SANTA MARGARITA RIVER WATERSHED

ANNUAL WATERMASTER REPORT

WATER YEAR 2001-2002

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

CIVIL NO. 1247 - SD-T

JAMES S. JENKS
WATERMASTER
P. O. BOX 631
FALLBROOK, CA. 92088
(760) 728-1028
FAX (760) 728-1990

SEPTEMBER 2003

TABLE OF CONTENTS

Page No.

LIST OF TABLES

LIST OF FIGURES

APPENDICES

Appendix A - Production and Use Water Year 2001-2002

Appendix B - Production and Use Water Years 1965-66 To 2001-2002

Appendix C - Substantial Water Users 2001-2002

Appendix D - Water Quality Data

MAP

SECTION 1 - SUMMARY

Section 1 - A summary of the Santa Margarita River Watershed Annual Watermaster Report for the 2001-2002 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 is 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 that do not support the Santa Margarita River stream system.

Section 3 - Surface water flows were well below normal in 2001-2002, with flows for long-term stations ranging from 11% to 31% of the long-term average flow. Direct surface diversions totaled 913 acre feet compared with 983 acre feet in 2000-2001. The total quantity of water in storage in the Watershed on September 30, 2002, was 790,345 acre feet, of which 18,265 acre feet was Santa Margarita River water and 772,080 acre feet was imported water.

Section 4 - Groundwater extractions were 41,739 acre feet compared to 41,765 acre feet in 2000-2001. Water purveyors pumped 34,295 acre feet and 7,444 acre feet were pumped by other substantial users. Total annual local production including surface diversions for use for the period 1993-2002 is shown on Figure 1.1.

Section 5 - During 2001-2002, 81,873 acre feet of water were imported and distributed in the Santa Margarita River Watershed. This compares with 65,386 acre feet in 2000-2001 and represents a 25.2 percent increase. Net exports, including wastewater, were 8,992 acre feet, compared to 7,996 acre feet in 2001. Annual imports for the period 1993-2002 are shown on Figure 1.2.

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. Except for appropriative rights, water rights generally have not been quantified in the watershed. Perfected appropriative surface water rights on file with the State Water Resources Control Board (SWRCB) amount to 906,892 gallons per day which corresponds to 1.4 cfs or 2.78 acre feet per day of direct diversion rights and 44,315.5 acre feet of active storage rights.

Figure 1.1

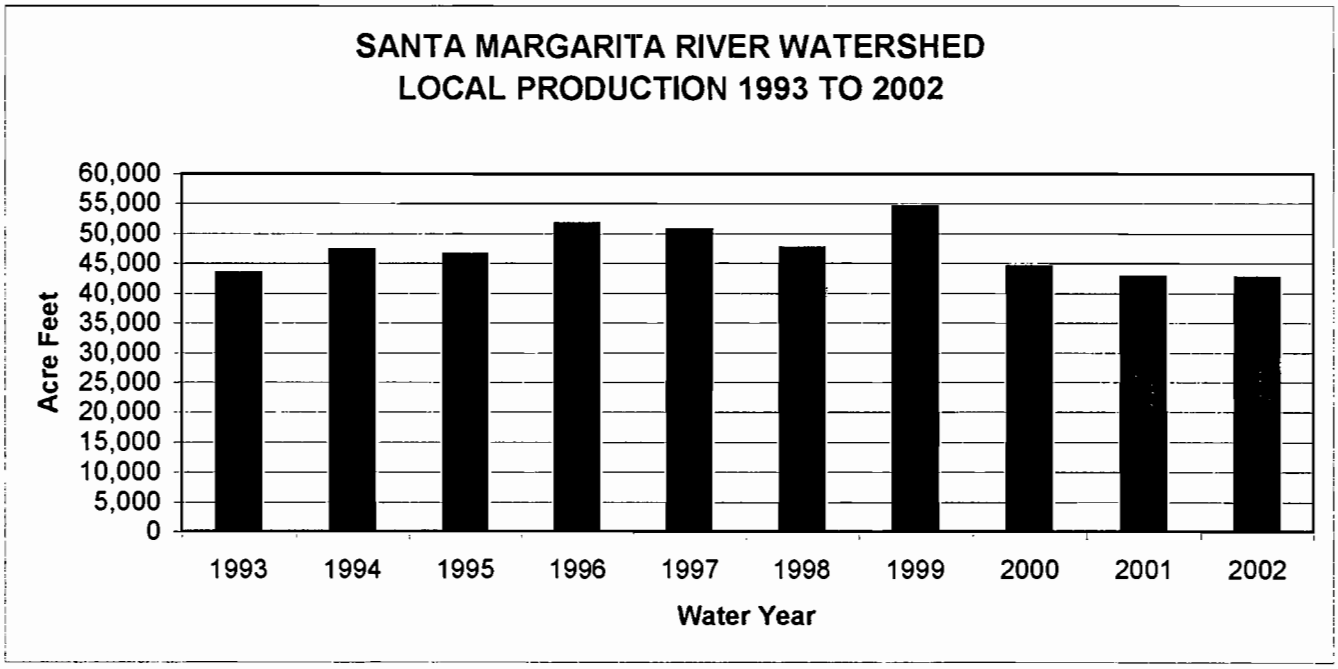
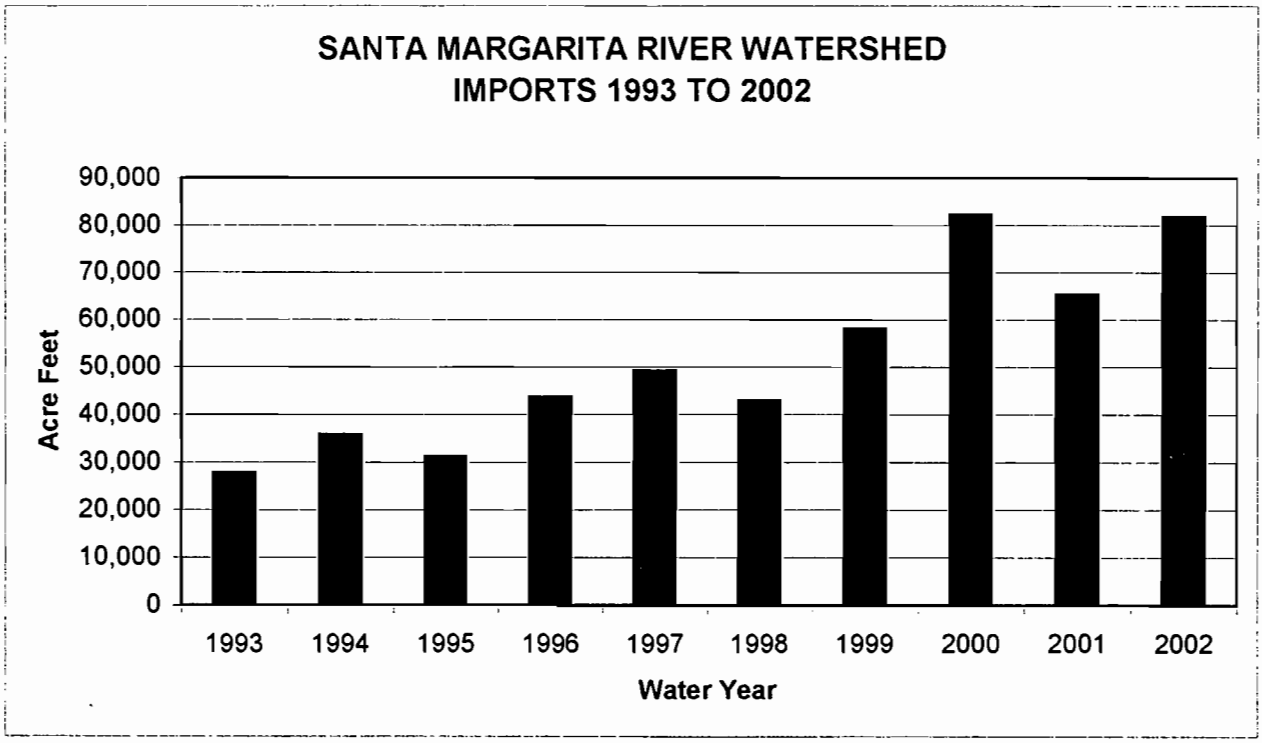


Figure 1.2



Section 7 - Total imported supplies plus local production totaled 124,525 acre feet compared to 108,134 reported in 2000-2001. Of that quantity, 57,399 acre feet were used for agriculture; 6,706 acre feet were used for commercial purposes; and 49,213 acre feet were used for domestic purposes; 715 acre feet were discharged to Murrieta and Temecula Creeks; 3,701 acre feet of fresh water were exported; and 1,454 acre feet were recharged by Rancho California WD and remain in storage. The overall system loss was 5,337 acre feet. System gain or loss is the result of many factors including errors in measurement, differences between periods of use and periods of production, leakage and unmeasured uses.

Total annual production for the period 1993-2002 is shown on Figure 1.3

Section 8 – A number of unauthorized water use issues raised by the United States were settled with the completion of a Cooperative Water Resource Management Agreement between the United States on behalf of Camp Pendleton, and Rancho California Water District.

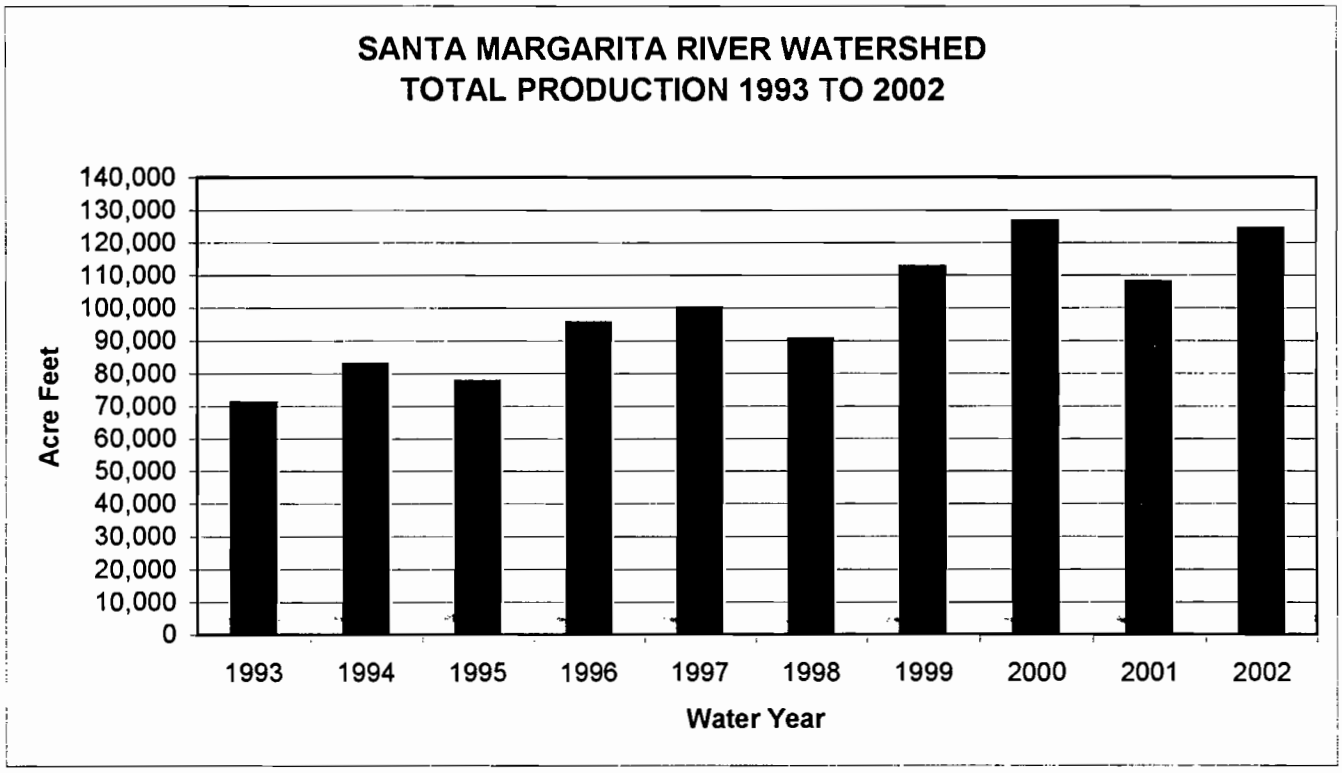
Section 9 - Threats to water supply include high nitrate levels in Rainbow Creek and Anza Valley in past years, potential overdraft conditions in the Murrieta-Temecula and Anza groundwater basins, and salt balance issues in the upper Watershed.

Section 10 – Surface water monitoring was conducted by Rancho California WD as part of its 2 MGD Demonstration Program, and by the U. S. Geological Survey (U.S.G.S.) at two water quality stations on the Santa Margarita River. Total dissolved solids concentrations were generally in the 700 to 1,000 mg/l range, while the maximum nitrate concentration was 3.2 mg/l as N.

Groundwater from wells was sampled by Camp Pendleton, Murrieta County Water District, Rancho California WD, and the U.S.G.S. on Indian Reservations during 2001-2002, with no nitrate concentrations exceeding the drinking water standard of 45 mg/l as nitrate (or 10 mg/l as N). The Basin Plan objective for total dissolved solids of 750 mg/l was exceeded in seven wells at Camp Pendleton.

Section 11 - The Cooperative Water Resource Management Agreement between Camp Pendleton and Rancho California Water District was approved by the District Court on August 20, 2002.

Figure 1.3



Section 12 - Projected Watermaster tasks for the next five years are listed.

