITA RIVER WATERSHED
ANNUAL WATER PRODUCTION AND USE

RAINBOW MUNICIPAL WATER DISTRICT
Quantities in Acre Feet

	PRODUCTION			USE				
WATER YEAR	LOCAL	IMPORT TO DISTRICT	TOTAL IN WATERSHED 1/	AG 2/	COMMERCIAL/ DOMESTIC 3/	TOTAL DELIVERIES	LOSS 4/	TOTAL USE
1966	0	14,538	1,308	1,049	140	1,189	119	1,308
1967	0	12,167	1,095	878	117	995	100	1,095
1968	0	15,301	1,377	1,104	147	1,252	125	1,377
1969	0	13,917	1,253	1,005	134	1,139	114	1,252
1970	0	18,764	1,689	1,354	181	1,535	154	1,689
1971	0	18,338	1,650	1,324	177	1,500	150	1,650
1972	0	22,633	2,037	1,634	218	1,852	185	2,037
1973	0	17,955	1,616	1,296	173	1,469	147	1,616
1974	0	22,768	2,049	1,643	219	1,863	186	2,049
1975	0	13,856	1,247	1,000	133	1,134	113	1,247
1976	0	24,878	2,239	1,796	240	2,035	204	2,239
1977	0	26,038	2,343	1,879	251	2,130	213	2,343
1978	0	24,312	2,188	1,755	234	1,989	199	2,188
1979	0	26,084	2,348	1,883	251	2,134	213	2,347
1980	0	27,660	2,489	1,997	266	2,263	226	2,489
1981	0	35,036	3,153	2,529	337	2,866	287	3,153
1982	0	27,334	2,460	1,973	263	2,236	224	2,460
1983	0	24,957	2,190	1,735	256	1,991	199	2,190
1984	0	32,526	3,068	2,483	306	2,789	279	3,068
1985	0	28,612	3,410	2,798	302	3,100	310	3,410
1986	0	29,023	2,945	2,353	324	2,677	268	2,945
1987	0	29,449	3,390	2,765	317	3,082	308	3,390
1988	0	29,070	2,985	2,372	342	2,714	271	2,985
1989	0	32,034	3,003	2,385	345	2,730	273	3,003
1990	0	34,612	3,818	3,003	468	3,471	347	3,818
1991	0	27,754	2,904	2,276	364	2,640	264	2,904
1992	0	26,056	2,277	1,877	193	2,070	207	2,277

1/ 1966 through 1982 estimated to be 9% of total district imports

2/ 1966 through 1982 estimated to be 80.2% of total deliveries to watershed

3/ 1966 through 1982 estimated to be 10.7% of total deliveries to watershed

4/ Loss = 10% of use

TABLE B-6

SANTA MARGARITA RIVER WATERSHED
ANNUAL WATER PRODUCTION AND USE

RANCHO CALIFORNIA WATER DISTRICT
Quantities in Acre Feet

	PRODUCTION							USE									RECLAIMED WASTE WATER		
	LOCAL		VAIL DIVERSIONS 1/			IMPORT	TOTAL 2/	AG	COMM	DOM	SMR RELEASE	VAIL RECHARGE *	IMPORT RECHARGE *	TOTAL USE	LOSS 3/	TOTAL	REUSE IN SMRW	EXPORT	RECHARGE
WATER YEAR	WELLS IN GWA	WELLS OUT GWA	RECHARGE	IRRIGATION	TOTAL DIVERSIONS														
1966		0	0	185 **	185	0						0	0						
1967	4,288	0	0	1,136 **	1,136	0	5,424					0	0			5,424	0	0	0
1968	5,100	0	0	398 **	398	0	5,498					0	0			5,498	0	0	0
1969	3,617	0	0	697 **	697	0	4,314					0	0			4,314	0	0	0
1970	6,721	0	0	840 **	840	0	7,561					0	0			7,561	0	0	0
1971	7,960	0	0	203 **	203	0	8,163					0	0			8,163	0	0	0
1972	8,369	0	0	1,541 **	1,541	0	9,910					0	0			9,910	0	0	0
1973	7,726	0	0	524 **	524	0	8,250					0	0			8,250	0	0	0
1974	10,163	0	0	1,066 **	1,066	0	11,229					0	0			11,229	0	0	0
1975	10,357	0	0	369 **	369	0	10,726					0	0			10,726	0	0	0
1976	11,809	0	0	50 **	50	119	11,978					0	0			11,978	0	0	0
1977	10,522	0	0	0	0	1,845	12,367					0	0			12,367	0	0	0
1978	8,930	0	0	0	0	5,774	14,704					0	0			14,704	0	0	0
1979	11,371	0	0	0	0	7,009	18,380					0	0			18,380	0	0	0
1980	12,621	0	10,944	0	10,944	10,126	33,691					10,944	0			33,691	0	0	0
1981	15,612	0	6,802	0	6,802	15,282	37,696					6,802	0			37,696	0	0	0
1982	12,631	0	6,058	0	6,058	13,378	32,067					6,058	0			32,067	0	0	0
1983	16,577	98	12,113	715	12,828	5,752	35,255					12,113	0			35,255	0	0	0
1984	25,660	4	6,612	1,144	7,756	6,716	40,136					6,612	0			40,136	0	0	0
1985	24,373	0	5,027	1,201	6,228	7,158	37,759					5,027	0			37,759	0	0	0
1986	26,997	0	8,722	1,053	9,775	11,174	47,946					8,722	0			47,946	0	0	0
1987	33,735	0	8,089	273	8,362	7,564	49,661					8,089	0			49,661	48	0	0
1988	21,367	0	4,844	0	4,844	17,854	44,065					4,844	0			44,065	82	0	0
1989	26,131	0	0	0	0	22,895	49,026	25,533	3,316	13,198	852	0	2,294	45,193	3,833	49,026	168	0	0
1990	33,241	0	0	0	0	22,030	55,271	27,643	3,940	14,916	902	0	0	47,401	7,870	55,271	133	0	0
1991	26,503	0	6,253	0	6,253	21,238	53,994	32,924 *	2,941	10,603	785	6,253	701	54,207	(213)	53,994	352	0	0
1992	29,968	0	2,244	0	2,244	16,931	49,143	30,651	2,406	9,672	683	2,244	0	45,656	3,487	49,143	374	0	0

1/ Figures from 1966 to 1972 supplied by USGS; 1972 to 1991 supplied by RCWD
2/ Total production = Wells, Total Diversions and Import
3/ Loss = Total production less total use
* - Revised from 1991 Report
** - Irrigation 1966 to 1976 by pumping from Vail Lake

TABLE B-7

SANTA MARGARITA RIVER WATERSHED
ANNUAL WATER PRODUCTION AND USE

U.S.M.C. - CAMP PENDLETON
Quantities in Acre Feet

	PRODUCTION			USE						RECLAIMED WASTE WATER		
WATER YEAR	AG	CAMP SUPPLY	TOTAL	AGRICULTURE 1/ IN-SMRW	AGRICULTURE 1/ OUT-SMRW	CAMP SUPPLY 2/ IN-SMRW	CAMP SUPPLY 2/ OUT-SMRW	TOTAL EXPORT	TOTAL* IN-SMRW	RECHARGED IN-SMR 3/	IMPORT 4/ RECHARGED IN SMRW	TOTAL RECHARGED IN SMRW
1966	1,101	4,692	5,793	429	672	2,064	2,628	3,299	2,494	919	974	1,893
1967	796	4,903	5,699	310	486	2,157	2,746	3,231	2,468	914	1,243	2,156
1968	986	5,046	6,032	385	601	2,220	2,826	3,427	2,605	866	1,214	2,080
1969	940	4,959	5,899	367	573	2,182	2,777	3,350	2,549	1,019	1,170	2,189
1970	1,106	5,633	6,739	431	675	2,479	3,154	3,829	2,910	1,032	1,113	2,145
1971	819	5,330	6,149	319	500	2,345	2,985	3,484	2,665	921	1,090	2,011
1972	817	5,323	6,140	319	498	2,342	2,981	3,479	2,661	900	1,168	2,068
1973	1,003	5,121	6,124	391	612	2,253	2,868	3,480	2,644	949	1,187	2,137
1974	909	5,202	6,111	355	554	2,289	2,913	3,468	2,643	915	1,140	2,055
1975	757	4,593	5,350	295	462	2,021	2,572	3,034	2,316	989	1,530	2,519
1976	885	5,384	6,269	345	540	2,369	3,015	3,555	2,714	949	1,497	2,447
1977	994	4,506	5,500	388	606	1,983	2,523	3,130	2,370	942	1,416	2,358
1978	176	5,177	5,353	69	107	2,278	2,899	3,006	2,347	1,164	1,283	2,446
1979	1,070	7,213	8,283	417	653	3,174	4,039	4,692	3,591	1,065	1,427	2,493
1980	835	5,495	6,330	326	509	2,418	3,077	3,587	2,743	1,101	1,405	2,506
1981	1,464	5,240	6,704	571	893	2,306	2,934	3,827	2,877	1,119	1,249	2,368
1982	1,447	5,024	6,471	564	883	2,211	2,813	3,696	2,775	982	1,273	2,254
1983	942	4,215	5,157	367	575	1,855	2,360	2,935	2,222	1,252	1,242	2,494
1984	1,078	4,501	5,579	420	658	1,980	2,521	3,178	2,401	1,323	1,120	2,443
1985	1,069	4,764	5,833	417	652	2,096	2,668	3,320	2,513	1,419	1,200	2,619
1986	953	4,807	5,760	372	581	2,115	2,692	3,273	2,487	1,259	981	2,240
1987	1,098	4,838	5,936	428	670	2,129	2,709	3,379	2,557	1,367	1,799	3,166
1988	1,223	5,944	7,168	477	746	2,616	3,329	4,075	3,093	1,523	1,872	3,396
1989	856	5,043	5,900	334	522	2,219	2,824	3,347	2,553	1,301	1,446	2,747
1990	855	4,228	5,083	333	522	1,860	2,368	2,890	2,193	1,277	1,451	2,728
1991	554	3,159	3,713	216	338	1,389	1,770	2,108	1,605	1,070	1,219	2,289
1992	898	3,254	4,152	350	548	1,432	1,822	2,370	1,782	933	1,548	2,481

* Assumes No Losses

1/ Agricultural water use is divided with 39% used inside the SMRW and 61% used outside

2/ Camp Supply water use is divided with 44% used inside the SMRW and 56% used outside

3/ Wastewater Recharged in SMR equals effluent from Plants 3, 8 and 13 (partial).

4/ Wastewater Import Recharged in SMRW equals effluent from Plant 1 plus the portion of the effluent from Plant 2 returned to the SMRW via Pond 2 plus the portion of the effluent from Plant 13 not included in 3/.
No record available for effluent from Plant 2 returned to SMRW for 1966-1974 and after 1982.
Calculation of import recharged in Santa Margarita River from Plant 2 is based on zero when no record is available.