Section 13 - A total Watermaster budget of $317,375 is proposed for the 2003-2004 Water Year. This budget includes $172,700 for the Watermaster Office and $144,675 for operation of gaging stations by the U.S.G.S.

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. A 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 appointing Order described the Watermaster's Powers and Duties as well as procedures for funding and operating the Watermaster's Office. Also in 1989, the Court appointed a Steering Committee that at the conclusion of 2001-2002 was comprised of representatives from the United States, Eastern Municipal Water District, Fallbrook Public Utility District, Metropolitan Water District of Southern California, Pechanga Tribe, and Rancho California Water District. The purposes of the Steering Committee are to assist the Court, to facilitate litigation, and to assist the Watermaster.

2.2 Authority

Section II of the appointing Order 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, although most of the data presented are based on measurements. Estimates by the Watermaster are so noted.

WATERMASTER
SANTA MARGARITA RIVER WATERSHED

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. During Water Year 2001-2002 the U. S. Geological Survey (U.S.G.S.) operated 13 stations under an agreement with the Watermaster. These include three stations where Riverside County Flood Control District shares the local costs with the Watermaster. In addition to stream flows, the U.S.G.S. also measures water elevation at Vail Lake.

The U.S.G.S. also operates several stations in the watershed under contract with Camp Pendleton. These include stream gaging stations on DeLuz Creek, Fallbrook Creek and on the outlet channel and spillway for Lake O'Neill. The U.S.G.S. also operates a tidal water level recorder on the Santa Margarita River at its mouth.

Monthly flows for stations in Water Year 2001-2002 are shown on Table 3.2. Those flows consist of U.S.G.S. discharge determinations available at the time this report is published. Official U.S.G.S. discharges for 2001-2002 are published by the U.S.G.S. in its annual Water Resources Data report.

In considering the historical record of flow at these stations, it should be recognized that the long term averages include variations in watershed conditions such as level of development, groundwater production, return flows, impoundments and vegetative use as well as hydrologic conditions, changes in gaging station locations and other factors. Descriptions of the various historical locations of gaging stations may be found in the publication, *Water Resources Data - California*, which is published annually by the U.S.G.S. In addition, records of stream flow at the stations operated by the U.S.G.S. may be found on the Internet at *http://www.usgs.gov*.

TABLE 3.1

SANTA MARGARITA RIVER WATERSHED
STREAM GAGING STATIONS

2001-2002

STATION NAME	STATION NO.	AREA SQ MI	RECORDED BY	PERIOD OF RECORD
Temecula Creek Near Aguanga	11042400	131	USGS	8/57 –
Wilson Creek Above Vail Lake	11042490	122	USGS	10/89 – 10/94
Temecula Creek At Vail Dam	11042520	320	USGS	2/23 – 10/77
Vail Lake at Temecula (Reservoir Storage)	11042510	320	USGS	10/48 –
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	90.1	USGS	10/87 –
Murrieta Creek At Tenaja Road	11042700	30	USGS	10/97 –
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	21.1	USGS	9/89 –
Santa Margarita River At FPUD Sump *1/*	11044300	620	USGS	10/24 – 9/80 – 9/89 –
Santa Margarita River Tributary Near Fallbrook	11044600	0.52	USGS	10/61 – 9/65
DeLuz Creek Near DeLuz	11044800	33	USGS	10/92 –
DeLuz Creek Near Fallbrook *2/*	11044900	47.5	USGS/ USMC	2/51 – 77 – 9/89-9/90 – 4/02 –
Santa Margarita River Near DeLuz Station	11045000	705	USGS	10/24 - 9/26 –
Fallbrook Creek *3/* Near Fallbrook	11045300	6.97	USGS/ USMC	10/64 – 9/76 – 12/88 –
Santa Margarita River At Ysidora *4/*	11046000	723	USGS	3/23 –

WATER YEAR ENDING 1920 1930 1940 1950 1960 1970 1980 1990 2000

1/ Period of record includes measurements for Santa Margarita near Fallbrook (#11044500) for period October 1924 to September 1980

2/ Recorded by USMC, Camp Pendleton October 1966 to 1977

3/ Recorded by USMC, Camp Pendleton prior to October 1993

4/ Station temporarily operated as SMR at USMC Diversion Dam near Ysidora #11045050 from February 26, 1999 to September 27, 2001

TABLE 3.2

SANTA MARGARITA RIVER WATERSHED

MEASURED SURFACE WATER FLOW

2001-2002

Quantities in Acre Feet

GAGING STATION	DRAINAGE AREA SQ MI	MONTH OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	WATER YEAR TOTAL	ANNUAL AVERAGE THRU 2001	YEARS OF RECORD THRU 2001
Temecula Creek Near Aguanga	131	39	51	77	100	85	92	68	49	29	19	15	17	641	5,890	44
Pechanga Creek Near Temecula	13.8	0	19	3	0	0	0	0	0	0	0	0	0	22	652	14
Warm Springs Creek Near Murrieta	55.4	0	30	4	1	1	1	1	0	0	1	0	0	39	3,090	14
Santa Gertrudis Creek Near Temecula	90.2	0	39	8	0	2	7	6	0	0	0	7	0	69	2,910	14
Murrieta Creek At Tenaja Road	30	0	0	0	0	1	0	0	0	0	0	0	0	1		4
Murrieta Creek At Temecula	222	174	520	320	266	199	225	189	206	195	196	194	210	2,894	9,476	77
Santa Margarita River Near Temecula	588	220	672	369	286	240	249	209	225	215	219	215	231	3,350	14,115 20,390	53 (1949-2001) 26 (1923-48)
Rainbow Creek Near Fallbrook	10.3	2	19	19	17	12	11	6	5	2	2	2	1	98	2,850	12
Sandia Creek Near Fallbrook	21.1	141	262	276	228	204	197	184	142	101	81	87	85	1,988	7,220	12
Santa Margarita River At FPUD Sump	620	231	741	410	426	339	294	290	335	176	224	205	118	3,789	33,150	12
DeLuz Creek Near DeLuz	33	0	88	59	42	33	39	15	0	0	0	0	0	276	11,610	9 (1993-2001)
DeLuz Creek Near Fallbrook	47.5	Station Resumed Operation in April						0	0	0	0	0	0	0	3,776	27 (1989-90) (1951-77)
Santa Margarita River At Ysidora	723	102	740	1,360	455	540	740	242	229	73	0	0	0	4,481	28,215 * 31,390	53 (1949-2001) 26 (1923-48)
Fallbrook Creek Near Fallbrook	6.97	0	4	27	26	21	20	20	9	0	0	0	0	127	1,390 1,462 **	13 (1989-2001) 12 (1965-76)

* Includes record of two years at Santa Margarita River at USMC Diversion Dam near Ysidora station

** Includes wastewater flows

N/A - Not Applicable

Total flows at four long-term stations for Water Years 2000-2001 and 2001-2002 are compared with their averages in the tabulation below. Average flows for the Santa Margarita River stations near Temecula and near Ysidora are shown for two periods: before and after Vail Dam was constructed (1923 to 1948, and 1949 to 2001).

	TOTAL FLOW		AVERAGE FLOW
	2000-2001 Acre Feet	2001-2002 Acre Feet	Through 2001 Acre Feet
Temecula Creek Near Aguanga	1,440	641	5,890 (1957-2001)
Murrieta Creek At Temecula	6,480	2,894	9,476 (1925-2001)
Santa Margarita River Near Temecula	8,630	3,350	14,115 (1949-2001) 20,390 (1923-1948)
Santa Margarita River Near Ysidora (various locations)	10,350	4,481	28,215 (1949-2001) 31,390 (1923-1948)

The foregoing tabulation indicates that, flows in 2000-2001 and 2001-2002 were much lower than the long-term averages. In 2001-2002 annual flows at long-term stations ranged from 11% of the long-term average at the Temecula Creek near Aguanga station to 31% of the long-term average at the Murrieta Creek at Temecula station.

Monthly flows shown in Table 3.2 consist primarily of naturally occurring surface runoff, including return flows, except for Rancho California WD discharges into Temecula and Murrieta Creeks. A portion of the Rancho California WD discharges are pursuant to Section Eleventh of the 1940 Stipulated Judgment which requires maintenance of three cubic feet per second (cfs) flow at the Santa Margarita River near Temecula station

between May 1 and October 31 of each year. Total monthly discharges and average daily flows at that station for October 2001 and May through September 2002 are shown below:

Month	Monthly Discharge Acre Feet	Average Daily Flow CFS
October 2001	220	3.6
May 2002	225	3.7
June 2002	215	3.6
July 2002	219	3.6
August 2002	215	3.5
September 2002	231	3.9
TOTAL	1,325	3.7

During 2001-2002, Rancho California WD released 715 acre feet into Murrieta and Temecula Creeks of which 596 acre feet were released during October 2001, and between May 1 and September 30, 2002. Of the 596 acre feet released in October 2001 and May through September 2002, 49 acre feet were from wells and 547 acre feet were from the System River Meter. The System River Meter refers to discharges directly from Rancho California WD's distribution system into Murrieta Creek at a location just upstream from the Murrieta Creek gaging station.

Rancho California WD also discharged 2,180 acre feet of treated wastewater into Murrieta Creek at a point about five miles upstream from the Murrieta Creek at Temecula gaging station. That quantity was released at a relatively uniform rate of 6AF/day (2MGD) throughout the year.

3.2 Surface Water Diversions

Surface diversions to surface water storage and groundwater storage during 2000-2001 and 2001-2002 are shown in Table 3.3. In general, diversions to surface storage at Vail Lake and Lake O'Neill are computed as being equal to inflow less spill, however, diversion to surface storage at Vail Lake excludes inflow during the period from May 1 through October 31 when Permit 7032 does not allow such diversions. Inflow to Vail is calculated as the sum of evaporation, spill, releases and change of storage. Inflow into Vail Lake during the period when diversions are not permitted is released and not credited to groundwater storage. Representatives of the United States do not agree with this method of calculation.

Direct surface diversions for 2001-2002 are shown in Table 3.4. The use is primarily irrigation although the diversions on the Pechanga Indian Reservation are into the domestic water system. Estimated consumptive uses, losses and returns are also shown.

TABLE 3.3

SANTA MARGARITA RIVER WATERSHED
SURFACE WATER DIVERSIONS TO STORAGE
2001-2002
Quantities in Acre Feet

Surface Water Storage

	Vail Lake		Lake O'Neill	
	2000-2001	2001-2002	2000-2001	2001-2002
Storage end of prior year	21,170	20,200	578	918
Inflow - Total	2,559	1,215	1,508 [1]	248 [2]
Inflow to be Bypassed	429	314	0	0
Spill	0	0	73	0
Diversions to Surface Storage	2,130 [3]	901 [3]	1,435 [4]	248 [4]
Annual Evaporation	3,470	3,285	367	225
Releases - Total	68	0	0	555
Release to GW Storage	(361) [5]	(314) [5]	339	555
Apparent Seepage to GW	0	0	389 [6]	251 [6]
Change of Storage	(979)	(2,070)	340	(783)
Storage End of Year	20,200	18,130	918	135
Groundwater Storage				
Recharge Release from Storage Facility	0	0	0	0
Direct Recharge	0	0	4,350	222

[1] 743 AF diverted from the Santa Margarita River and 765 AF estimated inflow from Fallbrook Creek
[2] 73 AF diverted from the Santa Margarita River and 175 AF estimated inflow from Fallbrook Creek
[3] Inflow less Spill less Inflow (Oct 1 to Oct 31 and May 1 to Sept 30)
[4] Inflow less Spill
[5] Total Release less Inflow to be bypassed
[6] Includes seepage losses, leakage through flashboards and unaccounted for water

TABLE 3.4

SANTA MARGARITA RIVER WATERSHED
SURFACE WATER DIVERSIONS TO USE
2001-2002
Quantities in Acre Feet

	Surface Diversions	Consumptive Use[1]	Losses[2]	Returns[3]
Blue Bird Ranch	31	21	3	7
Chambers	3	2	0.3	0.7
Cal June, Inc.	380	256	38	86
Strange	250	169	25	56
Agri-Empire, Inc. Kohler Canyon	55	37	5	13
Papac	38	25	4	9
Sage Ranch Nursery	100	68	10	22
Daily Family Trust	7	5	1	1
Pechanga Tribe	4	3	0.4	0.6
San Diego State University Foundation	45	31	4	10
TOTAL	913	617	91	205

1 Consumptive use equals 75% of Diversions less Losses
2 Losses equal 10% of Diversions
3 Returns equal 25% of Diversions less Losses

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, 2001, and September 30, 2002. Total Santa Margarita River stream system water in storage at the end of Water Year 2001-2002 totaled 18,265 acre feet, compared to 21,118 acre feet at the end of the previous year. Imported water in storage in Lake Skinner and Diamond Valley Lake, both operated by Metropolitan Water District of Southern California (MWD), is also shown on Table 3.5. Imported water is not under Court jurisdiction.

TABLE 3.5

SANTA MARGARITA RIVER WATERSHED
WATER IN STORAGE
2001-2002
Quantities in Acre Feet

Santa Margarita River Storage	Total Capacity	Water in Storage 9/30/2001	Water in Storage 9/30/2002
Dunn Ranch Dam	90	0	0
Upper Chihuahua Creek Reservoir	± 47	0	0
Vail Lake	49,370	20,200	18,130
Lake O'Neill	1,200	918	135
Subtotal	50,707	21,118	18,265
Imported Water Storage			
Lake Skinner	44,000	39,655	42,692
Diamond Valley Lake	800,000	569,317	729,388
TOTAL STORAGE	894,707	630,090	790,345

WATERMASTER
SANTA MARGARITA RIVER WATERSHED

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 has identified two basic types of subsurface water in its interlocutory judgments. One type is vagrant, local, percolating waters that 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.