WATERMASTER
SANTA MARGARITA RIVER WATERSHED

SANTA MARGARITA RIVER WATERSHED
ANNUAL WATERMASTER REPORT
WATER YEAR 1991-92

APPENDIX C
SUBSTANTIAL USERS OUTSIDE
ORGANIZED WATER SERVICE AREAS

JULY 1993

APPENDIX C

SANTA MARGARITA RIVER WATERSHED
SUBSTANTIAL USERS OUTSIDE ORGANIZED WATER SERVICE AREAS

CURRENT OWNER	ADDRESS	ASSESSOR PARCEL NO.	PARCEL ACREAGE	ACRES IRRIGATED 91-92	IRRIGATED CROP 91-92	WELL/DIVERSION LOCATION TWP/RNG/SEC	WELL PRODUCTION AC. FT	SURFACE DIVERSION AC. FT
AGUANGA GROUNDWATER AREA								
Clawson, Gary A.	43425 Sage Road	917-050-009	309.74	Total				
	Aguanga, Ca. 92536	917-050-007	82.19	|				
		581-070-013	43.10	of				
		581-150-013	120.56	|				
		581-150-016	25.37	|				
		581-070-014	158.08	30.00	Alfalfa	8S/1E-7N(1)	90.00	
						8S/1E-7N(2)		
						8S/1E-7Q(1)		
						8S/1E-7Q(2)		
Cottle, Thomas C.	42551 Hwy 79	583-040-028	25.52	66.00	Oats &			
	Aguanga, Ca. 92536	583-040-029	19.89	(Total)	Pasture	8S/1E-19K	79.40	
						8S/1E-19G4		
		583-040-024	23.48					
		583-040-025	23.12					
		583-040-026	23.16					
		583-040-027	22.64					
						8S/1E-29L		88.00
Strange, Owen W.	m/t P.O. Box 1974	583-040-022	97.78	Total	Oats, Alfalfa		145.50	
and Elizabeth G.	Rancho Santa Fe, Ca.	583-040-021	13.45	|	Bermuda and			
Trustees, Strange	92067	583-130-001-3	80.00	of	Permanent pasture			
Living Trust of 4-15-88	43023 Hwy 79	583-120-001-2	120.00	|				
	Aguanga, Ca. 92536	583-060-003-9	41.60	101.00				
						8S/1E-29L		162.00
Twin Creek Ranch/	c/o Jim Holden	583-120-081	17.29	0.00				
Chester M. Mason	P. O. Box 519	583-120-083	68.09	0.00		8S/1E-28N1		
Family Trust	Corona, Ca. 91718					8S/1E-28N(2)		
	44201 Hwy 79 Aguanga							
	44735 Hwy 79 Aguanga	583-120-084	179.39	0.00		8S/1E-29H		
		583-150-001	80.00	10.00	Row Crops			
		583-140-014	48.03	30.00	Row Crops	8S/1E-33F		
		583-140-015	40.00	25.00	Row Crops	8S/1E-33G1		
		583-140-016	40.00	10.00	Row Crops	8S/1E-33B	300.00	
		583-140-018	10.09	0.00				
		583-140-020	10.15	0.00				

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SANTA MARGARITA RIVER WATERSHED
SUBSTANTIAL USERS OUTSIDE ORGANIZED WATER SERVICE AREAS

CURRENT OWNER	ADDRESS	ASSESSOR PARCEL NO.	PARCEL ACREAGE	ACRES IRRIGATED 91-92	IRRIGATED CROP 91-92	WELL/DIVERSION LOCATION TWP/RNG/SEC	WELL PRODUCTION AC. FT	SURFACE DIVERSION AC. FT
AGUANGA GROUNDWATER AREA (Cont)								
Vrieling, Gerrit J. and Hetty J.	m/t 15015 Cheshire La Mirada, Ca. 90638 45203 Hwy 371 Aguanga	583-240-022	10.00	9.00	Pistachios	8S/1E-23N	9.90	
Harris, Homer M. and Dolores G.	44444 Sage Road Aguanga, Ca. 92536	581-160-014	17.73	10.00	Citrus	8S/1E-18J(2)	30.00	
						8S/1E-18J(1)	Total	
		581-160-015	7.42	10.00	Walnuts			
		581-150-009	7.00	0.00		8S/1E-18H(1)		
						8S/1E-18H(2)		
		581-180-002	20.00	0.00				
		581-180-004	20.00	0.00				
		581-180-014	20.00	0.00		8S/1E-17M		
Missionary Foundation, Inc.	m/t 5169 Harriett Cir Riverside, CA 92505	581-170-006 *	310.00	Total		8S/1E-17B	29.00	
				of		8S/1E-17H		
	44200 Sage Rd Aguanga, Ca. 92536	581-180-009 *	120.00	|				
		581-190-001 *	320.00	95.00	Potatoes			
* Land leased to Agri-Empire, Inc.		581-120-006	200.00	5.00	Citrus,	8S/1E-8K2	40.50	
				5.00	Grapes & Row			
				10.00	Deciduous			
		581-070-005	640.00	0.00		8S/1E-9Q - Diversion		42.00
TOTAL				416.00			724.30	292.00

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CURRENT OWNER	ADDRESS	ASSESSOR PARCEL NO.	PARCEL ACREAGE	ACRES IRRIGATED 91-92	IRRIGATED CROP 91-92	WELL/DIVERSION LOCATION TWP/RNG/SEC	WELL PRODUCTION AC. FT	SURFACE DIVERSION AC. FT
TEMECULA CREEK ABOVE AGUANGA GROUNDWATER AREA								
Agri-Empire, Inc.	m/t P. O. Box 490	113-090-01	377.07	Total				
	San Jacinto, Ca. 92383	113-090-03	21.46	|				
		113-090-05	541.22	|				
		113-100-01	389.81	|		9S/2E-11B - Diversion		127.00
		113-130-01	150.09	|		9S/2E-17	0.00	
		113-140-03	196.54	of		9S/2E-16N2	225.00	
				|		9S/2E-16M	114.00	
				|		9S/2E-16P1	67.00	
				|		9S/2E-16N1	61.00	
				|		9S/2E-16P2	95.00	
				|		9S/2E-16K - Diversion		40.00
		113-140-04	503.24	|				
		113-140-05	45.09	|				
		113-140-06	93.94	|				
		114-020-09	37.16	165.00	Potatoes			
		114-030-08	331.79	and		9S/2E-22	3.00	
		114-030-26	42.87	315.00	Oats			
Bergman, Arlie W.	37126 Hwy 79	113-140-01 *	358.62	Total		9S/2E-16B(1)	Total	
and Coral R.	Aguanga, Ca. 92536			of		9S/2E-16B(2)	of	
				|		9S/2E-16G	157.00	
* Land leased to		113-140-02 *	38.75	120.00	Potatoes			
Agri-Empire, Inc.		114-020-12	108.78	0.00				
		114-030-10	41.51	0.00				
		113-130-03	115.75	0.00				
		113-130-04	39.65	0.00				
Ward, Alvis A	m/t 2 Rue Biarritz	112-030-58	69.83	20.00	Pasture	9S/1E-1Q(1)	315.40	
	Newport Beach, Ca. 92660			33.00	Grain/Grass	9S/1E-1Q(2)	Domestic	
	38790 Highway 79	112-030-22	24.77	10.00	Pasture			
	Warner Springs, Ca. 92086	112-030-38	40.00	10.00	Pasture	9S/1E-12A	Domestic	
Ward, Donald F.	38790 Highway 79	112-030-67	67.41	10.00	Oats/Sudan	Used 9S/1E-1Q(1) on Alvis Ward's Property		
	Aguanga, Ca. 92536	112-030-59	160.00	1.50	Pasture	9S/1E-1M - Diversion		2.00
Templeton, Robert D.	35490 Highway 79	114-120-042	78.41	5.00	Alfalfa	9S/2E-35D1		
and Linda K.	Warner Springs, Ca. 92086					9S/2E-35D1		
		114-070-007	76.42	13.00	Pasture	9S/2E-27R1		
						9S/2E-27R2		
						9S/2E-27J		
		114-080-014	42.51	29.00	Pasture		174.60	
				13.00	Alfalfa		Total	
		114-080-013	21.30	0.00				
TOTAL				744.50			1212.00	169.00

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CURRENT OWNER	ADDRESS	ASSESSOR PARCEL NO.	PARCEL ACREAGE	ACRES IRRIGATED 91-92	IRRIGATED CROP 91-92	WELL/DIVERSION LOCATION TWP/RNG/SEC	WELL PRODUCTION AC. FT	SURFACE DIVERSION AC. FT
WILSON CREEK ABOVE AGUANGA GROUNDWATER AREA								
ANZA VALLEY								
Greenwald, Alvin G.	6010 Wilshire Blvd #500	573-180-001	156.38	156.38	Pasture/Potatoes	7S/3E-17E	625.52	
	Los Angeles, Ca. 90036	576-070-001	70.00	70.00	Pasture	7S/3E-20R	266.00	
Agri-Empire, Inc.	P.O. Box 490							
	San Jacinto, Ca. 92383							
	Section 8	573-090-005	45.17	0.00				
		573-100-002	27.79	0.00				
	Section 10	575-050-044	14.36	0.00				
		575-050-405	14.36	0.00				
		575-060-002	113.49	0.00		7S/3E-11N4	269.00	
						7S/3E-11P3	367.00	
	Section 13	575-100-037	57.80	0.00				
	Section 14	575-110-021	143.75	100.00	Potatoes	7S/3E-14D1	187.00	
		575-110-027	54.45	0.00				
		575-310-002	39.09	0.00		7S/3E-14C2	192.00	
		575-310-011	80.00	0.00				
		575-310-012	80.00	0.00				
		575-310-013	17.46	0.00				
		575-310-027	17.46	0.00				
	Section 15	575-080-014	9.92	Total				
		575-080-015	4.35	|				
		575-080-017	9.75	|				
		575-080-018	10.13	|				
		575-080-019	31.29	|				
		575-080-021	20.00	|				
		575-080-022	20.00	|				
		575-080-024	20.00	|				
		575-080-027	20.00	|				
		575-090-010	38.80	170.00	Oats			
	Section 17	573-180-011	39.74	30.00	Oats			

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CURRENT OWNER	ADDRESS	ASSESSOR PARCEL NO.	PARCEL ACREAGE	ACRES IRRIGATED 91-92	IRRIGATED CROP 91-92	WELL/DIVERSION LOCATION TWP/RNG/SEC	WELL PRODUCTION AC. FT	SURFACE DIVERSION AC. FT
WILSON CREEK ABOVE AGUANGA GROUNDWATER AREA								
ANZA VALLEY (Cont)								
Agri-Empire, Inc. (Cont)								
* Land leased from		573-200-004*	18.24	Total				
Linus W. & Helen M. Miller		573-200-005*	18.50	Grown				
P. O. Box 602		573-200-006*	18.89	On				
Anza, Ca. 92306		573-200-007*	18.88	Miller				
		573-200-008*	18.31	Lease				
		573-200-009*	36.40	Is				
		573-200-010*	18.68	125.00	Oats			
	Section 20	576-060-009	8.26	Total				
		576-060-031	16.09	of				
		576-060-033	79.45	65.00	Potatoes			
		576-060-037	41.41	|				
		576-070-003	80.00	and				
		576-070-005	116.57	180.00	Oats			
				and				
	Section 21	576-080-003	133.72	150.00	Potatoes			
* Land leased from		576-110-001*	160.00	80.00	Oats			
Louise Phebe Hamilton Tr				35.00	Potatoes			
P. O. Box 102, Anza, Ca. 92306								
		576-110-002	28.00	0.00				
		576-110-004	50.00	0.00				
		576-110-006	19.29)	Total		7S/3E-21R3	415.00	
		576-110-007	17.82)	of				
		576-110-008	17.00)	80.00	Oats			
		576-110-009	18.41)					
	Section 22	575-120-012	88.03	Total				
		575-130-003	19.55	of				
		575-130-006	40.89	70.00	Oats			
		575-130-008	18.56	Total				
		575-130-009	20.06	|				
		575-130-010	20.07	|				
		575-130-011	19.19	of				
		575-130-012	18.18	|				
		575-130-013	19.02	|				
		575-130-014	19.00	|				
		575-130-015	17.56	80.00	Potatoes			
	Section 23	575-140-019	105.04	82.00	Potatoes			

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CURRENT OWNER	ADDRESS	ASSESSOR PARCEL NO.	PARCEL ACREAGE	ACRES IRRIGATED 91-92	IRRIGATED CROP 91-92	WELL/DIVERSION LOCATION TWP/RNG/SEC	WELL PRODUCTION AC. FT	SURFACE DIVERSION AC. FT
WILSON CREEK ABOVE AGUANGA GROUNDWATER AREA								
ANZA VALLEY (Cont)								
Agri Empire, Inc. (Cont)	Section 26	576-130-002*	640.00	Total of				
Cahuilla Indian Reservation	Section 27	576-130-001*	640.00	80.00	Potatoes	7S/3E-27D1	399.00	
* Land leased to Agri-Empire, Inc.				Domestic Wells Reported by Bureau of Indian Affairs		7S/2E-14M1	Total	
						7S/2E-14M2	|	
						7S/2E-23G1	|	
						7S/2E-23H1	|	
						7S/2E-23K1	|	
						7S/2E-23Q1	|	
						7S/2E-25F1	|	
						7S/2E-26B2	|	
						7S/2E-28Q1	|	
						7S/2E-34E1	|	
						7S/2E-36A1	of	
						7S/2E-36J1	|	
						7S/3E-26A1	|	
						7S/3E-29Q1	|	
						7S/3E-30P1	|	
						7S/3E-31L2	|	
						7S/3E-31N1	|	
						7S/3E-34E1	|	
						8S/2E-4P1	|	
						8S/3E-2A1	|	
						8S/3E-2D1	|	
						8S/3E-2E1	|	
						8S/3E-2K1	|	
						8S/3E-6B1	|	
						8S/3E-6J1	17.77	
* Land leased from Paul Pablo 11-900 Ramona Rd, Banning, Ca. 92220 and Patricia Liera 183 N. Sbarif Ave, San Jacinto, Ca. 92383	Section 29	576-120-002*	640.00	125.00	Oats			
SUBTOTAL ANZA VALLEY				1,452.00			1,846.77	0.00