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 exposed along streams and in valleys. Older alluvium may be found underneath younger alluvium and is not limited to areas along stream channels. Older alluvium may or may not be exposed at ground surface. The use of subsurface water found in younger and older alluvium is generally under the continuing jurisdiction of the Court and is reported upon in this report.

4.2 Extractions

Production of Santa Margarita River water 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. Recovery of imported water that has been directly recharged is not included in Table 4.1. Substantial water users include water purveyors as well as private irrigators who irrigate eight acres or more or use an equivalent quantity of water.

In 2001-2002, production by purveyors totaled 34,295 acre feet, compared to 35,704 acre feet in 2000-2001. Monthly quantities are shown in Appendix A and annual production for water years between 1966 and 2002 is shown in Appendix B.

The quantities of subsurface extractions by private irrigators are based on the irrigated acreage and the crop type. These quantities are reported in Appendix C to total 7,444 acre feet in 2001-2002. Of the subsurface extractions, 75 percent is estimated to have been consumptively used and 25 percent to have been return flow. Return flow is that portion of the total deliveries that is not consumed. Although return flows average about 25 percent, such flows are affected with the type of use (domestic, commercial and irrigation), the type of irrigation application (drip, micro-sprinkler, furrow), and exports from watersheds.

TABLE 4.1

SANTA MARGARITA RIVER WATERSHED

SANTA MARGARITA RIVER WATER PRODUCTION BY SUBSTANTIAL USERS

2001-2002

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
Wilson Creek	407	1,065 [2/]	2,504	2,911	0	2,911	2,183	728
Above Aguanga GWA	*(Lake Riverside,*							
Includes Anza Valley	*(Anza MWC. Cahuilla)*							
Temecula Creek	10	377	1,383	1,393	93	1,486	1,108	378
Above Aguanga GWA	*(Butterfield Oaks MHP)*							
Aguanga GWA	308	422	1,243	1,551	250	1,801	1,332	469
	(Outdoor Resorts)							
	(Jojoba Hills)							
Upper Murrieta Creek	0	0	0	0	0	0	0	0
(Warm Springs Creek above 7S/3W-14)								
Lower Murrieta Creek	0	410	43	43	100	143	100	43
(Santa Gertrudis/Tucalota Creek above 7S/2W-18)								
Murrieta-Temecula GWA	27,117	1,386	1,676	28,793	4	28,797	21,597	7,200
	(RCWD. MCWD.							
	EMWD. Pechanga and Hawthorn)							
Santa Margarita River Below the Gorge								
Deluz Creek	0	243	592	592	41	633	472	161
Sandia Creek	0	65	0	0	380	380	257	124
Rainbow Creek	0	0	0	0	0	0	0	0
Santa Margarita River	6,453	20	3	6,456	45	6,501	1,529	3,221
	(USMC)							
TOTAL	**34,295**	**3,988**	**7,444**	**41,739**	**913** [3/]	**42,652**	**28,577**	**12,324**

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 1,751 acre feet is excluded and return flows include measured wastewater returns

2/ Includes lands overlying deep aquifer in Anza Valley

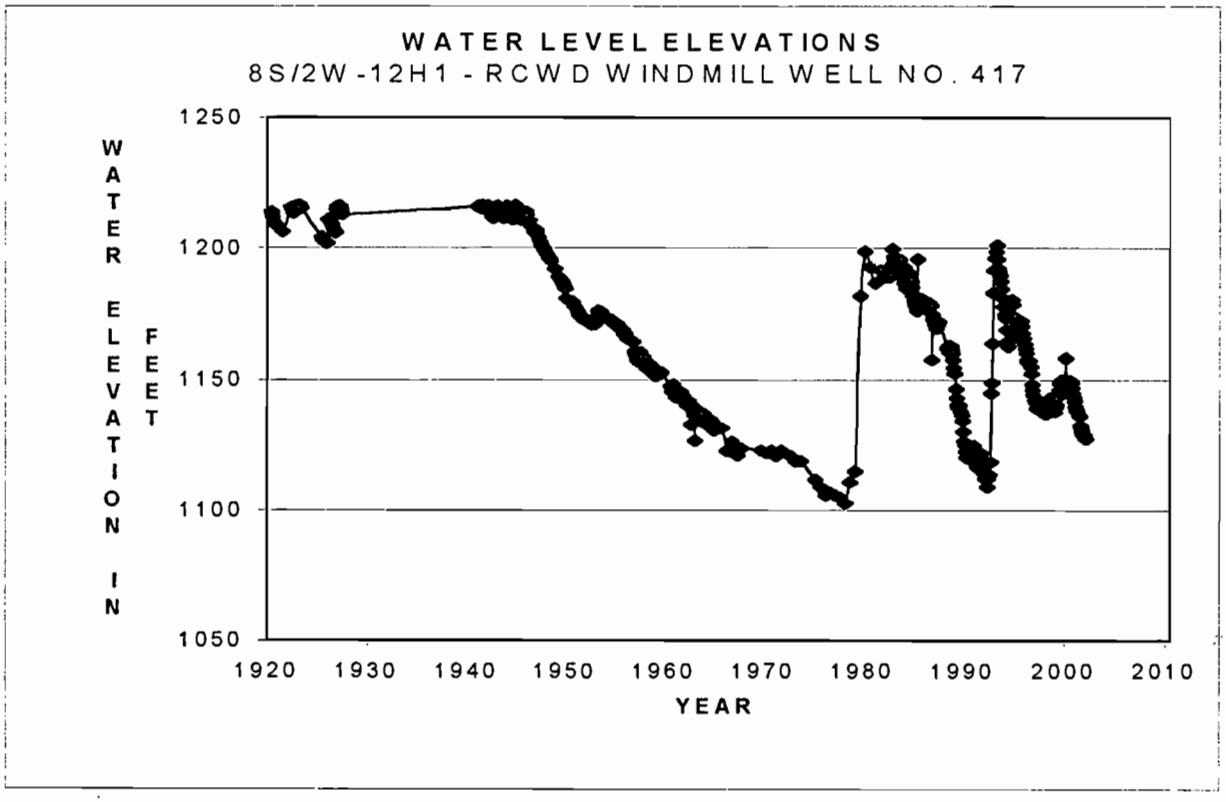
3/ Includes surface diversion for irrigation, commercial and domestic use.

Total production of Santa Margarita River water, surface diversions and groundwater production by water purveyors and private irrigators are listed on Table 4.1.

4.3 Water Levels

Water levels in selected wells in the Watershed are measured periodically by various entities. Historical water levels in five wells at various locations in the Watershed are shown in this report on Figures 4.1, 4.2, 4.3, 4.4 and 4.5. Following the recent series of dry years water levels in many wells are in the lower portion of the historical range. 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 recoveries during the wet years in 1980 and 1993, and the effect of relatively dry years after 1980 and after 1993. Water levels declined 12.3 feet in 2001-2002. It should be noted that the Windmill Well is located in Pauba Valley about 1.5 miles downslope from the Valle de los Caballos (VDC) recharge area, where releases from Vail Lake as well as imported water are recharged. In 2001-2002, 16,265 acre feet of imported water were recharged in the VDC of which 91 percent was recovered in the same year.

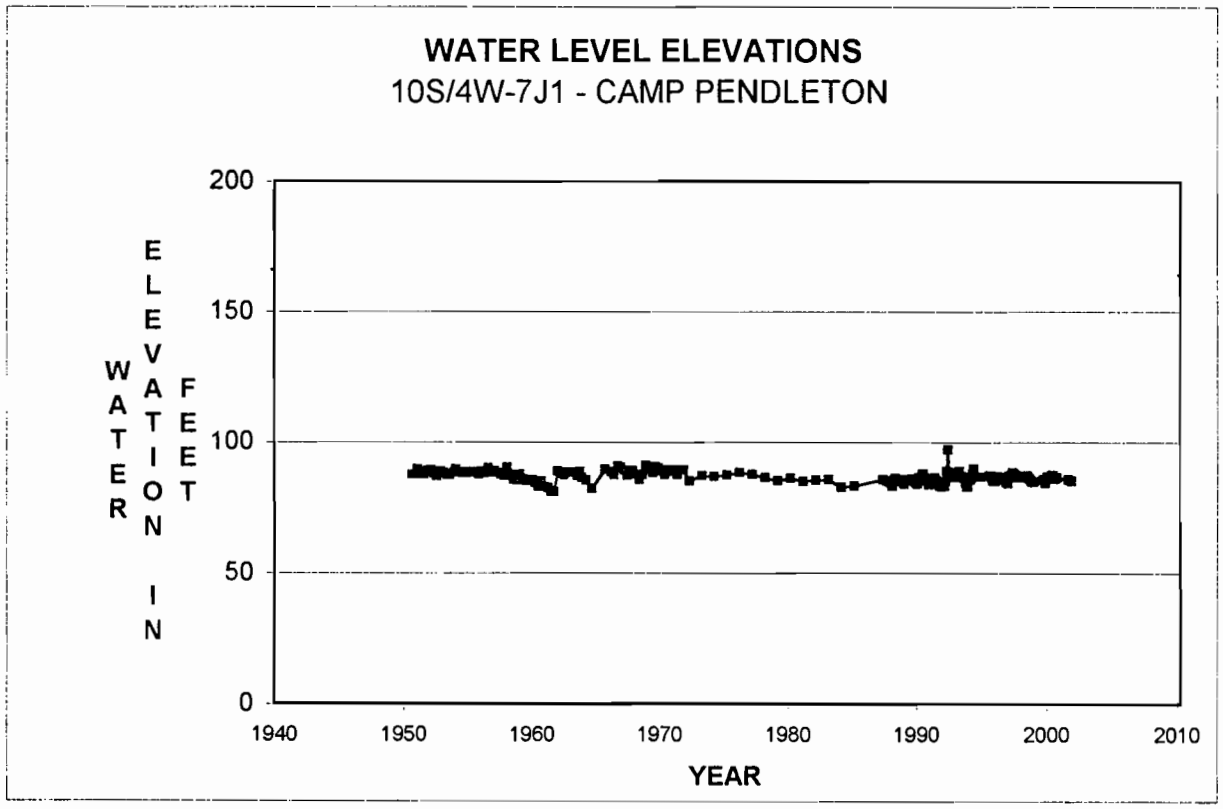
FIGURE 4.1



Collar El. 1216.7 Feet; Depth 515 Feet; Drilled in Alluvium
Ref: RCWD reports (1920-2002)

Figure 4.2 shows water levels at Camp Pendleton in Well No. 10S/4W-7J1, a monitoring well located in the Upper Sub-basin. Fluctuations in recent years illustrate recharge during the winter months and drawdown each summer, with the water levels generally between 82 and 90 feet in elevation. Water levels in Well 7J1 declined 1.2 feet between the fall of 2001 and the fall of 2002.

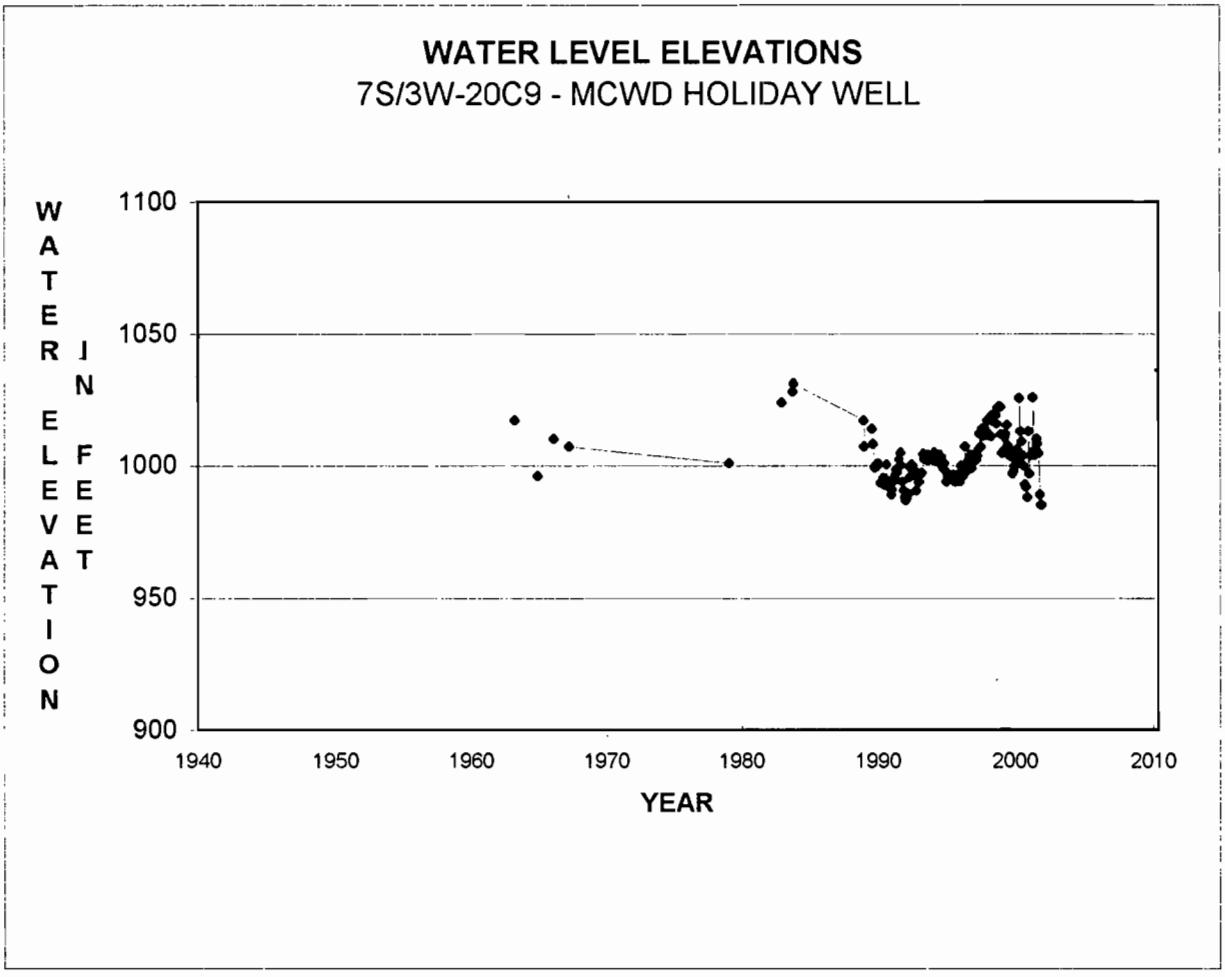
FIGURE 4.2



Ground El. 93 Feet; Depth 138.8 Feet; Perf. Unknown; Drilled in Alluvium
Camp Pendleton Records (1950-72) (1988-2002); Leeds Hill Study (1973-85) Dates Estimated

Figure 4.3 shows water levels from production Well No. 7S/3W-20C9 (Holiday Well) in the Murrieta County Water District service area. Water levels in this well dropped 28 feet since the fall of 2001. Water levels in the Lynch Well, 7S/3W-17R2, which serves as a monitoring well and had no production in 2001-2002, remained the same.

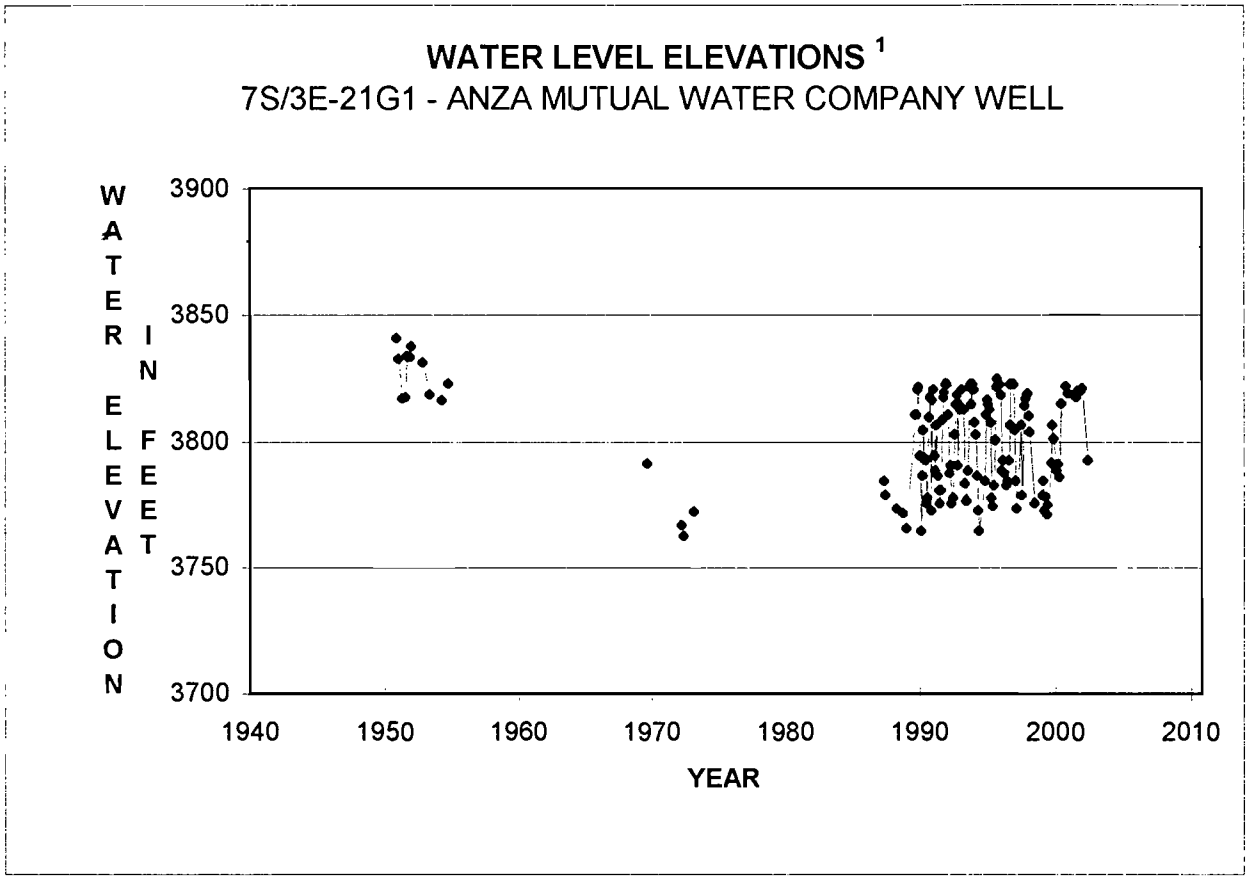
FIGURE 4.3



Ground El. 1090 Feet; Depth 307 Feet; Perf. 60 - 307 Feet
Murrieta County Water District Records

Figure 4.4 shows water levels for Well No. 7S/3E-21G1, Anza Mutual Water Company's Well No. 1, a production well located in the Anza Valley. Water levels in this well declined 26 feet this year. As may be noted from Figure 4.4, recent measurements show annual 50 foot fluctuations in groundwater levels at this well, partly in response to the operation of nearby irrigation wells. Current levels are within the historical range.

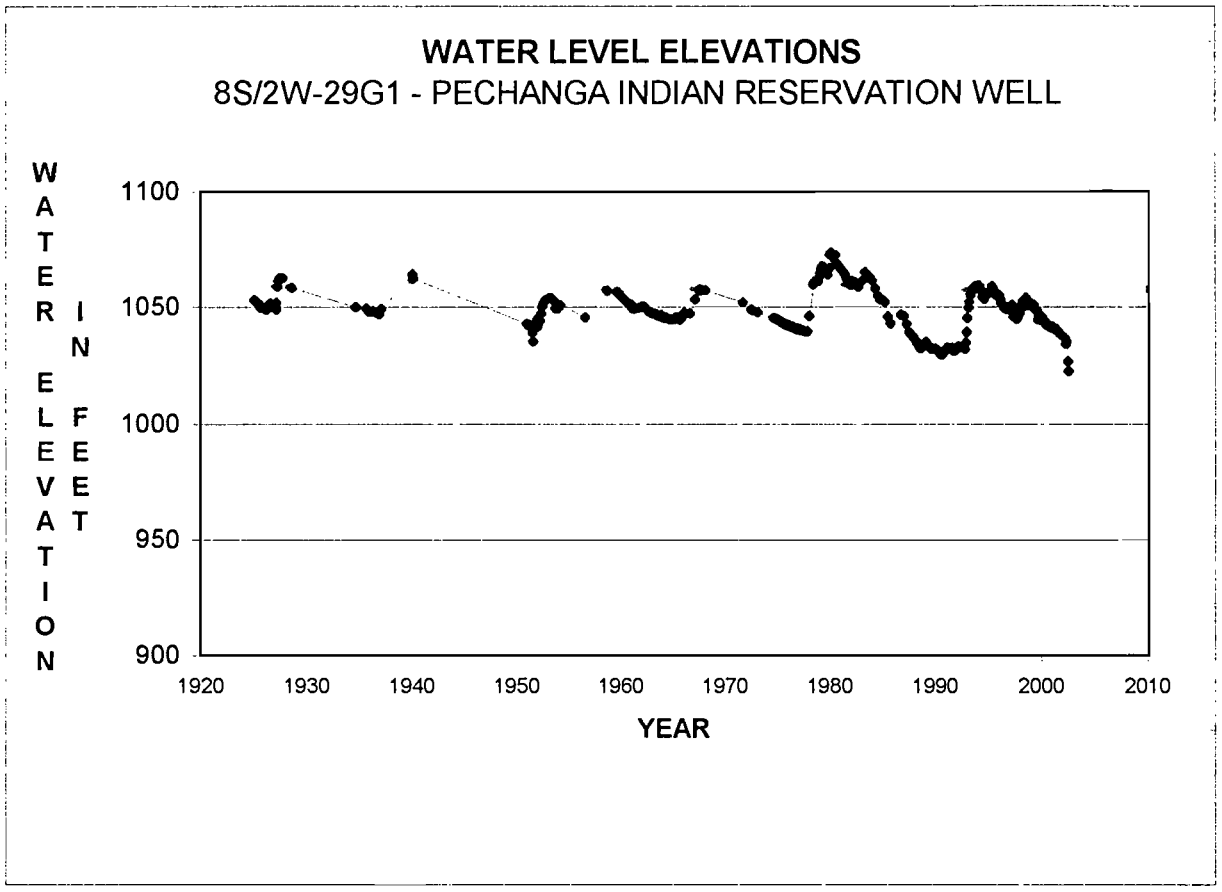
FIGURE 4.4



[1] Static water levels plotted after April 1999
Ground El. 3862.6 Feet; Depth 260 Feet; Perf. 20 - 260 Feet; Drilled in Alluvium
Anza Mutual Water Co. Well No. 1 (1987-2002); DWR Bulletin 91-22 (1950-73)

Figure 4.5 shows water levels at Well No. 8S/2W-29G1, located in Wolf Valley on the Kelsey Tract of the Pechanga Indian Reservation. The well is not used for water production and its depth as measured in 1972 was 159 feet. Water levels collected since 1925 reflect unconfined groundwater levels. As shown on Figure 4.5 the groundwater levels have fluctuated within a 44 foot range above and below elevation 1050 feet in response to wet years and dry periods. Water levels in this well fell 16.8 feet in 2001-2002.

FIGURE 4.5



Ground El. 1091.1 Feet; Depth 159.1 Feet
U.S. Geological Survey Records

Changes in water levels in the above noted wells between the end of the previous water year and the end of the 2002 water year are shown below:

Well	Water Elevation 2001 Feet	Water Elevation 2002 Feet	Change in Water Level Feet
RCWD 8S/2W-12H1	1139.7	1127.4	Down 12.3
USMC 10S/4W-7J1	86.2	85.0	Down 1.2
MCWD 7S/3W-20C9	1013.0	985.0	Down 28.0
Anza MWC 7S/3E-21G1	3818.6	3792.6	Down 26.0
Pechanga IR 8S/2W-29G1	1039.7	1022.9	Down 16.8

4.4. Groundwater Storage

Bulletins 118 and 118-80 prepared by the State of California Department of Water Resources describe three groundwater basins in the Santa Margarita River Watershed: Santa Margarita Valley, Temecula Valley, and Coahuila Valley. These basins are also known as the Santa Margarita Groundwater Basin, the Murrieta-Temecula Groundwater Basin, and the Anza Groundwater Basin. The quantity of storage in each of these basins is described in this section.

Santa Margarita Groundwater Basin – The Santa Margarita Groundwater Basin is located along the Santa Margarita River at Camp Pendleton and includes three sub-basins: Upper, Chappo, and Ysidora. Useable groundwater storage in place at the end of water year 2001-2002 is summarized in Table 4.2. Table 4.2 shows that the combined storage in the three sub-basins between the depths of 5 and 100 feet is 48,100 acre feet. However, much of that storage is below sea level and the useable storage capacity amounts to 28,700 acre feet.

Water levels in wells in each of the sub-basins were reported by Camp Pendleton during 2002. The unused storage below a depth of five feet is shown on the tabulation to be 2,171 acre feet, leaving a total useable quantity in storage of 26,529 acre feet. It may be noted that classification of that storage as useable is made without allowances for maintenance of riparian habitat.

TABLE 4.2

SANTA MARGARITA RIVER WATERSHED
GROUNDWATER STORAGE AT CAMP PENDLETON
2001-2002
Quantities in Acre Feet

	Sub-basin			
I. Available Storage	Upper	Chappo	Ysidora	Total
A. Total Storage [1] AF	12,500	27,000	8,600	48,100
B. Useable Storage AF	12,500	15,000 [2]	1,200 [3]	28,700
II. Unused Storage				
A. Wells used for Depth	10S/4W-7J1	10S/4W-18L1	11S/5W-11D4	
B. Depth to Water - Feet	8.0	9.3	7.3	
C. Depth below 5 Feet	3.0	4.3	2.3	
D. Average Area - Acres	838	2,550	1,060	
E. Unused Storage below 5 Feet	543	1,409	219	2,171
III. Useable Storage in Place – AF [4]	11,957	13,591	981	26,529
IV. Useable Storage in Place 2000-2001	12,173	13,938	1,062	27,173
V. Change in Storage 2001-2002	- 216	- 347	- 81	- 644

[1] Computed by U.S.G.S. as the storage between depths of 5 and 100 feet.
[2] Storage between 5 foot depth and sea level.
[3] Storage between 5 foot depth and 10 feet above sea level.
[4] Does not include stored water reserved for riparian habitat.

Note: Groundwater depths measured at the end of September 2002

Murrieta-Temecula Groundwater Basin – The Murrieta-Temecula Groundwater Basin is located along Murrieta and Temecula Creeks in the Upper Santa Margarita River Watershed. Total groundwater storage at the end of water year 2001 was computed for each of 22 hydrologic subareas that make up the Groundwater Basin. These computations were based on the areal extent of each subarea, the thickness of each of three aquifers, (younger alluvium, Pauba aquifer and Temecula aquifer), a specific yield for each aquifer, and the depth to water in each aquifer at the end of the water year. Specific yields were based on unconfined conditions for all aquifers. The total groundwater storage in the uppermost 500 feet as of September 30, 2001, was estimated at 1,340,556 acre feet.