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CURRENT OWNER	ADDRESS	ASSESSOR PARCEL NO.	PARCEL ACREAGE	ACRES IRRIGATED 91-92	IRRIGATED CROP 91-92	WELL/DIVERSION LOCATION TWP/RNG/SEC	WELL PRODUCTION AC. FT	SURFACE DIVERSION AC. FT
WILSON CREEK ABOVE AGUANGA GROUNDWATER AREA								
LEWIS VALLEY								
Green Shell Company	39850 Sage Road Hemet, Ca. 92343	571-080-012	80.00	50.00	Olive Trees	7S/1E-20Q	55.00	
SUBTOTAL LEWIS VALLEY				50.00			55.00	0.00
TOTAL WILSON CREEK ABOVE AGUANGA GROUNDWATER AREA				1,502.00			1,901.77	0.00

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CURRENT OWNER	ADDRESS	ASSESSOR PARCEL NO.	PARCEL ACREAGE	ACRES IRRIGATED 91-92	IRRIGATED CROP 91-92	WELL/DIVERSION LOCATION TWP/RNG/SEC	WELL PRODUCTION AC. FT	SURFACE DIVERSION AC. FT
MURRIETA-TEMECULA GROUNDWATER AREA								
Poyorena, Thomas J.	m/t 22145 Grand Ave Wildomar, Ca. 92395 21853 Palomar St.	369-510-022	18.79	14.00	Pasture	6S/4W-35P	53.20	
Murrieta Stud	m/t P. O. Box 1187 Arcadia, Ca. 91006							
	42670 Juniper	906-240-006	38.18	32.00	Pasture	7S/3W-20E(1)	124.00	
	42680 Kalmia	906-250-013	53.83	50.00	Pasture	7S/3W-20E(2)	189.00	
	42660 Ivy Murrieta, Ca. 92362	909-140-001	20.00	18.00	Pasture	7S/3W-20L	69.00	
Mitchell Stock Farm, Inc.	m/t 42125 Elm St Murrieta, Ca. 92362 25849 Washington Ave Murrieta, Ca. 92362	909-100-007	40.00	11.50	Bermuda Grass	7S/3W-28R	43.70	
International Immunology	m/t 25549 Adams Ave Murrieta, Ca. 92362	909-060-020	9.33					
		909-170-010	9.55					
		909-170-011	27.77	8.00	Pasture		30.40	
Temecula Ranchos	m/t 2100 Tulare St #405	952-240-001	429.43	378.46	Citrus	8S/2W-14P1	265.00	
c/o Chester Rowell	Fresno, CA 93271	952-230-002	48.92	41.20	Citrus	8S/2W-14F	200.00	
and Roger Rowell	45055 Rio Linda Road	943-230-001	109.34	107.00	Citrus	7S/2W-26L	165.00	
	Rancho California Road	943-230-003	14.17	13.00	Citrus			
	La Serena Way	942-230-003	37.83	37.00	Citrus			
	Temecula, Ca. 92390	943-040-006	20.00	18.00	Citrus			
		943-060-001	94.49	89.00	Citrus			
		943-060-002	26.50	29.00	Citrus			
Anza Grove	c/o McMillan Farm Mgt.	942-180-002	40.28	40.00	Citrus			
	29379 Rancho Cal. Rd	942-240-003	40.83	40.00	Grapes/Citrus			
	#201	942-240-004	40.83	40.00	Citrus			
	Temecula, Ca. 92390	942-240-005	39.31	40.00	Citrus	7S/2W-26B1	180.00	
Bear Valley	c/o McMillan Farm Mgt.	904-050-080	17.51	0.00				
Vineyard Co., Ltd.	29379 Rancho Cal. Rd	904-030-021	90.12	90.00	Wine Grapes	7S/3W-18Q	189.00	
AND	#201	904-030-020	2.38	0.00				
Manley Bear Valley	Temecula, Ca. 92390	904-060-009	129.46	0.00				
Partners		904-060-008	48.00	36.00	Wine Grapes			
		904-060-010	153.47	0.00				

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MURRIETA-TEMECULA GROUNDWATER AREA (Cont)								
Nevada Beverage Co.	m/t P. O. Box 506	906-020-041	18.66	16.00	Pasture	7S/3W-7R	61.00	
	Murrieta, Ca. 92362	906-020-042	38.20	26.00	Pasture	7S/3W-18B	99.00	
	41621 Magnolia Avenue							
Boots, Clydene	P. O. Box 321	909-090-019	16.66	14.00	Pasture			
	Murrieta, CA 92362	909-100-017				7S/3W-21P	53.20	
	25555 Washington Ave							
	Murrieta, Ca. 92362							
Rancho California	3146 Quiet Hills	906-240-007	53.66	56.00	Pasture	7S/3W-19R	212.00	
Association No. 2	Escondido, Ca. 92025	904-040-071-5	3.02	Total				
	42835 Ivy St., Murrieta							
Carson, David M.	25471 Hayes Ave	909-260-036	8.87	7.00	Pasture	7S/3W-29G	39.90	
and Carol J.	Murrieta, Ca. 92362	909-260-042	4.31	3.50	Pasture			
Pechanga Indian Reservation				Domestic Wells		8S/2W-26K1	Total	
				Reported by		8S/2W-26N1	|	
				Bureau of Indian Affairs		8S/2W-27E1	|	
						8S/2W-28Q1	|	
						8S/2W-29B1	|	
						8S/2W-29F1	|	
						8S/2W-29G1	|	
						8S/2W-29J1	|	
						8S/2W-34E1	of	
						8S/2W-34F1	|	
						8S/2W-34F2	|	
						8S/2W-34F3	|	
						8S/2W-34M1	|	
						8S/2W-34N1	|	
						8S/2W-35G1	|	
						8S/2W-35G2	66.48	
TOTAL MURRIETA-TEMECULA GROUNDWATER AREA				1254.66			2039.88	0.00

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SANTA MARGARITA RIVER BELOW GORGE								
DE LUZ CREEK								
Ezor, Albert E. and Sylvia L.	m/t 31421 Cavendish Dr. Los Angeles, Ca. 90064	101-271-17	47.79	14.00 8.00	Avocados Kiwi	8S/4W-29D(1) 8S/4W-29D(2)	45.00 Total	
Woosley, Donna J.	Rt 6, Box 49-B Fallbrook, Ca. 92028 40710 DeLuz Rd, Fallbrook	101-271-13	42.28	8.00	Pasture	8S/4W-29E(1) 8S/4W-29E(2)	30.40 Total	
Durling, Robert G. and Eleanor J.	40401 DeLuz Rd Fallbrook, Ca. 92028	101-271-08	25.60	9.75 4.00	Citrus Pasture	8S/4W-29M 8S/4W-29N(1) 8S/4W-29N(2)	Total of 40.00	
Durling, Don & Margaret	41500 DeLuz Road Fallbrook, Ca. 92028	101-210-39 101-210-41 101-210-27 101-210-28-00 101-180-05-00 101-180-01	116.07 15.16 64.64 40.09 11.44 32.30	Total 35.00	Citrus and Avocados of Container Nursery Stock	8S/4W-20M(1) 8S/4W-20M(2) 8S/4W-20G	80.00 145.00 0.00 80.00 145.00	
Prestininzi, Pete and Dorothy M.	2525 E. Mission Road Fallbrook, Ca. 92028 Richmond Truck Trail and DeLuz Murrieta Road	101-220-12 101-210-53	31.63 50.44	12.00	Avocados and Citrus	8S/4W-20A(1) 8S/4W-20H(1) 8S/4W-20H(2) 8S/4W-20A(2) 8S/4W-20H(3) 8S/4W-20A - Diversion	6.00 6.00 6.00	18.00
Durling Nursery, Inc.	40401 DeLuz Rd Fallbrook, Ca. 92028	101-210-42	53.14	50.00	Avocados and Citrus Container Nursery Stock	8S/4W-20L(1) 8S/4W-20L(2) 8S/4W-20L(3) 8S/4W-20L(4) 8S/4W-20P	100.00 35.00 10.00 10.00 50.00	
Raley, Harold R and Mary E.	41321 DeLuz Creek Rd Fallbrook, Ca. 92028	101-210-11	15.23	8.50 0.50	Avocados Citrus	8S/4W-20Q(1) 8S/4W-20Q(2)	21.35 Total	
Herbel, John & Jeraldine	41257 DeLuz Rd Fallbrook, Ca. 92028	101-210-12	30.28	10.00 18.00 2.00	Avocados Citrus Row crops	8S/4W-20Q(1) 8S/4W-20Q(2) 8S/4W-20Q(3)	Total of 66.20	

 Well number in parentheses designated by Watermaster

APPENDIX C

SANTA MARGARITA RIVER WATERSHED
SUBSTANTIAL USERS OUTSIDE ORGANIZED WATER SERVICE AREAS

CURRENT OWNER	ADDRESS	ASSESSOR PARCEL NO.	PARCEL ACREAGE	ACRES IRRIGATED 91-92	IRRIGATED CROP 91-92	WELL/DIVERSION LOCATION TWP/RNG/SEC	WELL PRODUCTION AC. FT	SURFACE DIVERSION AC. FT
SANTA MARGARITA RIVER BELOW GORGE								
DE LUZ CREEK (Cont)								
Wagner, Wilbur A.	m/t 14539 San Dieguito	101-210-23	17.19	11.00	Avocados			
and Shirley A.	La Mirada, Ca. 90638	101-210-22	4.55	6.50	Citrus/Persimmon	8S/4W-20P(1)	0.00	
	DeLuz Road, Fallbrook			Total		8S/4W-20P(2)	0.00	
						8S/4W-20P(3)	35.00	
Chambers, Robert R.	m/t 11439 Laurelcrest Dr.	101-571-03	41.72	13.00	Flowers	8S/4W-28A	1.00	
and Clytia M.	Studio City, Ca. 91604					8S/4W-28A - Diversion		14.00
	40888 DeLuz-Murrieta Rd.							
Welburn, Douglas J.	Rt. 6, Box 77	101-571-08	26.98	12.50	Row Crops	8S/4W-28G1	50.00	
and Sue	Fallbrook, Ca. 92028							
	40751 DeLuz Murrieta Rd							
Nezami, Mohammed	2193 Calle Rociada	101-312-02	58.17	35.00	Flowers	8S/4W-31K(1)	Total	
Bluebird Ranch	Fallbrook, Ca. 92028			8.00	Avocados	8S/4W-31K(2)	of	
						8S/4W-31K(3)		
		101-312-01	82.29	20.00	Flowers	8S/4W-31L	109.80	
						8S/4W-31L - Diversion		21.30
TOTAL DELUZ CREEK				285.75			1071.75	53.30
SANDIA CREEK								
Cal June, Inc.	P. O. Box 9551	101-360-40	126.32	50.00	Avocados	8S/4W-25P(1)	Total	
	No. Hollywood, CA 91609			75.00	Fruit	8S/4W-25P(2)	Well	
	40376 Sandia Creek			1.00	Citrus	8S/4W-25P(3)	Production	
	Fallbrook, Ca. 92028					8S/4W-25P(4)	of	
						8S/4W-25P(5)	100.00	
						8S/4W-25P - Diversion		100.00
TOTAL SANDIA CREEK				126.00			100.00	100.00