A technically acceptable basis for determining annual changes in storage is being developed.

Anza Groundwater Basin – The Anza Groundwater Basin is located along Cahuilla Creek in the upper portion of the Santa Margarita River Watershed.

No recent groundwater levels are available for use in computing useable storage at the end of water year 2001-2002.

The most recent study that determined storage volumes was conducted by Riverside County in 1990. That study concluded that the groundwater storage of about 182,200 acre feet in 1950 had decreased to about 165,000 acre feet in 1986. The study also concluded that ". . . basin hydrogeologic features, production facilities conditions, and locations/depths of storage . . ." limited the useable portion to 40% of the groundwater storage or about 56,200 acre feet in 1986.

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 delivered by Metropolitan Water District of Southern California (MWD) 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 at the end of the water year in the major reservoirs in each system are indicated on Table 5.1. Total storage in the SWP for the last ten years is shown graphically on Figure 5.1. Similarly, total storage for the Colorado River Reservoirs for the last ten years is shown on Figure 5.2. It may be seen from Table 5.1 that during Water Year 2001-2002 water in storage in the SWP decreased from 2.65 million acre feet on September 30, 2001, to 2.46 million acre feet on September 30, 2002. Storage on September 30, 2002, corresponds to about 46 percent of the total SWP storage capacity.

Water in storage in the Colorado River system declined 8.7 million acre feet from the prior year to 37.5 million acre feet on September 30, 2002. On September 30, 2002, those reservoirs contained 58 percent of their total combined capacity.

Projections of water availability on the SWP for the coming year (2002) are prepared by the State Department of Water Resources on a monthly basis from February through May. The report dated May 1, 2003, indicates that statewide October 1 through March 1 precipitation was 110 percent of average. As of May 1, the SWP has approved delivery of 70 percent of the requests for deliveries in the year 2003.

The following entities 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
U. S. Naval Weapons Center
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

Reservoir	Total Capacity	Water in Storage - September 30 1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Oroville	3,540	2,666	1,683	2,897	2,736	2,140	2,832	2,427	1,920	1,488	1,400
San Luis (State Share)	1,060	944	394	1,067	740	462	900	592	388	516	394
Pyramid	171	156	160	168	158	163	161	155	164	162	165
Castaic	324	263	237	297	284	237	306	288	285	287 *	310
Silverwood	73	68	68	54	40	73	71	72	70	72	72
Perris	132	120	110	126	126	105	124	125	110	122	115
Total	5,300	4,217	2,652	4,609	4,084	3,180	4,394	3,659	2,937	2,647	2,456
Percent of Capacity		80%	50%	87%	77%	60%	83%	69%	55%	50%	46%

MAJOR COLORADO RIVER RESERVOIRS

Reservoir	Total Capacity	Water in Storage - September 30 1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Flaming Gorge	3,789	3,471	2,887	3,488	3,364	3,599	3,580	3,425	3,010	2,982	2,675
Blue Mesa	941	720	615	782	686	761	624	740	560	597	275
Navajo	1,709	1,625	1,400	1,556	1,203	1,543	1,380	1,558	1,357	1,409	872
Powell	27,000	18,825	17,772	22,311	21,155	22,802	22,404	22,997	20,939	19,135	14,468
Mead	28,537	21,379	19,930	20,714	21,614	23,769	25,126	24,592	22,444	19,873	17,093
Mohave	1,818	1,375	1,467	1,635	1,578	1,674	1,729	1,515	1,523	1,610	1,577
Havasu	648	579	571	588	597	580	565	584	566	567	565
Total	64,442	47,974	44,642	51,074	50,197	54,728	55,408	55,411	50,399	46,173	37,525
Percent of Capacity		74%	69%	79%	78%	85%	86%	86%	78%	72%	58%

* - Revised

FIGURE 5.1

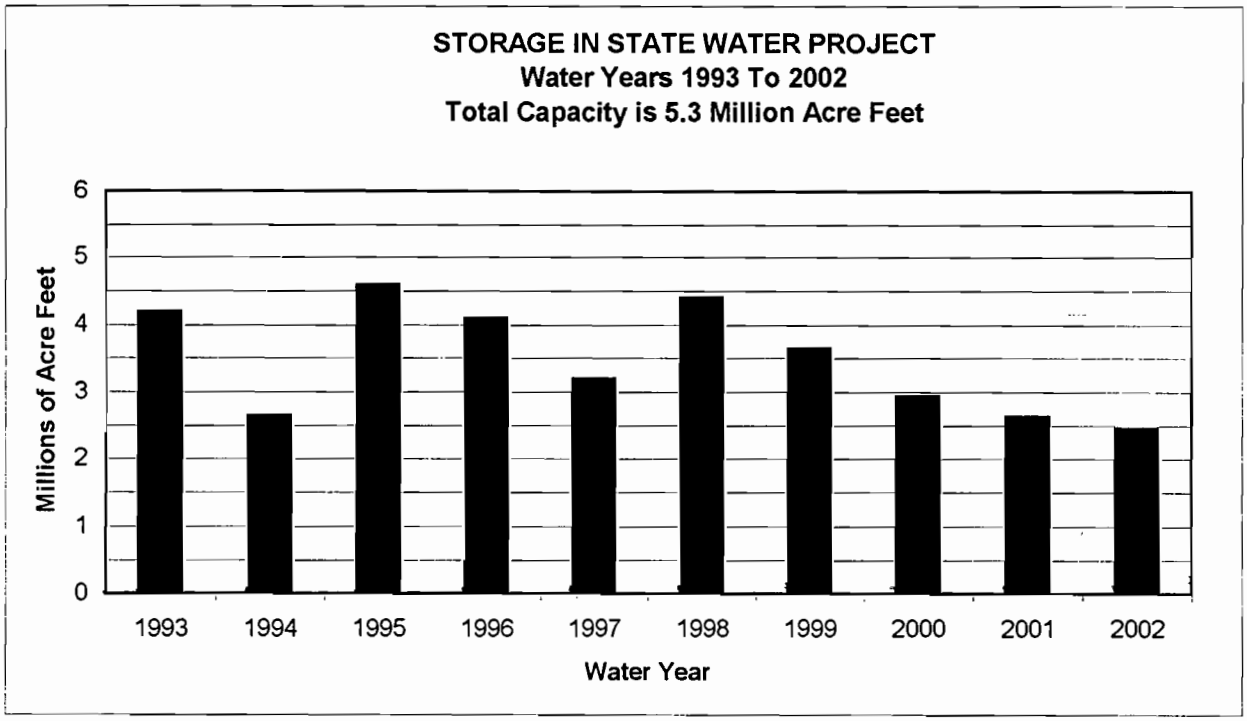
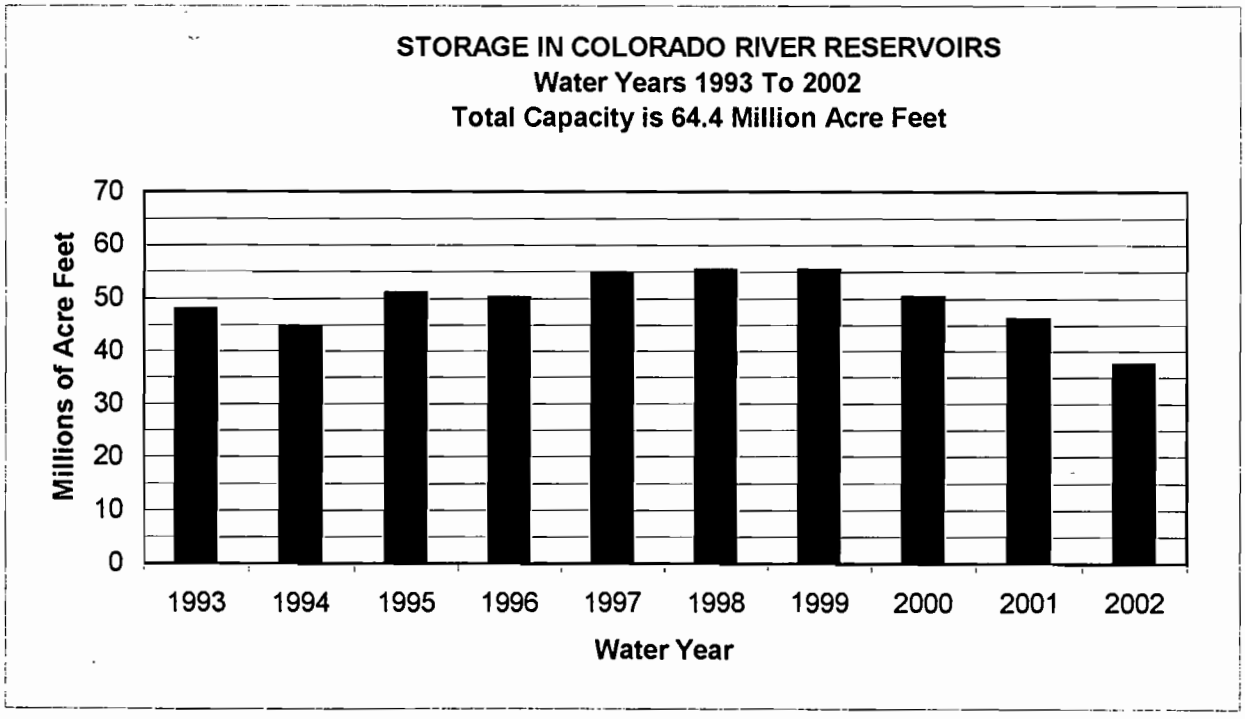


FIGURE 5.2



In addition to net deliveries through member agencies, MWD, pursuant to a Court Order, delivered 569 acre feet of water for irrigation of lands in Domenigoni Valley within the Santa Margarita Watershed during 2001-2002. MWD also imported 26 acre feet for construction use and used no water for groundwater recharge.

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 that 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 that 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 and the Naval Weapons Station located on Camp Pendleton is exported by the Fallbrook Public Utility District and wastewater in the Elsinore Valley MWD is exported by that district.

Eastern MWD uses a 24-inch pipeline along Winchester Road to transport wastewater from the Temecula Valley Regional Water Reclamation Facility to areas within the Watershed for reuse as well as for export of up to 10 MGD from the Watershed. A total of 5,325 acre feet of treated wastewater were exported by Eastern MWD in 2001-2002.

The following paragraphs of this report describe imports and exports during Water Year 2001-2002 and during the 1966-2002 period. There is also discussion of MWD's Lake Skinner and Diamond Valley Lake operations.

5.2 Water Year 2001-2002

During 2001-2002, 81,873 acre feet of water were imported and distributed in the Santa Margarita River Watershed by eight purveyors. This compares with 65,386 acre feet in 2000-2001 and represents a 25.2 percent increase. This large increase is related to the critically dry year that minimized availability of local supplies and lack of rainfall that led to high demands for outdoor use. Water quantities imported into and exported from the Santa Margarita River Watershed for months during Water Year 2001-2002 are listed on Table 5.2 .

TABLE 5.2

SANTA MARGARITA RIVER WATERSHED

IMPORTS/EXPORTS

2001-2002

Quantities in Acre Feet

	IMPORTS									EXPORTS							
										CAMP PENDLETON							
YEAR MONTH	EASTERN MWD	ELSINORE VALLEY MWD	FALLBROOK PUD	MWD 1/	RAINBOW MWD	RANCHO CAL WD	U.S. NAVAL WS	WESTERN MWD 2/	TOTAL IMPORTS	EXPORTS	WASTEWATER RETURNS	NET EXPORT	U.S. NAVAL WS	EASTERN MWD	ELSINORE VALLEY MWD	FALLBROOK PUD	TOTAL EXPORTS
2001																	
OCT	654	801	661	60	194	4,369	6	14	6,759	379	153	226	0.8	350	30	152	759
NOV	672	504	618	21	188	2,441	8	8	4,460	233	187	46	0.7	441	31	137	656
DEC	213	336	382	12	98	749	3	4	1,797	178	164	14	0.6	587	31	130	763
2002																	
JAN	-89	393	613	5	61	1,981	5	4	2,973	202	176	26	0.7	445	37	126	635
FEB	553	386	642	3	101	2,691	7	3	4,386	205	143	62	0.5	430	32	104	629
MAR	488	435	674	25	99	3,632	11	3	5,367	228	198	30	0.8	473	33	120	657
APR	639	641	759	36	89	3,709	6	4	5,883	258	180	78	0.7	419	30	118	646
MAY	1,044	568	953	58	103	6,108	10	4	8,848	334	156	178	0.9	463	41	119	802
JUNE	1,409	708	1,019	104	146	6,124	9	5	9,524	375	160	215	0.6	376	34	122	748
JULY	829	1,033	959	105	167	7,307	11	5	10,416	453	149	304	0.5	414	41	133	893
AUG	920	828	1,150	82	200	7,679	12	5	10,876	457	146	311	0.7	479	37	121	949
SEPT	785	963	1,150	84	230	7,358	9	6	10,585	399	138	261	0.9	448	35	113	858
TOTAL	8,117	7,596	9,580	595	1,676	54,148	97	64	81,873	3,701	1,950	1,751	9	5,325	412	1,495	8,992

1/ Metropolitan Water District direct deliveries in Domenigoni Valley

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

Water quality of the imported supplies in 2001-2002 as reflected by the average monthly total dissolved solids at the Skinner Treatment Plant effluent line from Plant No. 1 is shown on Table 5.3, together with the percent of imported water obtained from the SWP.