 Well number in parentheses designated by Watermaster

APPENDIX C

SANTA MARGARITA RIVER WATERSHED
SUBSTANTIAL USERS OUTSIDE ORGANIZED WATER SERVICE AREAS

CURRENT OWNER	ADDRESS	ASSESSOR PARCEL NO.	PARCEL ACREAGE	ACRES IRRIGATED 91-92	IRRIGATED CROP 91-92	WELL/DIVERSION LOCATION TWP/RNG/SEC	WELL PRODUCTION AC. FT	SURFACE DIVERSION AC. FT
SANTA MARGARITA RIVER								
Henderson, Leland	m/t Margarita Land & Development PO Box 584 Fallbrook, Ca. 92088 47981 & 47991 Willow Glen Rd Temecula, Ca. 92390	918-040-10 918-060-17	200.00 40.00	20.00	Citrus and Total Avocados	8S/3W-33Q1 8S/3W-33Q(2) 8S/3W-33Q - Diversion	55.65 3.80	56.41
TOTAL SANTA MARGARITA RIVER				**20.00**			**59.45**	**56.41**
LOWER MURRIETA								
Duncan, Frank and Marjorie R. (Sage Ranch Nursery)	m/t 1850 N. Whitley #1219 Hollywood, Ca. 90028 42525 E. Benton Rd.	571-020-046 571-020-047 571-020-048 571-020-049 571-520-005 571-520-007 571-520-008 571-520-009 470-210-007 470-220-004	122.59 40.80 36.75 148.86 34.31 109.50 99.43 80.23 53.62 121.00	Total of 845.00	Olive trees	7S/3E-7E - Diversion		30.00
Zamora, John and Linda	39800 E. Benton Rd. Temecula, Ca. 92390	915-120-18	37.74	10.00	Pasture	7S/1W-10R(1) 7S/1W-10R(2) 7S/1W-10R(3) 7S/1W-10R(4) 7S/1W-10R(5)	Total of 38.00 Domestic	
TOTAL LOWER MURRIETA				**855.00**			**38.00**	**30.00**
GRAND TOTAL				**5,203.91**			**7,147.15**	**700.71**

 Well number in parentheses designated by Watermaster

WATERMASTER
SANTA MARGARITA RIVER WATERSHED

SANTA MARGARITA RIVER WATERSHED
ANNUAL WATERMASTER REPORT
WATER YEAR 1991-92

APPENDIX D
WATER QUALITY DATA

JULY 1993

TABLE D-1

SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

SURFACE STREAMS SAMPLED BY CAMP PENDLETON

Site Location	Date Tested	Specific Conductance umhos	Total Dissolved Solids (mg/l)	Chemical Constituents - mg/l							
				Ca	Mg	Na	K	Cl	SO4	HCO3	NO3
Naval Weapons	05/89	1601	1112	111	73.3	128	---	203	317	229	13.6
Station at	06/89	2500	1120	114	72.6	145	---	196	301	235	10.7
Fallbrook Creek	07/89	1629	1160	127	71.7	128	---	197	324	241	6.2
	01/90	1630	1140	121	74.5	137	3.0	212	384	260	1.4
	04/90	1110	812	83.1	45.5	94.7	4.9	125	255	152	4.2
	05/90	1680	1160	110	71.9	138	2.3	210	358	262	1.0
	11/90	1750	1160	116	0.19	152	---	213	314	248	3
	06/91	1760	1180	110	78.4	146	---	193	345	235	2.1
	06/92	1700	1240	117	73	151	---	209	342	329	7.97
Fallbrook PUD	05/89	1259	838	98.0	41.6	106	---	141	198	197	29.3
Sump at Santa	06/89	1298	810	92.5	40.7	119	---	150	189	189	23.8
Margarita River	07/89	1252	790	98.1	40.1	100	---	143	191	202	11.5
	01/90	1440	940	114	55.5	105	11.8	191	301	186	12.1
	04/90	1460	946	122	57.7	112	11.8	180	301	193	10.7
	05/90	1340	906	106	45.3	107	9.1	165	254	202	6.6
	11/90	1390	834	97	46.8	111	---	213	314	248	3
	06/91	1530	984	104	55	113	---	193	345	235	2.1
	06/92	1300	878	84.3	38.4	113	---	154	233	233	8.54

TABLE D-1 (cont'd)

SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

SURFACE STREAMS SAMPLED BY CAMP PENDLETON

Site Location	Date Tested	Specific Conductance umhos	Total Dissolved Solids (mg/l)	Chemical Constituents - mg/l							
				Ca	Mg	Na	K	Cl	SO4	HCO3	NO3
Sandia Creek	05/89	1260	800	107	53.1	80	---	174	168	176	17
Near Santa	06/89	1678	798	106	52.6	84.7	---	195	167	183	7.86
Margarita	07/89	1241	816	125	54.4	75.8	---	196	170	173	4.4
	01/90	1220	760	104	52.6	77.3	2.6	183	186	174	3.0
	04/90	1240	830	104	54.0	83.2	2.6	195	183	181	2.8
	05/90	1260	830	101	50.7	79.5	2.2	205	203	183	1.2
	11/90	1360	860	105	54.8	90	---	222	162	167	5
	06/91	1510	1030	116	62.3	92	---	245	195	177	5
	06/92	1420	940	107	51.9	90.7	---	236	214	233	16.4
DeLuz Creek	05/89	718	408	24.8	6.94	111	---	81.3	72	140	7.3
At McDowell	06/89	1260	720	96.4	42.6	92.8	---	188	117	202	<0.4
	07/89	1097	675	93.5	37.0	78.6	---	170	102	201	<0.4
	01/90	1250	776	108	52.4	84	1.7	200	185	214	0.45
	04/90	1190	802	103	49.1	89.4	2.0	180	158	196	1.1
	05/90	1240	820	101	48.3	83.7	1.5	195	170	204	8.8
	11/90	1450	876	92.8	55.8	108	---	254	162	174	1
	06/91	1380	866	107	57.7	93	---	214	170	200	1.7
	06/92	1230	764	87	39.5	78.7	---	197	157	307	2.21
Murrieta Creek	05/89	1130	708	94.7	40.30	80.7	---	166	125	197	<0.40
At Temecula	06/89	650	354	14.3	4.40	108	---	69.8	61.4	117	2.97
	07/89	654	375	19.2	4.87	105	---	69.2	66	139	1.30
	01/90	810	444	53.7	16.7	97.3	2.7	84.3	93.6	200	<0.05
	04/90	850	530	59.3	17.2	97.6	2.8	90	34.3	226	<0.05
	05/90	850	544	46.3	13.8	110	2.8	95	117	169	0.38
	11/90	722	404	43.3	14.2	86.1	---	78	53.5	174	1.2
	06/91	904	514	60.7	17.1	94.7	---	94.8	88.7	188	1
	06/92	1110	646	69.2	21.2	132	---	138	101	329	0.88

TABLE D-1 (cont'd)

SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

SURFACE STREAMS SAMPLED BY CAMP PENDLETON

Site Location	Date Tested	Specific Conductance umhos	Total Dissolved Solids (mg/l)	Chemical Constituents - mg/l							
				Ca	Mg	Na	K	Cl	SO4	HCO3	NO3
Temecula Creek	05/89	1540	1052	117	49.4	103	---	168	278	116	1.23 *
At Interstate 15	06/89	1148	674	110	24.9	92.4	---	106	110	281	2.79
	07/89	1086	680	131	27.4	84.1	---	105	108	281	0.04
	01/90	1090	670	116	25.4	89.1	2.2	118	150	297	0.59
	04/90	1150	784	123	26.2	98.3	3.0	105	127	308	0.81
	05/90	1150	772	121	26.1	94.0	2.2	110	164	310	0.33
	11/90	1160	706	111	26.1	94	---	109	145	280	0.93
	06/91	1190	732	116	25	95.7	---	98.9	116	272	2.1
	06/92	1190	750	113	23.9	97.3	---	105	170	348	2.21
Santa Margarita	05/89	1035	680	101	22.3	77.9	---	105.0	128	278	8.5
River at	06/89	749	426	34.9	9.56	102.0	---	78.9	73.6	145	2.53
Temecula Gorge	07/89	798	456	50.6	11.4	95.7	---	79.8	76.4	181	0.4
	01/90	1080	664	113	25.2	90.5	2.4	114	150	295	0.55
	04/90	1130	748	119	25.8	98.5	2.9	1115	113	296	0.78
	05/90	1050	682	83.4	20.9	110	3.0	100	208	210	0.47
	11/90	1090	682	94.6	23	89.5	---	105	107	258	0.85
	06/91	1030	550	66	16.2	99.6	---	97.9	73.3	203	<1
	06/92	967	596	71.3	16.5	103	---	98.5	139	244	8.86

* Lab reported 123

TABLE D-1 (cont'd)

SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

SURFACE STREAMS SAMPLED BY CAMP PENDLETON

Site Location	Date Tested	Specific Conductance umhos	Total Dissolved Solids (mg/l)	Chemical Constituents - mg/l							
				Ca	Mg	Na	K	Cl	SO4	HCO3	NO3
Rainbow Creek at Willow Glen Road	05/89	773	444	40.2	11.4	89.1	---	82.5	76.9	163	8.9
	06/89	1610	1060	177	52.6	132	---	162	323	100	96.6
	07/89	1508	1141	135	53.4	111	---	155	309	100	105
	01/90	1520	976	117	54.8	109	28.6	116	670	106	40
	04/90	1530	1040	111	51.11	118	42.4	160	376	80	36.3
	05/90	1450	1030	106	47.2	116	24.5	155	333	124	21.4
	11/90	1630	854	111	53.9	119	---	* 178	337	151	25.7
	06/91	1440	1250	131	67.3	135	---	* 210	491	168	9.7
	06/92	1650	1220	129	59.2	131	---	201	381	233	13.7
Santa Margarita River Upstream of Rainbow Creek	06/91	1220	766	77.4	35.1	106	---	180	189	165	0.07
	09/91	926	552	54.5	19.6	117	---	121	90	42.5	0.08
	06/92	1100	726	66.9	28.7	115	---	150	187	212	0.44
DeLuz Road at Santa Margarita River	06/91	1510	992	114	63.6	116	---	202	223	188	2.8
	06/92	1380	** 1880	98.1	45.2	106	---	200	234	223	8.86
Rancho California 3cfs Meter	06/91	640	378	15.7	4.7	104	---	70.6	45.3	---	0.68
	08/91	742	434	33.6	7.96	104	---	81.8	76.1	148	8.86
	06/92	905	550	58.2	13	105	---	88.300	144	195	4.87

* Revised from 1990-91

** Laboratory results believed to be in error

TABLE D-2

SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

SURFACE STREAMS SAMPLED BY RANCHO CALIFORNIA WATER DISTRICT

Site Location	Date Tested	Specific Conductance umhos	Total Dissolved Solids (mg/l)	Chemical Constituents - mg/l							
				Ca	Mg	Na	K	Cl	SO4	HCO3	NO3
Temecula Creek	03/13/87	890	575	---	---	76	---	68	---	---	<.1 @N
At Hwy 79	05/08/87	1180	750	---	---	115	---	78	---	---	<.1 @N
	09/04/87	1350	895	---	---	134	---	110	---	---	.2 @N
	01/20/88	660	370	---	---	55	---	43	---	---	.2 @N
DeLuz Creek	08/21/86	1220	760	*94	44	92	2	193	165	204	17
At Dios Rio Road	11/25/86	1200	740	92	42	92	4	175	195	146	39
	03/13/87	1090	670	---	---	85	---	165	---	---	4 @N
	05/08/87	1130	700	---	---	94	---	200	---	---	9 @N
	09/04/87	1110	755	---	---	92	---	95	---	---	3.4 @R
	01/20/88	1250	775	---	---	100	---	142	---	---	11.7 @N
Sandia Creek at	08/21/86	1070	680	88	42	78	2	174	140	198	15
Buenos Campos Road	11/25/86	1130	685	92	44	73	2	165	150	207	16
	03/13/87	1130	660	---	---	73	---	160	---	---	2.7 @N
	05/08/87	1130	725	---	---	80	---	182	---	---	14 @N
	09/04/87	1110	690	---	---	75	---	90	---	---	3.4 @N
	01/20/88	1160	720	---	---	99	---	132	---	---	5.6 @N
Murrieta Creek	08/21/86	850	510	66	15	96	4	96	135	372	10
At Gaging Station	11/25/86	890	520	62	18	103	3	109	81	259	3
	04/02/87	870	515	---	---	99	---	104	---	---	.2 @N
	05/08/87	850	790	---	---	102	---	9	---	---	.2 @N
	09/04/87	730	445	---	---	84	---	45	---	---	.7 @N
	01/20/88	830	525	---	---	85	---	109	---	---	.7 @N
Santa Margarita	08/21/86	880	540	70	15	96	2	110	115	198	5
River at	11/25/86	1050	600	110	24	85	3	103	105	311	4
Gaging Station	04/02/87	1050	660	---	---	87	---	107	---	---	.7 @N
	05/08/87	1050	630	---	---	93	---	98	---	---	1.1 @R
	09/04/87	1000	640	---	---	88	---	100	---	---	<1 @N
	01/20/88	790	400	---	---	84	---	89	---	---	.7 @N

* - Laboratory reported as 940

TABLE D-3

SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

WELLS IN MURRIETA COUNTY WATER DISTRICT

Site Location	Date Tested	Specific Conductance umhos	Total Dissolved Solids (mg/l)	Chemical Constituents - mg/l							
				Ca	Mg	Na	K	Cl	SO4	HCO3	NO3
Holiday Well	06/16/89	1300	775	122	39	100	2	178	66	372	40
7S/3W-20C09	10/18/91	---	---	---	---	---	---	---	---	---	25
	11/15/91	---	---	---	---	---	---	---	---	---	26
	12/13/91	---	---	---	---	---	---	---	---	---	28
	01/10/92	---	---	---	---	---	---	---	---	---	27
	02/07/92	---	---	---	---	---	---	---	---	---	27
	05/01/92	---	---	---	---	---	---	---	---	---	32
	05/29/92	---	---	---	---	---	---	---	---	---	28
	08/21/92	---	---	---	---	---	---	---	---	---	27
House Well	06/16/89	660	345	34	3	95	2	87	60	153	<1
7S/3W-20G06	02/27/91	770	---	---	---	---	---	110	65	168	<1
	03/01/91	730	---	---	---	---	---	110	---	---	<1
	03/08/91	680	420	42	5	90	2	110	68	122	<1
	05/10/91	750	---	---	---	---	---	---	---	---	<1
	10/11/91	---	---	---	---	---	---	---	---	---	<1
	11/08/91	---	---	---	---	---	---	---	---	---	<1
	05/22/92	---	---	---	---	---	---	---	---	---	<1
	08/14/92	---	---	---	---	---	---	---	---	---	<1
Lynch Well	06/16/89	760	410	70	17	55	1	86	30	262	8
7S/3W-17R02											
North Well	06/16/89	730	390	40	7	98	2	98	45	201	<1
7S/3W-18J02	10/25/91	---	---	---	---	---	---	---	---	---	<1
	11/22/91	---	---	---	---	---	---	---	---	---	<1
	05/08/92	---	---	---	---	---	---	---	---	---	<1
	08/28/92	---	---	---	---	---	---	---	---	---	<1
South Well	09/07/90	690	405	62	17	68	2	83	56	229	4
7S/3W-17N	10/04/91	---	---	---	---	---	---	---	---	---	2
	11/01/91	---	---	---	---	---	---	---	---	---	3
	11/26/91	---	---	---	---	---	---	---	---	---	2
	05/15/92	---	---	---	---	---	---	---	---	---	<1
Alson Well	06/06/90	1520	915	138	46	110	1	250	81	433	31
7S/3W-7M											
Morris Well	09/07/90	530	280	38	7	68	3	50	49	168	3
7S/3W-19R											

TABLE D-4

SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

WELLS IN RANCHO CALIFORNIA WATER DISTRICT

Site Location	Date Tested	Specific Conductance umhos	Total Dissolved Solids (mg/l)	Chemical Constituents - mg/l							
				Ca	Mg	Na	K	Cl	SO4	HCO3	NO3
No. 101	06/01/88	810	495	76	15	79	8	116	16	314	---
7S/3W-34G1	08/05/88	---	---	---	---	---	---	---	---	---	<1
	05/23/90	630	365	30	6	91	2	101	35	107	3
No. 102	01/04/89	695	370	9	2	134	1	101	25	195	<1
8S/3W-2Q1	01/15/92	930	615	38	4	160	3	160	55	250	<1
No. 105	07/06/89	500	280	30	6	66	2	71	22	134	14
7S/3W-25M1											
No. 106	06/29/88	920	485	38	5	143	3	182	66	70	16
7S/3W-26R1	05/13/92	880	515	35	4	142	2	180	72	110	17
No. 107	04/11/88	490	365	19	4	73	2	69	22	116	15
7S/3W-26J1	05/29/91	950	535	63	15	104	3	130	120	171	11
No. 108	05/25/88	780	455	51	11	96	2	120	68	153	14
7S/3W-25B1	05/29/91	930	500	59	14	104	3	130	110	153	10
No. 109	06/01/88	1400	920	136	35	120	4	100	300	296	---
8S/2W-17J1	08/05/88	---	---	---	---	---	---	---	---	---	10
	06/12/91	1330	800	110	26	120	5	120	270	275	9
No. 110	03/31/88	1100	630	70	23	132	6	115	163	268	3
8S/1W-06K1											
No. 113	03/28/88	700	400	41	12	87	2	11	20	192	18
7S/2W-25H01	03/21/91	570	290	21	5	79	2	88	17	119	11
No. 118	08/08/90	715	480	14	1	162	1	120	79	101	1
8S/3W-11B	09/26/90	---	---	---	---	---	---	---	---	---	1
No. 120	06/20/90	570	330	6	1	116	1	82	31	113	11
8S/2W-17G											
No. 121	10/27/89	900	475	63	14	99	2	109	28	290	<1
7S/3W-34J	05/19/92	1000	560	72	17	120	3	170	56	270	<1

TABLE D-4 (cont'd)

SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

WELLS IN RANCHO CALIFORNIA WATER DISTRICT

Site Location	Date Tested	Specific Conductance umhos	Total Dissolved Solids (mg/l)	Chemical Constituents - mg/l							
				Ca	Mg	Na	K	Cl	SO4	HCO3	NO3
No. 123 8S/1W-7B	06/06/90	1100	690	69	27	132	6	130	170	281	4
No. 124 8S/2W-11R1	06/20/90	660	380	38	4	92	3	97	48	153	13
No. 125 8S/2W-12H	06/20/90	740	425	17	5	132	3	99	54	186	4
No. 126	05/04/88	480	290	4	<1	106	<1	53	14	64	<1
8S/2W-15H	07/06/89	500	270	2	1	108	<1	55	11	98	<1
No. 128	07/06/89	400	230	27	3	54	2	59	7	101	25
7/3W-36M	07/08/92	390	230	21	2	59	2	55	1	110	24
No. 129	11/29/89	430	260	16	3	66	2	71	16	92	9
7S/2W-20L	08/08/90	440	280	20	5	64	2	72	14	119	10
	04/01/92	---	---	---	---	---	---	---	---	---	12
No. 130	02/17/88	650	365	16	1	132	1	69	64	0	4
8S/2W-11R	02/14/91	640	365	4	<1	132	1	68	56	122	---
	04/24/91	---	---	---	---	---	---	---	---	---	3
No. 131	03/10/88	530	270	4	<1	108	1	57	52	31	1
8S/1W-12J	03/21/91	630	335	7	<1	120	1	74	65	98	3
No. 132	04/18/88	1000	620	94	13	103	6	109	153	235	2
8S/1W-07D	05/08/91	920	590	64	19	110	5	100	160	201	<1
No. 133 8S/1W-7C	03/28/90	970	605	50	20	112	5	120	131	235	3
No. 135	05/24/89	2450	1390	122	65	300	2	410	225	464	33
7S/3W-27M	06/06/90	1540	945	73	36	215	1	250	150	323	13
	12/11/90	4400	2670	270	109	480	4	1030	380	314	<1

TABLE D-4 (cont'd)

SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

WELLS IN RANCHO CALIFORNIA WATER DISTRICT

Site Location	Date Tested	Specific Conductance umhos	Total Dissolved Solids (mg/l)	Chemical Constituents - mg/l							
				Ca	Mg	Na	K	Cl	SO4	HCO3	NO3
No. 138 8S/2W-6F	10/30/90	460	240	19	2	74	2	71	13	113	18
No. 139 7S/2W-32G	12/29/87	460	295	24	7	65	1	60	11	104	7
No. 140	02/18/88	560	325	33	10	65	2	77	14	153	13
7S/2W-33F	01/15/92	450	235	11	2	88	1	68	18	107	2
No. 141	01/06/88	780	440	64	11	82	3	65	91	217	13
8S/2W-11P	01/30/92	820	500	63	13	95	3	79	110	238	19
No. 143	01/15/88	670	345	8	2	134	1	91	57	95	11
8S/2W-17J	10/17/90	660	345	25	4	112	2	89	62	140	12
No. 144 7S/3W-27D3	09/14/88	610	335	8	<1	114	1	95	33	92	<1
No. 145 7S/3W-28C	10/04/90	800	490	43	8	110	2	110	78	171	<1
No. 149A	08/26/88	950	540	71	211	96	1	115	47	302	18
7S/3W-28A	10/31/91	800	480	36	13	122	3	93	110	195	---
No. 150	09/29/88	1950	1235	134	29	225	2	290	220	390	15
7S/3W-27P	12/21/91	1000	590	74	17	108	4	130	110	207	---
No. 151	09/20/88	5780	3410	280	114	840	5	1660	670	369	<1
7S/3W-34B	07/25/91	860	485	53	16	103	4	90	130	183	---
	07/28/91	730	400	39	12	100	3	91	58	177	---
	07/29/91	600	340	9	2	122	5	63	34	204	---
	10/17/91	510	295	3	<1	118	1	45	10	137	---

TABLE D-4 (cont'd)

SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

WELLS IN RANCHO CALIFORNIA WATER DISTRICT

Site Location	Date Tested	Specific Conductance umhos	Total Dissolved Solids (mg/l)	Chemical Constituents - mg/l							
				Ca	Mg	Na	K	Cl	SO4	HCO3	NO3
No. 201 7S/2W-27J	03/28/91	530	315	19	6	83	2	83	16	110	2
No. 202 7S/2W-36J1	12/11/88	740	440	47	18	84	3	97	48	223	17
No. 203	05/18/88	960	580	50	39	110	4	96	115	275	---
8S/1W-6P1	06/29/88	970	530	44	36	112	4	120	123	250	5
	06/12/91	800	415	21	17	108	3	91	90	174	2
No. 204 7S/2W-26G	05/22/91	740	425	50	12	85	3	120	18	198	19
No. 205	03/28/88	500	290	23	3	81	2	83	27	107	21
7S/3W-35A	03/13/91	490	275	22	3	75	2	62	23	113	21
No. 207	09/01/88	510	245	1	<1	108	<1	54	26	82	<1
8S/2W-14B	09/14/88	480	305	3	<1	106	<1	58	23	24	1
	08/14/91	480	245	1	<1	100	<1	52	28	55	<1
No. 208	09/01/88	680	415	44	15	77	3	119	14	186	18
7S/2W-35M	09/14/88	690	440	44	14	77	3	129	14	183	16
	08/14/91	600	340	23	7	89	2	85	18	162	4
No. 209 7S/2W-28J	05/22/91	790	435	40	14	105	2	150	35	162	8
No. 210	03/28/88	1030	575	76	22	93	5	99	143	247	4
8S/2W-12K	09/25/91	1040	600	74	20	120	5	120	160	238	5
No. 212	03/28/88	640	330	42	2	74	3	81	33	146	14
8S/2W-11M	09/25/91	600	320	41	2	82	4	86	35	146	14

TABLE D-4 (cont'd)

SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

WELLS IN RANCHO CALIFORNIA WATER DISTRICT

Site Location	Date Tested	Specific Conductance umhos	Total Dissolved Solids (mg/l)	Chemical Constituents - mg/l							
				Ca	Mg	Na	K	Cl	SO4	HCO3	NO3
No. 215	08/15/90	650	380	40	13	71	3	100	14	162	11
7S/2W-34M	09/26/90	---	---	---	---	---	---	---	---	---	13
No. 216	06/01/88	480	280	25	4	65	2	71	11	134	---
8S/2W-7W	06/29/88	480	275	29	5	59	3	81	7	110	26
	06/12/91	500	285	30	5	59	2	76	9	113	23
	05/27/92	470	285	33	6	53	2	72	10	119	20
No. 217	03/28/88	580	285	8	1	108	1	81	20	113	15
8S/2W-17M12	08/10/88	570	280	8	1	105	1	82	20	55	13
	08/14/91	570	305	17	2	99	2	74	28	134	16
No. 231	08/15/90	1280	805	126	18	120	5	100	310	244	9
8S/2W-20B6	09/26/90	---	---	---	---	---	---	---	---	---	6
	03/04/92	1700	1270	180	51	160	6	140	510	332	5
No. 232	08/15/90	960	590	71	19	110	5	98	130	235	30
8S/2W-11J	09/26/90	---	---	---	---	---	---	---	---	---	35
	09/25/91	980	565	74	19	106	5	98	120	244	37
No. 233	06/15/88	900	535	71	21	100	5	96	136	247	4
8S/2W-12K	03/27/91	1020	580	66	19	114	5	95	140	247	12
No. 234 (Old 114)	03/31/88	840	480	54	15	100	4	61	109	241	18
8S/2W-11P	03/27/91	1020	605	69	19	114	5	77	138	256	37
No. 235 (Old 137)	06/24/88	460	310	40	10	41	2	58	10	140	15
8S/3W-1Q	06/20/90	420	230	22	4	56	2	50	6	128	18
No. 301	07/29/92	500	290	20	6	80	1	45	56	143	<1
7S/3W-18Q1											
No. 302	04/11/88	690	360	36	6	100	1	77	65	192	<1
7S/3W-18H	05/15/91	760	425	58	9	87	2	83	72	220	<1
	05/14/92	---	270	12	2	90	<1	48	48	---	---
No. 309	08/15/90	690	370	19	3	119	2	140	25	73	5
7S/3W-27H	04/11/91	---	---	---	---	---	---	---	---	---	<.001
	09/25/91	730	365	19	2	122	2	150	27	82	5