5.3 Water Years 1966-2002

Water quantities imported by districts into the Santa Margarita River Watershed during Water Years 1966-2002 are shown on Table 5.4. 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.

Review of the historical trend of total imports shown on Table 5.4 indicates significant year-to-year variations with relatively low imports in wet years and higher imports in dry years, combined with an underlying growth rate to serve increasing municipal water demands in the Murrieta-Temecula area.

Exports over the 1966-2002 period are also shown on Table 5.4. These include estimated water exports on Camp Pendleton less estimated wastewater returns, as well as an estimate of exports by the Fallbrook Public Utility District and the Naval Weapons Station after 1983, and Elsinore Valley MWD after 1986. Exports by Eastern MWD were initiated in 1992-1993. Exports do not include water that 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. A Memorandum of Understanding and Agreement on Operation of Lake Skinner (MOU), dated November 12, 1974, approved by the Court on January 16, 1975, 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 that requires that MWD release water from Lake Skinner into Tucalota Creek if groundwater levels in Well AV-28B fall below an elevation of 1356.64 feet. Between June and September MWD released a total of 146.40 acre feet to maintain well levels above the minimum. At the end of September 30, 2002, the well level was 1361.80 feet.

TABLE 5.3

SANTA MARGARITA RIVER WATERSHED
TOTAL DISSOLVED SOLIDS
CONCENTRATION OF IMPORTED WATER

YEAR MONTH	TOTAL DISSOLVED SOLIDS MG/L */1*		PERCENT STATE PROJECT WATER	
	2000-2001	2001-2002	2000-2001	2001-2002
OCT	453	502	28	27
NOV	457	513	29	24
DEC	473	521	31	25
JAN	480	517	31	26
FEB	498	498	24	30
MAR	503	511	25	26
APR	493	501	28	28
MAY	493	505	28	28
JUNE	494	516	27	25
JULY	496	512	25	26
AUG	512	503	21	25
SEPT	497	502	27	28

1/ As measured in the Skinner Treatment Plant Effluent line.

TABLE 5.4

SANTA MARGARITA RIVER WATERSHED

IMPORTS/EXPORTS

Quantities in Acre Feet

	IMPORTS									EXPORTS							
										------ CAMP PENDLETON ------							
YEAR	EASTERN MWD	ELSINORE VALLEY MWD	FALLBROOK PUD 1/	MWD 2/	RAINBOW MWD	RANCHO CAL WD	U.S. NAVAL WS	WESTERN MWD 3/	TOTAL IMPORTS	EXPORT	WASTEWATER RETURNS	NET EXPORT	U. S. NAVAL WS	EASTERN MWD	ELSINORE VALLEY MWD	FALLBROOK PUD	TOTAL EXPORTS
1966	1,604	N/R	3,351		1,308	0	0	24	6,287	3,251	974	2,277	0	0	0	0	2,277
1967	1,630	N/R	2,852		1,095	0	0	20	5,597	3,180	1,243	1,937	0	0	0	0	1,937
1968	1,464	N/R	3,423		1,377	0	0	27	6,291	3,368	1,214	2,154	0	0	0	0	2,154
1969	1,741	N/R	2,837		1,253	0	0 E	25	5,856	3,276	1,170	2,106	0	0	0	0	2,106
1970	1,417	N/R	3,538		1,689	0	0 E	31	6,675	3,809	1,113	2,696	0	0	0	0	2,696
1971	1,383	N/R	3,405		1,650	0	76 E	34	6,548	3,527	1,090	2,437	0	0	0	0	2,437
1972	1,470	N/R	3,916		2,037	0	115 E	34	7,572	3,543	1,168	2,375	0	0	0	0	2,375
1973	1,533	N/R	3,210		1,616	0	115 E	30	6,504	3,544	1,187	2,357	0	0	0	0	2,357
1974	1,601	N/R	3,967		2,049	0	115 E	36	7,768	3,532	1,140	2,392	0	0	0	0	2,392
1975	1,969	N/R	3,597		1,247	0	115 E	34	6,962	3,098	1,530	1,568	0	0	0	0	1,568
1976	2,493	N/R	4,627		2,239	119	115 E	35	9,628	3,619	1,497	2,122	0	0	0	0	2,122
1977	2,947	N/R	5,212		2,343	1,845	115 E	24	12,486	3,194	1,416	1,778	0	0	0	0	1,778
1978	2,551	569	5,202		2,188	5,774	115 E	26	16,425	3,071	1,283	1,788	0	0	0	0	1,788
1979	1,894	712	5,723		2,348	7,009	115 E	24	17,824	4,756	1,427	3,329	0	0	0	0	3,329
1980	1,192	696	6,404		2,489	10,126	115 E	25	21,047	3,651	1,405	2,246	0	0	0	0	2,246
1981	716	798	8,543		3,153	15,282	115 E	34	28,642	3,892	1,249	2,643	0	0	0	0	2,643
1982	1,112	678	7,079		2,460	13,378	115 E	34	24,856	3,761	1,273	2,488	0	0	0	0	2,488
1983	1,211	658	6,720		2,190	5,752	115 E	26	16,672	3,000	1,242	1,758	26 E	0	0	1,003	2,787
1984	699	816	8,506		3,068	6,716	115 E	26	19,946	3,243	1,120	2,123	26 E	0	0	1,032	3,181
1985	679	808	7,831		3,410	7,158	102	27	20,015	3,377	1,200	2,177	26 E	0	0	1,060	3,263
1986	760	882	8,585		2,945	11,174	94	34	24,474	3,326	981	2,345	16 P	0	0	1,096	3,457
1987	1,155	938	8,656		3,390	7,564	116	36	21,855	3,444	1,799	1,645	26	0	4	1,129	2,805
1988	2,047	1,032	8,033		2,985	17,854	120	36	32,108	3,457	1,872	1,585	26	0	55	1,154	2,820
1989	3,746	1,341	9,066		3,003	22,895	128	24	40,203	3,418	1,446	1,972	23	0	74	1,181	3,250
1990	5,601	2,255	10,103		3,818	22,030	145	22	43,974	2,971	1,451	1,520	27	0	114	1,271	2,932
1991	9,479	2,421	7,962		2,904	21,238	109	20	44,133	2,168	1,219	949	13	0	134	960	2,056
1992	8,593	2,190	7,893		2,277	16,931	99	25	38,008	2,426	1,548	878	7	0	140	1,083	2,108
1993	5,393	1,914	6,925		1,965	11,411	117	30	27,755	2,329	1,926	403	16	705	150	1,255	2,529
1994	7,150	3,221	7,250		1,651	16,386	73	37	35,768	2,702	1,501	1,201	5	3,159	170	1,068	5,603
1995	4,625	3,117	6,538	547	1,661	15,108	125	29	31,750	2,781	1,611	1,170	12	3,908	185	1,153	6,428
1996	4,960	4,181	7,993	1,005	1,815	23,600	100	35	43,689	3,577	1,493	2,084	5	2,993	213	1,035	6,330
1997	3,284	4,283	7,894	3,521	1,429	26,992	109	30	47,542	3,643	1,932	1,711	6	3,201	226	1,021	6,165
1998	5,117	5,100	6,382	5,023	1,601	19,584	97	31	42,935	3,742	2,073	1,669	8	4,513	247	1,482	7,919
1999	4,327	6,134	7,430	3,781	1,727	34,490	111	41	58,041	3,558	2,130	1,428	5	4,133	254	1,377	7,197
2000	7,256	7,172	9,365	712	2,217	55,409	104	42	82,277	4,072	2,115	1,957	7	3,649	279	1,634	7,526
2001	5,948	6,592	8,398	689	1,804	41,823	73	59	65,386	3,653	2,075	1,578	8	4,457	310	1,643	7,996
2002	8,117	7,596	9,580	595	1,676	54,148	97	64	81,873	3,701	1,950	1,751	9	5,325	412	1,495	8,992

1/ Includes DeLuz Heights MWD prior to 1991

2/ Metropolitan Water District direct deliveries in Domenigoni Valley

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

N/R - Not Reported

E - Estimate

P - Partial year data

The MOU also provides that all local surface inflow that 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 that is specified in the MOU. That equation is used to determine inflow and the related release for large flood events. 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 inflows and outflows 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 supplement the hydrologic equation.

During 2001-2002, there was no local runoff into Lake Skinner.

5.5 Diamond Valley Lake

Diamond Valley Lake is located in Diamond and Domenigoni Valleys within the Santa Margarita River Watershed. The Lake was created by three dams, one each at the east and west ends of Domenigoni/Diamond Valley and a saddle dam at the low point on the north rim. The East Dam diverts surface and groundwater flows from a 4.2 square mile drainage area in the Santa Margarita River Watershed, known as Goodhart Canyon, into the Santa Ana River Watershed. The West Dam intercepts existing westward surface and subsurface flows from an additional 13.19 square mile area. These intercepted flows may or may not be offset by seepage losses from the reservoir when filled.

MWD does not have a water right to store local waters in the reservoir, so a Memorandum of Understanding and Agreement on Operation of Domenigoni Valley Reservoir (now known as Diamond Valley Lake) (MOU) was developed and approved by the Court on January 19, 1995. Among other things, the MOU provides:

> The quantity and quality of surface runoff that would flow past the West Dam in the absence of the Reservoir will be determined and a like quantity of water of similar quality will be released from the Reservoir or San Diego Canal (SDC) into Warm Springs Creek.

The MOU indicates that the required releases would be determined by measuring the surface inflows into Goodhart Canyon Detention Basin. A quantity equal to 4.1 times the measured flow will be released into Warm Springs Creek.

Total required releases into Warm Springs Creek during 2001-2002 were 0.1 acre feet.

Although all surface waters within the Santa Margarita River Watershed in Domenigoni and Diamond Valley are subject to the continuing jurisdiction of the Court, groundwater contained within the younger alluvium, north of the south line of Section 9, Township 6 South, Range 2 West, SBM is not considered by the Court to be a part of the Santa Margarita River system as long as groundwater levels are below an elevation of 1400 feet. During 2001-2002 groundwater elevations in Well MO-6, which is located along the south line of Section 9, decreased from 1359.11 feet at the beginning of the water year to 1359.00 feet on September 30, 2002.

Additionally, agreements provide for MWD to mitigate the Diamond Valley Reservoir Project's potential groundwater impacts. During 2001-2002, injections into the Domenigoni Valley groundwater basin under the Agreements for Mitigation of Groundwater totaled 569 acre feet. As previously noted the groundwater in the Domenigoni Valley groundwater basin is outside this Court's jurisdiction when groundwater levels are below 1400 feet.

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 Court has stated that the issue of apportionment of water rights has not been presented to the Court, but the apportionment would be litigated by the Court if and when in the future it becomes necessary to do so.

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 that 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 Groundwater 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. In 1965, 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 exercising their overlying rights. Instead, Rancho California WD pumps groundwater and uses it throughout the District area as agent on behalf of the landowners.

Rancho California WD also pumps water as a groundwater appropriator along with Murrieta CWD and Eastern MWD.

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 that 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 Groundwater 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 Groundwater 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. A permit by the SWRCB authorizes construction of a project, sets terms for the project's completion and development of water use and may impose other conditions. After the permittee demonstrates that construction is complete, water is being put to use and the permit conditions have been met, the SWRCB can issue a license. The license remains in effect as long as the license conditions are met and the water is put to beneficial use.

Perfected 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.

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	Nyla 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	Fallbrook Public Utility District	11/28/47	Santa Margarita River	Sec. 3, 7S, 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	Pete and Dorothy Prestininzi	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

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*
W - Fish & Wildlife Protection and/or Enhancement

Storage rights shown in Table 6.1 include 185,000 acre feet of storage rights on the Santa Margarita River held by the U. S. Bureau of Reclamation (ID Nos. 11587, 12179, and 21471B) that have not been exercised. The time period during which these rights must be exercised has recently been extended by the SWRCB to December 31, 2008.

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 that 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 that were established prior to 1914. These rights continue to be used to support diversions of water from the Santa Margarita River stream system. Such rights, which are listed in the various Interlocutory Orders developed in this litigation, are shown on Table 6.2.

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.

TABLE 6.2

SANTA MARGARITA RIVER WATERSHED
PRE - 1914 APPROPRIATIVE WATER RIGHTS
Listed in Interlocutory Decrees

LISTED OWNER	CURRENT OWNER	DATE OF APPROPRIATION	SOURCE OF WATER	POINT OF DIVERSION	AMOUNT	USE
Anderson, Nina B.	Nezami, Mohammed	April 11, 1892	Fern Creek	NW 1/4 Of SE 1/4 Sec 31, T8S, R4W	32 gpm	Irrigation
Butler, Lawrence W. and Mary C.	Vanginkel, Norman Tr and Vanginkel, Deborah San Diego Gas & Electric	Sept. 23, 1896	Fern Creek	NW 1/4 Of SE 1/4 Sec 31, T8S, R4W	Capacity of 8 inch pipe	Irrigation
Wilson, Samuel M. and Hazel A.	Shirley, Robert G. and Bobbi J.	Aug. 3, 1911	DeLuz Creek	NW 1/4 Of SW 1/4 Sec 32, T8S, R4W	50 miner's inches 65 AF/Yr	Irrigation
United States	United States	1883	Santa Margarita River	Sec 5, T10S, R4W	20 cfs 1200 AF/Yr	Domestic Irrigation Stock Water

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. Small use domestic appropriations refer to uses that do not exceed direct diversions of 4,500 gallons per day or diversion by storage of 10 acre feet per year for incidental aesthetic, recreational, or fish and wildlife purposes.

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.