TABLE D-5

SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

WELLS ON INDIAN RESERVATIONS

Site Location	Date Tested	Specific Conductance umhos	Total Dissolved Solids (mg/l)	Chemical Constituents - mg/l							
				Ca	Mg	Na	K	Cl	SO4	HCO3*	NO3
Pechanga Indian Reservation											
8S/2W-28R01	08/03/89	495	286	41	4.0	60	0.9	37	13	177 **	1.1 @N
	07/26/90	525	296	48	4.8	54	1.0	45	14	191	1.5 @N
	07/17/91	462	261	31	3.2	66	0.8	44	12	155	0.8 @N
8S/2W-35D01	08/03/89	660	347	43	5.5	87	1.2	78	35	169	.35 @N
8S/2W-29A01	08/02/89	346 **	207	31	11	24	0.4	18	7.0	131 **	2.0 @N
	07/24/90	354	193	32	11	25	0.4	24	6.7	133	2.0 @N
	07/18/91	361	194	32	10	26	0.4	25	6.0	134	1.8 @N
8S/2W-34B04	10/05/89	600	---	---	---	---	---	---	---	198	.47 @N
8S/2W-28Q02	10/05/89	629 **	378	48	19	49	0.6	76	14	169 **	4.2 @N
	07/26/90	613	383	48	18	47	0.7	75	12	171	3.9 @N
	07/18/91	618	379	49	18	49	0.6	83	14	172	3.0 @N
8S/2W-20J01	08/15/90	1130	596	100	22	110	2.3	110	200	236	1.3 @N
8S/2W-20J02	08/15/90	404	216	42	6.3	38	0.8	27	12	159	1.2 @N
8S/2W-29B02	03/01/90	456	257	5.5	0.14	89	0.8	66	22	100	---
	03/06/90	456	256	5.9	0.13	90	0.7	66	20	99	<0.1 @N
8S/2W-29B03	03/06/90	478	275	14	1.9	84	0.8	65	16	123	<0.1 @N
8S/2W-29B05	03/02/90	397	229	29	9.5	43	1.2	35	4.9	141	1.8 @N
8S/2W-29B06	03/02/90	406	259	34	11	38	0.8	38	10	143	---
	03/06/90	427	240	32	11	40	1.0	40	8.1	148	1.2 @N

* - Alkalinity as CAC03

** - Value slightly different than provisional data reported in 1989-90

TABLE D-5 (cont'd)

SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

WELLS ON INDIAN RESERVATIONS

Site Location	Date Tested	Specific Conductance umhos	Total Dissolved Solids (mg/l)	Chemical Constituents - mg/l							
				Ca	Mg	Na	K	Cl	SO4	HCO3*	NO3
Pechanga Indian Reservation (Continued)											
8S/2W-29B07	03/07/90	396	230	8.6	2.5	71	0.9	51	11	102	<0.1 @N
	08/16/90	371	199	8.4	1.8	69	0.8	50	14	106	<0.1 @N
8S/2W-29B08	03/07/90	464	272	31	9.4	52	1.2	58	12	134	0.45 @N
	08/16/90	458	261	34	9.1	48	1.1	59	17	135	0.4 @N
8S/2W-29B09	03/07/90	343	210	21	9.2	39	1.0	24	6.7	131	1.3 @N
	08/17/90	317	197	26	10	26	1.1	22	3.4	130	1.6 @N
Cahuilla Indian Reservation											
8S/3E-2K01	07/20/89	531 **	323	46	11	41	3.4	60	22	136 **	3.6 @N
	08/01/90	508	310	46	11	38	3.3	60	19	134	3.8 @N
	07/16/91	522	306	50	10	39	3.3	61	21	139	3.7 @N
7S/3E-21L01	08/02/89	1050 **	675	90	19	100	3.5	84	190	216 **	3.1 @N
	08/01/90	1020	610	87	18	100	3.4	85	180	217	3.0 @N
	07/17/91	995	636	93	18	100	3.7	95	180	206	2.5 @N
7S/2E-33N	08/02/89	355	206	16	2.1	53	3.5	48	15	78	.73 @N
7S/3E-34E01	07/20/89	338 **	204	30	5.6	26	5.0	29	7.0	98 **	3.3 @N
	07/31/91	337	109	31	5.5	25	4.5	31	6.3	99	3.5 @N
	07/16/91	335	209	31	5.9	26	4.7	32	6.3	99	3.5 @N

* - Alkalinity as CAC03

** - Value slightly different than provisional data reported in 1989-90

TABLE D-6

SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

WELLS ON CAMP PENDLETON

Site Location	Date Tested	Specific Conductance umhos	Total Dissolved Solids (mg/l)	Chemical Constituents - mg/l							
				Ca	Mg	Na	K	Cl	SO4	HCO3	NO3
10S/5W-26C1	1989										
(Bldg 2201)	June	1302	734	78.1	23.0	85.9	---	136	145	212	<0.4
	1991										
	Jan	1271	---	81	36.1	152	---	166	---	---	<0.04
	June	1290	752	99	32.4	133	---	167	136	237	<0.4
	1992										
	March	1210	792	91	29.8	146	---	159	135	279	<0.4
10S/5W-23J1	1989										
(Bldg 2301)	June	1139	662	71.5	21.7	80.8	---	117	128	209	<0.4
	1990										
	Jan	1150	632	90.6	32.4	102	---	160	170	214	<0.5
	1991										
	Jan	1112	---	73.7	32	128	---	136	136	---	<0.04
	June	1090	662	87.4	29.7	117	---	140	121	204	<0.4
	1992										
	March	1080	644	74.2	25.8	133	---	127	118	282	1.3
10S/4W-18M4	1989										
(Bldg 2373)	June	1156	688	74.6	24.4	67.9	---	130	138	197	8.9
	1990										
	Jan	1120	630	86.4	32.3	101	---	156	166	210	<0.05
	Apr	1160	720	98.8	34.8	107	---	152	146	218	1.4
	1991										
	Jan	1202	---	84.1	40.5	117	---	162	153	---	<0.04
	June	1180	736	102	37.1	106	---	163	138	197	<0.4

TABLE D-6 (cont'd)

SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

WELLS ON CAMP PENDLETON

Site Location	Date Tested	Specific Conductance umhos	Total Dissolved Solids (mg/l)	Chemical Constituents - mg/l							
				Ca	Mg	Na	K	Cl	SO4	HCO3	NO3
10S/4W-18E3	1989										
(Bldg 2393)	June	1166	758	80.5	28.1	67.4	---	132	157	198	9.5
	1990										
	Jan	1230	748	97.4	39.7	106	---	178	179	226	<0.05
	Apr	1190	733	99.6	37.5	112	---	159	156	207	2.5
	1991										
	June	1130	680	97.6	37.6	100	---	139	142	166	2.7
10S/4W-7R2	1989										
(Bldg 2603)	June	1281	765	76.5	25.1	82.4	---	149	153	209	10.3
	Apr	1270	788	104	36.5	126	---	173	161	215	2.6
	1991										
	June	1400	836	111	41.1	130	---	195	155	215	0.04
10S/4W-7H2	1989										
(Bldg 2671)	June	1137	826	79.1	28.5	85.5	---	157	158	246	12.6
	1990										
	Jan	1290	772	96.3	38.6	116	---	184	179	252	0.9/1.2
	Apr	1320	817	109	42.1	128	---	177	167	249	5.4
	1991										
	Jan	401	---	87.3	44.4	103.1	---	20.5	179	---	1.07

TABLE D-6 (cont'd)

SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

WELLS ON CAMP PENDLETON

Site Location	Date Tested	Specific Conductance umhos	Total Dissolved Solids (mg/l)	Chemical Constituents - mg/l							
				Ca	Mg	Na	K	Cl	SO4	HCO3	NO3
10S/4W-7A2	1989										
(Bldg 2673)	June	1073	688	72.1	23.9	59.6	---	120	140	184	15.9
	Jan	1080	572	91.2	34.2	80.2	---	151	178	174	1.4
	1990										
	Apr	1130	718	111	42.1	91	---	148	167	175	9.1
	1991										
	June	1190	718	113	40.3	93.8	---	173	180	160	7.5
10S/5W-23K2	1989										
(Bldg 33924)	June	1207	698	75.6	22.8	84	---	138	137	231	<0.4
	Apr	1240	728	100	32.9	129	---	158	148	245	1.3
	1991										
	Jan	1193	---	80.6	35.2	131	---	21.3	146	---	<0.04
	June	1160	676	88.1	29.6	118	---	141	129	224	<0.04
	1992										
	March	1130	705	76.7	26	126	---	149	125	279	<0.4
10S/5W-13R2	1990										
(Bldg 2363)	Jan	1030	540	*96	26.6	94.8	---	141	130	200	0.7
	1991										
	June	1150	702	98.7	32	109	---	149	125	288	1.3
10S/5W-23G3	1991										
(Bldg 33926)	June	1160	684	83.4	28.3	125	---	145	124	223	<0.04
	1992										
	March	1060	674	75.9	24.1	127	---	139	111	269	<0.4

* - Reported as .96

TABLE D-7

SANTA MARGARITA RIVER WATERSHED
INORGANIC WATER QUALITY DATA

EASTERN MUNICIPAL WATER DISTRICT
SANTA MARGARITA RIVER MONITORING PROGRAM

Site Location	Date Tested	Specific Conductance umhos	Total Dissolved Solids (mg/l)	Chemical Constituents - mg/l							
				Ca	Mg	Na	K	Cl	SO4	HCO3	NO3
Santa Margarita	04/24/91	---	890	122	58	112	6	220	250	220	3.6
River at	05/10/91	---	920	92	433	112	4.2	191	213	240	---
Camp Pendleton	05/22/91	---	---	---	---	---	---	---	---	---	1.1
Diversion Dam	06/05/91	---	850	---	---	---	---	---	---	---	---
	06/17/91	---	855	105	47	104	4	200	200	226	0.1
	07/02/91	---	865	---	---	---	---	---	---	---	---
	07/15/91	---	840	103	---	108	3.6	149	205	---	<0.1
	07/30/91	---	845	---	---	---	---	---	---	---	---
	08/15/91	---	775	95	40	112	4.2	187	---	---	<0.1
	08/27/91	---	915	---	---	---	---	---	---	---	---
	09/17/91	---	840	80	44	---	---	187	201	---	<0.1
	09/24/91	---	885	---	---	---	---	---	---	---	---
	10/10/91	---	825	95	---	---	---	172	191	---	0.2
	10/22/91	---	790	---	---	---	---	---	---	---	---
	11/26/91	---	795	91	37	106	---	190	180	---	0.05
	12/20/91	---	815	100	48	108	4	190	130	---	0.05
	01/21/92	---	850	110	45	118	6	200	220	---	1.3
	02/25/92	---	825	94	48	108	5	190	220	---	2.9
	03/31/92	---	700	76	35	92	4	150	180	---	3.7
	04/21/92	---	865	93	40	112	5	190	220	---	2.6
	05/12/92	---	870	---	---	---	---	---	---	---	---
	05/26/92	---	755	99	41	98	7	160	200	---	2.7
	06/09/92	---	865	---	---	---	---	---	---	---	---
	06/23/92	---	---	95	41	109	3.8	179	205	---	0.6
	07/07/92	---	790	---	---	---	---	---	---	---	---
	07/21/92	---	750	---	---	---	---	---	---	---	<0.1
	08/05/92	---	865	---	---	---	---	---	---	---	---
	09/15/92	---	810	91	41	---	---	176	---	236	<0.1