6.3 Fallbrook PUD Proposal to Change Point of Diversion and Place of Use

For some years, the Bureau of Reclamation has held Permit Nos. 8511, 11356, 11357, and 15000 (Application Nos. 11587, 12178, 12179, and 2147B) (see Table 6.1) for the benefit of Fallbrook PUD and the United States of America, the Department of the Navy, Marine Corps Base, Camp Pendleton, California. However in February 1999 Permit No. 11356 (Application No. 12178) was transferred back to Fallbrook PUD in order for Fallbrook to change the point of diversion to Lake Skinner. Lake Skinner is owned by Metropolitan Water District of Southern California and is presently used to store and regulate imported water.

On November 20, 2001, an Order Approving Changes in Source Point of Diversion, Place of Use and Amending the Permit (No. 11356) was approved by the Chief of the Division of Water Rights, of the State Water Resources Control Board. With the approval of the permit, Fallbrook PUD began the process of amending the Memorandum of Understanding and Agreement on Operation of Lake Skinner for approval by the Court. The permit provides for storage and diversion of up to 10,000 AF per year. Storage of local water in Lake Skinner and subsequent diversion will reduce the volume of local stormwater flow downstream of Lake Skinner during significant storm events.

WATERMASTER
SANTA MARGARITA RIVER WATERSHED

SECTION 7 - WATER PRODUCTION AND USE

7.1 General

Water production and use data were obtained from several types of substantial users including water purveyors, Indian Reservations, mobile home parks and private landowners. Private landowners who qualify as substantial water users are those who irrigate eight or more acres or who produce or use an equivalent quantity of water.

Major water purveyors who reported production and use data in 2001-2002 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
Metropolitan Water District of Southern California
Murrieta County Water District
Rainbow Municipal Water District
Rancho California Water District
U. S. Marine Corps, Camp Pendleton including U.S. Naval Weapons Station, Fallbrook Annex
Western Municipal Water District

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

In addition to the major purveyors, there are a number of smaller water systems in the Watershed. Of these, Butterfield Oaks Mobile Home Park, Jojoba Hills SKP Resort, Outdoor Resorts Rancho California, Inc. and Hawthorn Water System are substantial users.

Three Indian Reservations, the Cahuilla, Pechanga and Ramona, are noted in Interlocutory Judgment No. 41, the Judgment that deals with Water Rights on Indian Reservations in the Watershed. Estimates and/or measurements of water production and use are reported for the Cahuilla and Pechanga Indian Reservations; the Ramona Reservation has no reported water use.

A portion of a fourth Reservation, the Pauma Mission Reserve Tract of the Pauma Yuima Band of Mission Indians, is also located within the Watershed. However, these lands overlie basement complex, which waters have been found by the Court to not add to, support or contribute to the Santa Margarita River stream system.

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

The water use data collected for the 2001-2002 Water Year are summarized on Table 7.1. Total imported supplies plus local production totaled 124,525 acre feet compared to 108,134 reported in 2000-2001. Of that quantity, 57,399 acre feet were used for agriculture; 6,706 acre feet were used for commercial purposes; 49,213 acre feet were used for domestic purposes; 715 acre feet were discharged to Murrieta and Temecula Creeks; 3,701 acre feet of fresh water were exported; and 1,454 acre feet were recharged by Rancho California WD and remain in storage. The overall system loss was 5,337 acre feet. System gain or loss is the result of many factors including errors in measurement, differences between periods of use and periods of production, leakage and unmeasured uses.

Monthly production and use data for major water purveyors are attached to this report as Appendix A. Uses are listed under agricultural, ag/domestic, commercial and domestic categories. The definition of agricultural, ag/domestic, commercial and domestic uses 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 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 Water Years 1966-2002 are summarized in tables presented in Appendix B. Appendix C presents information on substantial users outside purveyor service areas.

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 and perforated in the bottom 130 feet. Production for 2001-2002 was 41.12 acre feet from Well No. 1 as shown in Appendix A, Table A-8. Well No. 2 was not in use for 2001-2002. The depth of water in Well No. 1 ranged from 41.5 feet to 70 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, SBM. Anza Mutual Water Company's wells are within the area of the deep aquifer. From the perforated intervals in the wells, it may be

TABLE 7.1

SANTA MARGARITA RIVER WATERSHED
WATER PRODUCTION AND USE
2001-2002
Quantities in Acre Feet

	PRODUCTION			USE					
	WELL	IMPORT	TOTAL	AG	COMM	DOM	LOSS	TOTAL	WATER RIGHT
WATER PURVEYORS									
Anza Mutual Water Company	41	0	41	0	0	37	4 1/	41	Appropriative
Eastern MWD	0	8,117	8,117	0	0	7,711	406	8,117	Appropriative
Elsinore Valley MWD	0	7,596	7,596	0	0	7,520	76 1/	7,596	----
Fallbrook PUD	0	9,580	9,580	5,185	665	3,371	359	9,580	Appropriative
Lake Riverside Estates	324	0	324	0	324 2/	0	0	324	Appropriative
Metropolitan Water District	0	595	595	569	26 3/	0	0	595	----
Murrieta CWD	1,679	0	1,679	230	348	1,067	34	1,679	Appropriative
Rainbow MWD	0	1,676	1,676	1,368	0	156	152	1,676	----
Rancho California WD	24,895 4/	54,148 5/	79,043	41,092 6/	5,285	26,573	6,093 7/	79,043	Various
U.S.M.C. - Camp Pendleton	6,453	0	6,453	462	------ 8/	2,061	3,930 1/ 9/	6,453	Appropriative/ Riparian
U.S. Naval Weapons Station	0	97	97	0	------ 8/	88	9 1/	97	----
Western MWD	0	64	64	0	58	0	6 1/	64	----
INDIAN RESERVATIONS									
Cahuilla	42	0	42	0	------	42	0	42	Overlying/Reserved
Pechanga	464	0	464	73	------ 8/	368	23	464	Overlying/Reserved
SMALL WATER SYSTEMS									
Butterfield Oaks	10	0	10	0	0	9	1 1/	10	Riparian/Overlying
Outdoor Resorts	216	0	216	158	0	52	6 1/	216	Overlying
Jojoba Hills SKP Resort	92	0	92	0	0	83	9 1/	92	Overlying
Hawthorn Water System	83	0	83	0	0	75	8 1/	83	Appropriative
OTHER SUBSTANTIAL USERS	8,353 10/	0	8,353	8,262	0	0	91 11/	8,353	
TOTAL	**42,652**	**81,873**	**124,525**	**57,399**	**6,706**	**49,213**	**11,207**	**124,525**	

1/ Assumes 10% system loss
2/ Recreation Use
3/ Construction use at Diamond Valley Lake
4/ 23,568 AF production from Old Alluvium and 1,327 AF of Vail Recovery
5/ Includes 37,883 AF direct use, and 16,265 direct recharge
6/ 35,747 AF Ag, and 5,345 Ag/Domestic
7/ 715 AF discharged into Murrieta and Temecula Creeks; 1,454 AF of import remaining in storage; system loss of 3,924 AF
8/ Listed with Domestic uses
9/ Includes exports of 3,701 acre feet
10/ 913 AF for surface diversion plus 7,946 AF from groundwater as shown in Appendix C
minus 42 AF on the Cahuilla Reservation and minus 464 AF on the Pechanga Reservation
11/ 10% of surface diversions

TABLE 7.2

SANTA MARGARITA RIVER WATERSHED
DEFINITIONS OF WATER USE
BY MUNICIPAL WATER PURVEYORS
2001-2002

DISTRICT	AGRICULTURAL	DOMESTIC	COMMERCIAL
EASTERN MUNICIPAL WATER DISTRICT	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 PUBLIC UTILITY DISTRICT	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, businesses, schools and hydrants
RAINBOW MUNICIPAL WATER DISTRICT	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 WATER DISTRICT	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. AG/DOM - First 1600 c.f. for each user alloted to domestic, and the balance to agriculture	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 LAKE SKINNER - Recreational use at Lake Skinner MISCELLANEOUS - Schools, fire departments, parks, government agencies DETECTOR CK. METERS - Only used when there is a fire
MURRIETA COUNTY WATER DISTRICT	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

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.

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 Rancho California WD is located in the northern part of the Watershed. Water for their service area is imported or produced locally from groundwater.

Imports, not including water wholesaled to Rancho California WD or delivered to Elsinore Valley MWD, totaled 12,777 acre feet. A portion of that import amounting to 4,954 acre feet was exported from the Santa Margarita River Watershed resulting in net import to the watershed of 8,117 acre feet. These data are shown in Appendix A.

Groundwater production for the 2001-2002 Water Year in the Santa Margarita River Watershed totaled 13 acre feet from Well 7S/3W-15N which is 345 feet deep. The well is generally perforated between the depths of 106 and 333 feet. Recent static water levels in Eastern MWD's well have varied from a depth of 102 feet in December 1987, to as low as 177 feet in January 2002. The well is located within the Murrieta-Temecula Groundwater Area where the older alluvium is at ground surface. Thus the well produces water from the older alluvium under groundwater appropriative rights.

In addition to producing fresh water, Eastern MWD also reclaims wastewater at its Temecula Valley Regional Water Reclamation Facility.

Disposition of wastewater from the Temecula Valley Regional Water Reclamation Facility (Facility) service area for Water Years 2000-2001 and 2001-2002 is shown below:

	2000-2001		2001-2002	
	Quantity	Percent	Quantity	Percent
	AF	%	AF	%
Used in Santa Margarita	4,571	51	4,843	48
Used outside Santa Margarita	3,249	36	4,863	48
Reuse	7,820	87	9,706	96
Unaccounted for Production	1,208	13	462	4
TOTAL PRODUCTION	9,028	100	10,168	100

It can be noted that the quantities of reclaimed wastewater used within the Santa Margarita River Watershed increased from 4,571 acre feet in 2000-2001 to 4,843 acre feet in 2001-2002. During the same period reuse outside the Santa Margarita River Watershed also increased from 3,249 acre feet to 4,863 acre feet. From the foregoing it may be concluded that 48 percent of the wastewater is reused in the watershed and 48 percent is used outside the watershed. Unaccounted for production decreased from a 1,208 acre feet to 462 acre feet. Unaccounted for production includes changes of storage in Winchester and Sun City storage ponds, evaporation and percolation losses, and discharges to the Santa Ana Watershed.

Because of concerns about the potential export of native Santa Margarita water, the sources of water supply to the Facility service area were determined and are shown on Table 7.3. In 2001-2002, 24 percent of the supply to the service area was groundwater. Thus, the percent of wastewater reused within the Santa Margarita Watershed exceeded the percent of groundwater in the supply, and on a proportional basis there was no export of native waters.

Estimates of water production and use for the period 1966-2002 are shown in Appendix B.

TABLE 7.3

SANTA MARGARITA RIVER WATERSHED
WATER DELIVERIES TO TEMECULA VALLEY
REGIONAL WATER RECLAMATION FACILITY SERVICE AREA

	1998		1999		2000		2001		2002	
Eastern MWD	AF	%	AF	%	AF	%	AF	%	AF	%
Deliveries to TVRWRF Service Area										
1. Groundwater	240		669		630		355		13	
2. Import 1/	5,117		4,327		7,256		5,948		8,117	
3. Total	5,357		4,996		7,886		6,303		8,130	
Rancho California WD										
Deliveries to TVRWRF Service Area										
1. Groundwater 2/	7986		7,319		7,149		7,481		6,427	
2. Import 3/	2,865		5,941		8,643		8,076		11,791	
3. Total 4/	10,851		13,260		15,792		15,557		18,218	
Total Deliveries to TVRWRF Service Area										
1. Groundwater	8,226	50.8%	7,988	43.8%	7,779	32.9%	7,836	35.8%	6,440	24.4%
2. Import	7,982	49.2%	10,268	56.2%	15,899	67.1%	14,024	64.2%	19,908	75.6%
3. Total	16,208	100.0%	18,256	100.0%	23,678	100.0%	21,860	100.0%	26,348	100.0%

1/ EMWD imports are based on discharges from EM-17.
2/ Based on ratio of groundwater to total production in Rancho Division of RCWD
3/ Based on ratio of import to total production in Rancho Division of RCWD
4/ Total RCWD deliveries in TVRWRF Service Area

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 Eastern MWD and Western MWD.

The District reports that 7,596 acre feet were imported into the portion of their service area that is inside the Santa Margarita River Watershed in 2001-2002. Also during 2001-2002, approximately 412 acre feet of wastewater were exported from that same area.

Fallbrook Public Utility District

In 2001-2002, Fallbrook PUD imported 17,422 acre feet through its contract with the San Diego County Water Authority as shown in Appendix A. Of this quantity, 2,900 acre feet were delivered to the former DeLuz Heights Water District service area that is entirely within the Santa Margarita River Watershed. Of the remaining importations it is estimated that 46 percent, or 6,680 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 9,580 acre feet in 2001-2002.

In addition to importations, the District has three wells; however, in 2001-2002, there was no pumpage from these wells. In 2001-2002 Fallbrook PUD reclaimed 1,532 acre feet of wastewater of which 28 acre feet were reused in the watershed.

Production during the period 1966 to 2002 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 2001-2002 was 324 acre feet as shown in Appendix A, Table A-8. The production well was drilled in 1962 and is located in an area of younger alluvium in the Cahuilla Groundwater 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 Groundwater Basin have correlative overlying rights to the use of the groundwater that is the basis for this production.

Metropolitan Water District of Southern California

Pursuant to a Court Order, MWD delivered 569 acre feet of imported water for irrigation of lands in Domenigoni Valley and used 26 acre feet for construction purposes during 2001-2002. MWD did not import any water for groundwater recharge. As previously noted, the groundwater in the Domenigoni Valley groundwater basin is outside this Court's jurisdiction when groundwater levels are below 1400 feet.