TABLE D-8

SANTA MARGARITA RIVER WATERSHED
SELECTED BIOLOGICAL WATER QUALITY DATA

EASTERN MUNICIPAL WATER DISTRICT
SANTA MARGARITA RIVER MONITORING PROGRAM

Site Location	Date Tested	Temp o C	DO mg/l	pH units	TDS mg/l	Velocity ft/s	Flow gpm	NO3-N mg/l	Phosphorus mg/l	Nitrogen mg/l
Temecula Creek										
at I-15	04/24/91	21	5.2	---	720	1.30	790	1.5	0.08	2.3
	05/10/91	19	8.0	7.64	815	0.50	636	---	---	---
	05/22/91	22	7.4	7.6	805	0.68	468	---	0.1	2.4
	06/05/91	17	5.2	6.8	780	1.00	552	---	---	---
	06/17/91	23	8.4	7.3	765	0.70	707	2.1	0.12	---
	07/02/91	23	9.4	6.8	760	0.68	639	---	---	---
	07/15/91	21	4.8	7.7	750	0.57	447	1.7	0.3	---
	07/30/91	20	9.8	7.3	610	0.63	402	---	---	---
	08/15/91	23	8.0	7.3	800	---	---	0.7	0.5	1.8
	08/27/91	23	6.6	7.2	755	0.58	329	---	---	---
	09/17/91	20	6.8	7.3	755	0.71	448	0.7	0.1	---
	09/24/91	21	4.2	7.4	780	---	---	---	---	---
	10/10/91	19	6.4	7.0	---	0.70	526	1.8	0.4	---
	10/22/91	18	5.0	7.3	735	0.87	973	---	---	---
	11/26/91	15	8.4	7.7	785	0.61	496	0.9	0.23	1.3
	12/20/91	12	12.4	7.4	725	---	---	0.9	0.37	1.6
	01/21/92	---	---	---	745	---	---	0.4	2.0	1.5
	02/25/92	---	8.2	7.1	860	1.11	3333	---	---	---
	03/31/92	---	10.14	7.3	800	1.16	4680	2.5	0.8	3.9
	04/21/92	---	7.06	7.4	810	0.72	1929	1.6	1.3	2.4
	05/12/92	17	7.18	7.8	790	0.84	2506	---	---	---
	05/26/92	---	4.44	7.6	790	---	---	1.5	0.17	1.9
	06/09/92	16	9.5	7.5	795	0.65	192	---	---	---
	06/23/92	16	8.9	7.4	755	0.58	272	1.1	0.6	---
	07/07/92	14	10.0	7.4	765	---	---	---	---	---
	07/21/92	---	---	---	750	---	---	0.1	0.1	---
	08/05/92	14	8.38	7.4	800	0.65	828	---	---	---
	08/18/92	---	---	7.5	610	---	---	0.8	0.1	1.5
	08/31/92	19	7.9	7.5	755	---	---	---	---	---
	09/15/92	21	6.5	7.4	765	0.49	337	0.1	0.1	0.3
	09/29/92	20	6.27	7.5	755	0.43	337	0.8	<0.1	1.0

TABLE D-8 (cont'd)

SANTA MARGARITA RIVER WATERSHED
SELECTED BIOLOGICAL WATER QUALITY DATA

EASTERN MUNICIPAL WATER DISTRICT
SANTA MARGARITA RIVER MONITORING PROGRAM

Site Location	Date Tested	Temp o C	DO mg/l	pH units	TDS mg/l	Velocity ft/s	Flow gpm	NO3-N mg/l	Phosphorus mg/l	Nitrogen mg/l
Santa Margarita River at Temecula	04/24/91	21	6.4	---	715	---	---	---	---	---
	05/10/91	19	8.4	8.23	785	---	---	---	---	---
	05/22/91	23.5	11.8	8.4	660	---	---	---	---	---
	06/05/91	23	7.4	7.3	595	---	---	---	---	---
	06/17/91	24	7.4	8.3	545	---	---	---	---	---
	07/02/91	23	9.0	6.9	600	---	---	---	---	---
	07/15/91	22	5.6	7.8	550	---	---	---	---	---
	07/30/91	21	10.4	7.9	750	---	---	---	---	---
	08/15/91	25	9.9	7.9	475	---	---	---	---	---
	08/27/91	24	9.6	7.8	570	---	---	---	---	---
	09/17/91	25	9.9	8.1	450	---	---	---	---	---
	09/24/91	24	6.2	8.0	585	---	---	---	---	---
	10/10/91	22	10.0	7.7	575	---	---	---	---	---
	10/22/91	20	7.8	7.8	505	---	---	---	---	---
	11/26/91	13	11.6	8.3	720	---	---	---	---	---
	12/20/91	12	11.4	7.5	700	---	---	---	---	---
	02/25/92	---	9.4	7.2	840	---	---	---	---	---
	03/31/92	---	10.87	7.7	660	---	---	---	---	---
	04/21/92	---	9.61	7.7	720	---	---	---	---	---
	05/12/92	18	8.42	7.8	775	---	---	---	---	---
	05/26/92	---	6.77	7.8	705	---	---	---	---	---
	06/09/92	18	5.84	8.1	710	---	---	---	---	---
	06/23/92	19	10.2	8.1	605	---	---	---	---	---
	07/07/92	16	10.2	7.9	580	---	---	---	---	---
	07/21/92	21	10.8	8.2	600	---	---	---	---	---
	08/05/92	15	8.53	7.8	625	---	---	---	---	---
	08/18/92	25	8.0	8.1	750	---	---	---	---	---
	08/31/92	22	8.5	8.0	570	---	---	---	---	---
	09/29/92	23	6.5	8.0	530	---	---	---	---	---

TABLE D-8 (cont'd)

SANTA MARGARITA RIVER WATERSHED
SELECTED BIOLOGICAL WATER QUALITY DATA

EASTERN MUNICIPAL WATER DISTRICT
SANTA MARGARITA RIVER MONITORING PROGRAM

Site Location	Date Tested	Temp o C	DO mg/l	pH units	TDS mg/l	Velocity ft/s	Flow gpm	NO3-N mg/l	Phosphorus mg/l	Nitrogen mg/l
Santa Margarita River										
at Willow Glen	04/24/91	19.5	6.6	---	935	0.31	1965	1.1	0.08	1.9
	05/10/91	19	9.0	8.36	1045	0.07	1171	---	---	---
	05/22/91	19.5	9.0	8.5	855	0.1	2181	1.7	0.1	1.76
	06/05/91	20	5.8	6.8	740	0.15	2129	---	---	---
	06/17/91	23	7.0	7.8	740	0.09	1483	<0.1	0.43	<0.1
	07/02/91	22	7.4	7.1	735	0.08	1543	---	---	---
	07/15/91	23	5.8	7.8	725	0.07	30.5	0.2	<0.1	---
	07/30/91	22	9.8	7.9	715	0.08	35.01	---	---	---
	08/15/91	25	---	7.9	540	---	---	0.05	<0.1	2.0
	08/27/91	25	8.7	7.9	610	0.17	2065	---	---	---
	09/17/91	22	9.9	8.2	570	0.09	1236	0.2	0.1	---
	09/24/91	24.5	6.2	8.2	510	---	---	---	---	---
	10/10/91	21	8.5	---	600	0.09	1547	0.8	0.1	---
	10/22/91	19	8.7	7.9	565	0.12	1875	---	---	---
	11/26/91	12	11.7	8.4	78	0.03	445	<0.1	0.4	0.7
	12/20/91	10	14.8	7.8	805	---	---	0.1	0.27	0.4
	01/21/92	---	---	---	890	---	---	1.0	1.8	1.6
	02/25/92	---	10.4	8.0	935	0.22	3044	---	0.1	---
	03/31/92	---	---	8.1	750	---	---	2.9	0.78	3.8
	04/21/92	---	11.7	8.7	895	0.53	3894	1.6	1.7	2.3
	05/12/92	19	11.3	8.8	885	0.57	3914	---	---	---
	05/26/92	---	5.79	7.9	180	---	---	3.1	1.4	5.8
	06/09/92	17	7.5	8.4	650	0.07	3713	---	---	---
	06/23/92	17	8.7	8.4	625	0.08	3722	0.1	0.15	---
	07/07/92	17	10.9	8.1	670	0.26	2024	---	---	---
	07/21/92	20	10.2	8.5	---	0.06	3231	<0.1	<0.1	---
	08/05/92	17	7.2	8.0	690	0.41	3145	---	---	---
	08/18/92	29	8.67	8.4	635	---	---	0.1	<0.1	1.1
	08/31/92	22	9.47	8.2	615	---	---	---	---	---
	09/15/92	22	8.85	8.2	610	0.09	11.34	<0.1	<0.1	0.3
	09/29/92	23	7.01	8.2	590	0.04	783	0.3	<0.1	0.6

TABLE D-8 (cont'd)

SANTA MARGARITA RIVER WATERSHED
SELECTED BIOLOGICAL WATER QUALITY DATA

EASTERN MUNICIPAL WATER DISTRICT
SANTA MARGARITA RIVER MONITORING PROGRAM

Site Location	Date Tested	Temp o C	DO mg/l	pH units	TDS mg/l	Velocity ft/s	Flow gpm	NO3-N mg/l	Phosphorus mg/l	Nitrogen mg/l
Santa Margarita River										
at DeLuz Road	04/24/91	19	10.2	---	990	1.48	7135	6.2	0.63	7.7
	05/10/91	18.5	8.0	8.25	1055	1.35	7659	---	---	---
	05/22/91	20	9.4	8.5	1020	1.16	8742	4	0.3	4.0
	06/05/91	18	6.8	6.8	965	1.28	4791	---	---	---
	06/17/91	21	8.4	8.1	980	0.88	3775	3	0.15	---
	07/02/91	21	10.8	7.3	990	0.9	2314	---	---	---
	07/15/91	22	6.2	8.1	1010	0.89	3308	2.1	0.5	---
	07/30/91	21	10.6	8.0	940	0.93	2831	---	---	---
	08/15/91	24	11.5	---	895	---	---	1.4	1	3.2
	08/27/91	24	9.0	8.0	875	0.98	2483	---	---	---
	09/17/91	20	9.6	7.5	860	0.85	2662	1.7	1.1	---
	09/24/91	24	5.7	8.2	840	---	---	---	---	---
	10/10/91	19	8.8	8.0	780	1.06	2058	3	0.9	---
	10/22/91	18	8.6	8.1	780	1.16	3473	---	0.6	---
	11/26/91	13	9.2	8.2	954	0.58	1381	1.2	0.73	1.7
	12/20/91	11	7.5	8.0	1010	---	---	1.6	0.29	1.9
	01/21/92	---	---	---	1030	---	---	2.6	0.7	3.1
	02/25/92	---	8.8	8.0	955	1.86	14703	---	0.25	---
	03/31/92	---	9.65	8.0	820	2.30	23306	5.8	0.23	6.4
	04/21/92	---	7.21	8.1	985	1.68	8562	4.8	0.41	5.6
	05/12/92	21	9.2	8.3	960	1.68	9120	---	---	---
	05/26/92	---	7.5	8.1	825	---	---	4.2	0.53	5.5
	06/09/92	18	9.3	8.2	950	1.27	4004	---	---	---
	06/23/92	22	7.8	8.3	910	1.34	3069	2.9	0.6	---
	07/07/92	16	10.84	8.2	920	---	---	---	---	---
	07/21/92	22	8.9	8.4	875	0.93	2471	0.2	0.2	---
	08/05/92	15	9.76	8.2	1020	1.00	2442	---	---	---
	08/18/92	29	6.45	8.3	940	---	---	2.1	0.2	3.0
	08/31/92	21	9.01	8.2	885	---	---	---	---	---
	09/15/92	22	8.15	8.1	915	1.17	2456	0.2	0.3	0.7
	09/29/92	25	6.78	8.3	890	0.58	1790	1.5	0.2	1.7

TABLE D-8 (cont'd)

SANTA MARGARITA RIVER WATERSHED
SELECTED BIOLOGICAL WATER QUALITY DATA

EASTERN MUNICIPAL WATER DISTRICT
SANTA MARGARITA RIVER MONITORING PROGRAM

Site Location	Date Tested	Temp o C	DO mg/l	pH units	TDS mg/l	Velocity ft/s	Flow gpm	NO3-N mg/l	Phosphorus mg/l	Nitrogen mg/l
Santa Margarita River at Camp Pendleton Diversion Dam	04/24/91	18	9.2	8.3	890	0.97	10410	3.6	0.19	4.8
	05/10/91	18.5	6.4	7.94	920	0.68	5809	---	---	---
	05/22/91	20.25	8.6	---	---	0.54	4267	1.1	0.2	1.3
	06/05/91	21	6.3	7.1	850	0.68	2936	---	---	---
	06/17/91	22	7.2	7.7	855	0.71	2341	0.1	0.17	---
	07/02/91	23	10.4	6.8	865	0.83	1810	---	---	---
	07/15/91	21	5.8	8.1	840	0.28	415	<0.1	0.1	---
	07/30/91	24	10.4	7.8	845	---	---	---	---	---
	08/15/91	25	10.8	8.1	775	---	---	<0.1	0.6	3.5
	08/27/91	21.5	5.4	7.9	915	0.98	1288	---	---	---
	09/17/91	24	4.6	8.4	840	0.29	808	<0.1	0.2	---
	09/24/91	20	6.0	8.2	885	---	---	---	---	---
	10/10/91	19.5	8.2	8.5	825	0.67	961	0.2	0.6	---
	10/22/91	12	9.2	8.2	790	0.64	1005	---	---	---
	11/26/91	12	8.1	8.0	795	0.30	0.55	0.05	0.27	0.4
	12/20/91	---	14.0	8.2	815	1.26	1417	0.05	0.69	0.4
	01/21/92	---	---	---	850	---	---	1.3	0.4	1.8
	02/25/92	---	---	7.8	825	---	---	2.9	0.12	3.4
	03/31/92	---	11.34	7.9	700	---	---	3.7	0.22	4.4
	04/21/92	---	10.0	7.9	865	---	---	2.6	0.35	3.2
	05/12/92	18	9.3	8.1	870	1.12	6894	---	---	---
	05/26/92	---	7.52	8.1	755	---	---	2.7	0.52	3.7
	06/09/92	18	11.2	8.2	865	0.46	3336	---	---	---
	06/23/92	16	10.4	---	---	0.34	2729	0.6	0.6	---
	07/07/92	16	11.8	8.3	790	---	---	---	---	---
	07/21/92	19	10.8	8.5	750	0.13	223	<0.1	0.2	---
	08/05/92	16	10.29	8.1	865	0.34	---	---	---	---
	09/15/92	22	---	8.0	810	---	---	<0.1	0.2	---

TABLE D-8 (cont'd)

SANTA MARGARITA RIVER WATERSHED
SELECTED BIOLOGICAL WATER QUALITY DATA

EASTERN MUNICIPAL WATER DISTRICT
SANTA MARGARITA RIVER MONITORING PROGRAM

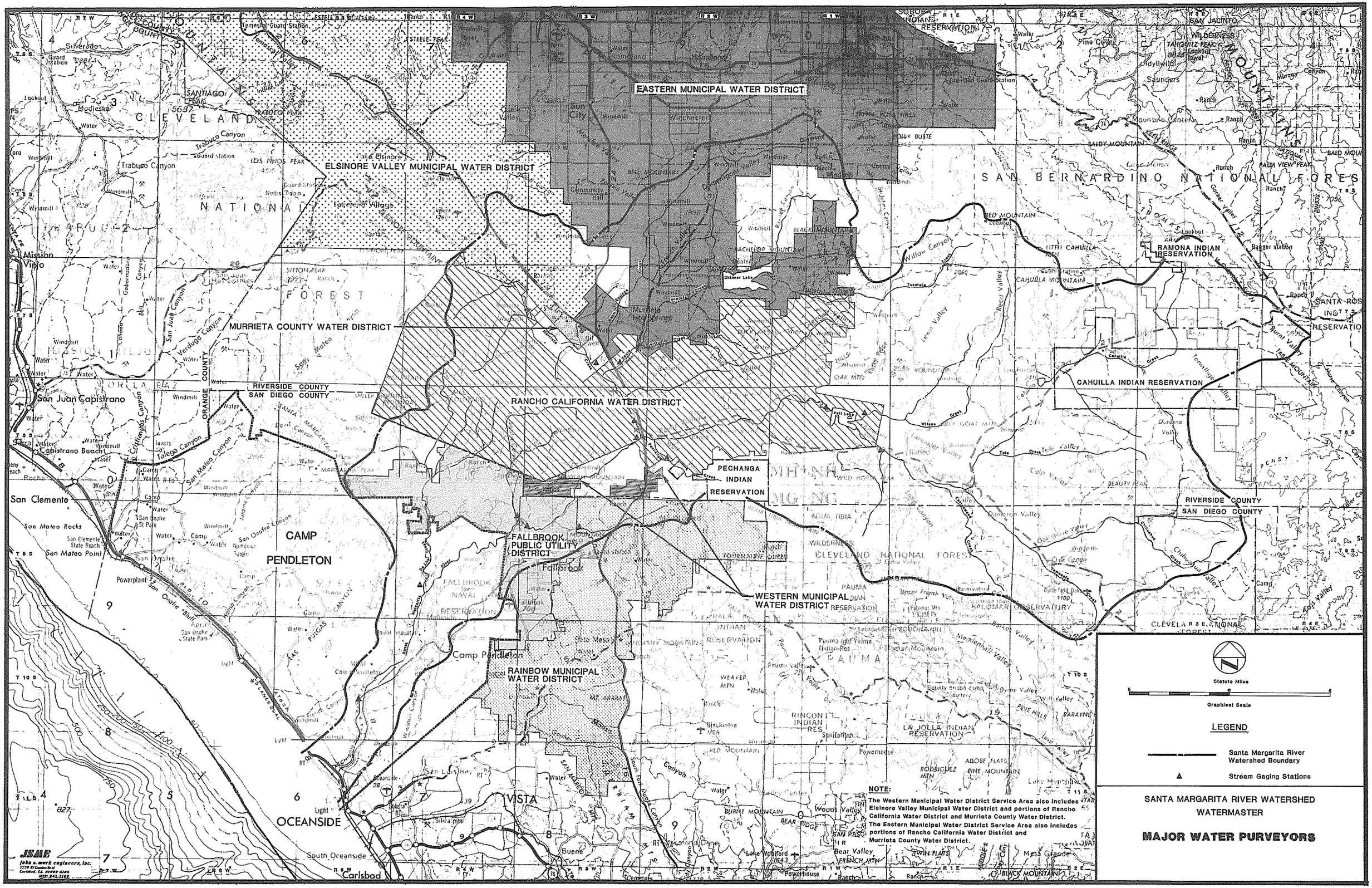
Site Location	Date Tested	Temp o C	DO mg/l	pH units	TDS mg/l	Velocity ft/s	Flow gpm	NO3-N mg/l	Phosphorus mg/l	Nitrogen mg/l
Santa Margarita River at Brackish	04/24/91	18	7.4	7.2	820	---	---	---	0.2	<0.1
	05/10/91	17.5	4.3	7.74	900	---	---	---	---	---
	05/22/91	17	7.6	7.8	1045	---	---	0.1	0.7	0.6
	06/05/91	23	7.4	7.3	1320	---	---	---	---	---
	06/17/91	21.5	6.2	7.6	8220	---	---	5.7	0.64	---
	07/02/91	24	8.4	7.2	11415	---	---	---	---	---
	07/15/91	27	8.4	7.9	20725	---	---	0.1	0.2	---
	07/30/91	24	7.6	7.6	22000	---	---	---	---	---
	08/15/91	23	3.7	7.8	20100	---	---	<0.1	1.5	2.9
	08/27/91	24	9.4	8.0	29920	---	---	---	---	---
	09/17/91	22	10.4	7.9	24220	---	---	0.1	0.5	---
	10/10/91	19	5.0	7.8	30620	---	---	0.7	1.1	---
	10/22/91	19	8.0	8.0	33340	---	---	---	---	---
	11/26/91	13	10.4	8.1	28460	---	---	18	<0.1	19
	12/20/91	11	14.0	8.1	28320	---	---	0.6	0.26	1
	01/21/92	---	---	---	3400	---	---	0.2	0.8	0.7
	02/25/92	---	9.2	7.6	28500	---	---	0.8	0.42	1.3
	03/31/92	---	9.77	7.7	500	---	---	2	0.96	3.3
	04/21/92	19	8.14	7.8	910	---	---	1	0.46	2.1
	05/12/92	18	7.84	8.1	865	---	---	---	---	---
	05/26/92	---	6.59	7.8	930	---	---	0.5	0.64	1.7
	06/09/92	18	6.54	7.8	2750	---	---	---	---	---
	06/23/92	16	6.07	7.7	1170	---	---	0.1	2.2	---
	07/07/92	18	8.9	7.6	17450	---	---	---	---	---
	07/21/92	21	12.7	7.9	16070	---	---	<0.1	0.5	---
	08/05/92	19	8.75	7.9	18695	---	---	---	---	---
	08/18/92	29	8.8	8.2	20210	---	---	0.1	0.7	1.4
	08/31/92	22	5.6	7.6	21335	---	---	---	---	---
	09/15/92	21	6.09	7.5	24610	---	---	<0.1	0.4	0.6
	09/29/92	23	4.05	7.6	30720	---	---	0.1	0.2	0.4

TABLE D-8 (cont'd)

SANTA MARGARITA RIVER WATERSHED
SELECTED BIOLOGICAL WATER QUALITY DATA

EASTERN MUNICIPAL WATER DISTRICT
SANTA MARGARITA RIVER MONITORING PROGRAM

Site Location	Date Tested	Temp o C	DO mg/l	pH units	TDS mg/l	Velocity ft/s	Flow gpm	NO3-N mg/l	Phosphorus mg/l	Nitrogen mg/l
Santa Margarita River at Estuary	04/24/91	18	9.9	7.4	1160	---	---	0.7	0.36	2.2
	05/10/91	17	5.7	7.8	6540	---	---	---	---	---
	05/22/91	17.5	11.6	7.9	4180	---	---	1.7	---	1.75
	06/05/91	21	2.0	7.2	4735	---	---	---	---	---
	06/17/91	19	7.6	7.9	19340	---	---	4.4	1.3	---
	07/02/91	20	7.8	7.4	24930	---	---	---	---	---
	07/15/91	22	6.9	8.0	29870	---	---	3.4	0.2	---
	07/30/91	22	10.5	8.0	16500	---	---	---	---	---
	08/15/91	23	3.4	7.8	50688	---	---	1.2	1.4	3.9
	08/27/91	22	8.1	8.0	35160	---	---	---	---	---
	09/17/91	20	7.4	8.1	34020	---	---	1	0.4	---
	09/24/91	19	7.0	8.4	35760	---	---	---	---	---
	10/10/91	18	7.9	8.3	37340	---	---	3.1	0.3	---
	10/22/91	19	8.8	8.3	37040	---	---	---	---	---
	11/26/91	12	8.2	8.2	34700	---	---	22	0.1	23
	12/20/91	12	11.8	8.1	35440	---	---	0.4	<0.1	0.7
	01/21/92	---	---	---	2330	---	---	0.1	0.8	0.7
	02/25/92	---	7.4	7.5	33040	---	---	3.7	0.41	4.3
	03/31/92	---	8.84	7.8	1280	---	---	1.9	0.66	3.5
	04/21/92	17	5.03	7.6	1670	---	---	4.5	0.5	5.2
	05/12/92	18	3.18	8.1	2470	---	---	---	---	---
	05/26/92	---	3.46	7.6	1340	---	---	1.4	0.91	2.6
	06/09/92	17	3.25	7.7	4450	---	---	---	---	---
	06/23/92	17	3.0	7.8	5290	---	---	2	2.2	---
	07/07/92	17	3.7	7.6	22850	---	---	---	---	---
	07/21/92	18	5.3	8.1	28380	---	---	0.1	0.4	---
	08/05/92	18	4.92	7.9	28235	---	---	---	---	---
	08/18/92	24	4.75	8.0	29385	---	---	0.2	0.4	1.5
	08/31/92	21	4.14	7.5	23260	---	---	---	---	---
	09/15/92	19	---	7.4	32410	---	---	<0.1	0.2	---
	09/29/92	23	7.3	8.0	35940	---	---	<0.1	<0.1	<0.1



SANTA MARGARITA RIVER WATERSHED
WATERMASTER

MAJOR WATER PURVEYORS