Murrieta County Water District

Murrieta CWD serves an area in the vicinity of the town of Murrieta. In Water Year 2001-2002, Murrieta CWD produced 1,679 acre feet of water from five wells as shown in the following tabulation and in Appendix A.

Well Designation	Well Name	2001-2002 Production Acre Feet	Casing Depth Feet	Water Depth Feet	Well Depth Feet	Perforated Interval Feet
7S/3W-20C9	Holiday	220	25	64 - 105	307	60 - 307
7S/3W-20G5	House	144	50	169 - 190	298	120 - 252
7S/3W-17R2	Lynch	0	26	30 - 45	212	172 - 212
7S/3W-18J2	North	439	50	190 - 270	650	240 - 260 500 - 640
7S/3W-20D	South	399	50	174 - 240	446	120 - 446
7S/3W-7E	Alson	477	50	123 - 270	416	106 - 416

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

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

Five of the six Murrieta CWD wells are perforated at depths of 106 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 at 60 feet ranged from 64 to 105 feet in 2001-2002. Accordingly all of Murrieta CWD well production is from the older alluvium under a groundwater appropriative right.

Production for the period between 1966 and 2002 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 of the District's service area inside the Watershed. Most of the District is in the San Luis Rey River Watershed. As shown in Appendix A, total deliveries of imported water in the Watershed in 2001-2002 amounted to 1,676 acre feet.

Total imports to the District for years between 1966 and 2002 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 49 wells in 2001-2002 and also imported water, as shown in Appendix A. Use is shown in Appendix A under the categories of agriculture, ag/domestic, commercial and domestic. In Water Year 2001-2002, well production of native water included 24,895 acre feet from the Murrieta-Temecula Groundwater Area. This quantity included 23,568 acre feet from the older alluvium, and 1,327 acre feet of recovered Vail recharge. Import supplies totaled 54,148 acre feet of which 37,883 acre feet were direct use and 16,265 acre feet were recharged. During 2001-2002, use totaled 79,043 acre feet including 35,747 acre feet by agriculture, 5,345 acre feet by ag/domestic, 5,285 acre feet by commercial, 26,573 acre feet by domestic, 715 acre feet were released into Murrieta Creek and/or Temecula Creek, 1,454 acre feet of import recharge to storage, and 3,924 acre feet of system loss.

The District reclaimed and reused 4,519 acre feet of wastewater during the year, in addition to 2,028 acre feet obtained from Eastern MWD for reuse.

In addition the District treated and discharged 2,180 acre feet of reclaimed wastewater to Murrieta Creek as part of its 2 MGD Demonstration Project.

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
4. As agent on behalf of overlying landowners

Vail Appropriation

Rancho California WD's Vail Dam appropriative rights are described in Application No. 11518 as amended on June 17, 1947, and in 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, subject to applicable limitations, 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.

No water was released from Vail during 2001-2002 for groundwater recharge. Releases from Vail for groundwater recharge for the period 1980 to 2002 are shown on Table B-6.

Water use in the Permit 7032 service area is shown on Table 7.4. This use will be compared with well production from the younger alluvium in a later section of this report.

Representatives of the United States contend that under the 1940 Stipulated Judgment storage of water in Vail Lake is limited to Rancho California Water District's share of the flood waters of the Santa Margarita River system. However, to date, the parties have not agreed on a definition of "flood waters." The Camp Pendleton/Rancho California Water District Technical Advisory Committee is considering the issue.

TABLE 7.4

SANTA MARGARITA RIVER WATERSHED
RANCHO CALIFORNIA WATER DISTRICT
PERMIT 7032 AREA WATER USE
2001-2002

Quantities in Acre Feet

MONTH YEAR	AG	COMM AG/DOM		DOM	TOTAL
2001					
OCT	214	25	76	101	416
NOV	21	34	55	91	201
DEC	7	13	37	52	109
2002					
JAN	4	10	15	35	64
FEB	9	14	30	47	100
MAR	13	17	45	63	138
APR	14	16	42	63	135
MAY	16	19	51	72	159
JUNE	70	23	91	117	301
JULY	62	38	85	108	293
AUG	103	39	111	147	400
SEPT	77	31	79	118	305
TOTAL	610	279	717	1,014	2,620

Imported Water Return Flows

During 2001-2002, Rancho California WD imported 37,883 acre feet of water for direct use compared to 23,743 acre feet in 2000-2001. Quantities of imported water delivered to the Rancho Division and the Santa Rosa Division are shown below for Water Years 2000-2001 and 2001-2002.

	Rancho Division Imports		Santa Rosa Division Imports		Total Imports	
Month	2001	2002	2001	2002	2001	2002
October	703	1,074	1,120	2,098	1,823	3,172
November	75	370	639	749	714	1,119
December	76	0	810	96	886	96
January	140	122	375	501	515	623
February	0	394	87	732	87	1,126
March	0	799	110	1,493	110	2,292
April	157	953	462	1,688	619	2,641
May	525	1,685	1,500	2,875	2,025	4,560
June	948	1,765	2,609	2,963	3,557	4,728
July	1,416	2,216	2,981	3,590	4,397	5,806
August	1,820	3,230	2,873	2,725	4,693	5,955
September	1,384	3,076	2,933	2,689	4,317	5,765
Total	7,244	15,684	16,499	22,199	23,743	37,883

Return flows for 2001-2002 based on imported water use in the Rancho Division and Santa Rosa Division are shown on Table 7.5 and on Table 7.6.

In those tables, imported water is allocated to agricultural, ag/domestic, 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 2001-2002, 64.47 percent of the supply to the Rancho Division was imported and 71.18 percent of the supply to the Santa Rosa Division was imported.

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 that do overlie the groundwater area and generate return flows from imported supplies. Data from most of these lands have been reported since December 1991.

TABLE 7.5

SANTA MARGARITA RIVER WATERSHED
RANCHO CALIFORNIA WATER DISTRICT
RETURN FLOW CREDIT
2001-2002
RANCHO DIVISION
Quantities in Acre Feet

HYDROGEOLOGIC AREAS

	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
AGRICULTURAL *									
Total Use	1,453.07	689.57	598.95	2,915.13	326.81	1,197.20	1,490.68	1,348.17	10,019.58
% Import	64.47	64.47	64.47	64.47	64.47	64.47	64.47	64.47	
Import Use	936.83	444.58	386.16	1,879.46	210.70	771.87	961.08	869.20	6,459.88
% Credit	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	
Credit	234.21	111.15	96.54	469.86	52.68	192.97	240.27	217.30	1,614.97
AG/DOMESTIC									
Total Use	638.30	53.84	0.00	21.95	627.32	44.39	526.67	145.44	2,057.91
% Import	64.47	64.47	64.47	64.47	64.47	64.47	64.47	64.47	
Import Use	411.53	34.71	0.00	14.15	404.45	28.62	339.56	93.77	1,326.79
% Credit	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	
Credit	102.88	8.68	0.00	3.54	101.11	7.16	84.89	23.44	331.70
COMMERCIAL									
Total Use	195.34	1,330.27	915.89	1,521.89	78.09	298.12	151.42	6.58	4,497.60
% Import	64.47	64.47	64.47	64.47	64.47	64.47	64.47	64.47	
Import Use	125.94	857.66	590.50	981.20	50.34	192.21	97.62	4.24	2,899.72
% Credit	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	
Credit	12.59	85.77	59.05	98.12	5.03	19.22	9.76	0.42	289.97
DOMESTIC									
Total Use	1,006.47	2,127.79	1,646.72	11,623.71	579.21	2,948.23	1,237.98	484.33	21,654.45
% Import	64.47	64.47	64.47	64.47	64.47	64.47	64.47	64.47	
Import Use	648.90	1,371.84	1,061.69	7,494.11	373.43	1,900.80	798.16	312.26	13,961.19
% Credit	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	
Credit	162.22	342.96	265.42	1,873.53	93.36	475.20	199.54	78.07	3,490.30
TOTAL USE	3,293.18	4,201.47	3,161.56	16,082.68	1,611.42	4,487.95	3,406.75	1,984.53	38,229.54
TOTAL									
Total Import Use	2,123.20	2,708.80	2,038.34	10,368.92	1,038.93	2,893.50	2,196.42	1,279.48	24,647.58
Total Credit	511.91 **	548.55	421.01	2,445.05	252.18	694.54	534.46	319.23	5,726.94
Total Credit Qyal		274.28	421.01		252.18				947.47
Total Credit Qtoal		274.28		2,445.05		694.54	534.46	319.23	4,267.56

* Includes golf course and landscape irrigation
** This credit not applied to either Qyal or Qtoal

TABLE 7.6

SANTA MARGARITA RIVER WATERSHED
RANCHO CALIFORNIA WATER DISTRICT
RETURN FLOW CREDIT
2001-2002
SANTA ROSA DIVISION
Quantities in Acre Feet

	HYDROGEOLOGIC AREAS			
	1 MURRIETA WOLF 1/2 QYAL 1/2 QTOAL	3 LOWER MESA QTOAL	8 RTS 279, 280 & 285 1/4 QYAL 3/4 QTOAL	TOTAL
AGRICULTURAL *				
Total Use	0.00	0.00	956.16	956.16
% Import	71.18	71.18	71.18	
Import Use	0.00	0.00	680.57	680.57
% Credit	25.00	25.00	25.00	
Credit	0.00	0.00	170.14	170.14
AG/DOMESTIC				
Total Use	0.00	0.00	0.00	0.00
% Import	71.18	71.18	71.18	
Import Use	0.00	0.00	0.00	0.00
% Credit	25.00	25.00	25.00	
Credit	0.00	0.00	0.00	0.00
COMMERCIAL				
Total Use	0.00	0.00	586.90	586.90
% Import	71.18	71.18	71.18	
Import Use	0.00	0.00	417.74	417.74
% Credit	10.00	10.00	10.00	
Credit	0.00	0.00	41.77	41.77
DOMESTIC				
Total Use	0.00	0.00	1,538.94	1,538.94
% Import	71.18	71.18	71.18	
Import Use	0.00	0.00	1,095.37	1,095.37
% Credit	25.00	25.00	25.00	
Credit	0.00	0.00	273.84	273.84
TOTAL USE	0.00	0.00	3,082.01	3,082.01
TOTAL				
Total Import Use	0.00	0.00	2,193.67	2,193.67
Total Credit	0.00	0.00	485.76	485.76
Total Credit Qyal	0.00		121.44	121.44
Total Credit Qtoal	0.00	0.00	364.32	364.32

* Includes golf course and landscape irrigation

The percentage of imported water that becomes return flow varies according to the use as follows:

Agricultural Use	25%
Ag/Domestic Use	25%
Commercial Use	10%
Domestic Use	25%

Based on the foregoing factors, the return flow credit for 2001-2002 is computed to be 5,726.94 acre feet for the Rancho Division and 485.76 acre feet for the Santa Rosa Division, as shown on Tables 7.5 and 7.6 respectively.

Some of the hydrogeologic 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 2001-2002 are 947.47 acre feet for the Rancho Division and 121.44 acre feet for the Santa Rosa Division, as shown on Tables 7.5 and 7.6 respectively.

Rancho California WD imported an additional 16,265 acre feet of water for groundwater recharge in 2001-2002, of which 14,811 acre feet were recovered.

Division of Local Water

During 2001-2002, Rancho California WD pumped 39,706 acre feet of groundwater. Some of this water was pumped from the younger alluvium and some from the older alluvium. The Court determined that water in both the younger alluvium and older alluvium add to, contribute to and support the Santa Margarita River stream system. The primary reason for differentiating between younger alluvium and older alluvium production is that, in California, production from the younger alluvium is generally considered to be governed by water rights that apply to the regulation of surface waters. Production from the older alluvium is generally considered to be governed by regulations that apply to groundwater.

In 1995 well logs and geophysical logs of all Rancho California WD wells were reviewed by representatives of the United States and Rancho California WD to determine the depths of the younger alluvium. There was general agreement between the parties about the depth of the younger alluvium in production wells, except for ten wells shown on Table 7.7 of the 1994-1995 report. The remaining disagreements relate to differences about the magnitude of the clay layer needed to define the base of the younger alluvium, the importance of neighboring well logs, and general concepts about the overall geologic setting.

During joint development of a groundwater model of the area it was necessary to develop estimates of the transmissivity for each aquifer. These estimates were based on pump tests. The resulting transmissivity values were then used to estimate the relative groundwater production from each aquifer. For Rancho California WD wells, the percent production estimated to originate in the younger alluvium is shown in Table 7.7.

Production from the younger alluvium and older alluvium for 2001-2002 using the percentages noted in Table 7.7 is presented in Table 7.8. It may be noted that 16,138 acre feet were pumped from the younger alluvium and 23,568 acre feet were pumped from the older alluvium in 2001-2002.

The production of 16,138 acre feet from the younger alluvium, as shown on Table 7.8 includes recovery of 1,327 acre feet of Vail recharge and 14,811 feet of import recharge. The recovered Vail recharge was used for authorized uses in the Permit 7032 service area as shown in Table 7.4. Although there were no Vail releases to groundwater storage in 2001-2002 there is sufficient unrecovered recharge from prior years to offset the use of 1,327 acre feet in 2001-2002. Rancho California WD imported 16,265 acre feet of water in 2001-2002 for direct recharge of which 14,811 acre feet were recovered leaving 1,454 acre feet as unrecovered direct recharge.

Imported water carryover to 2002-2003 includes the following:

		AF
1.	Carryover from 2000-2001	14,659
2.	Unrecovered direct recharge in 2001-2002	1,454
3.	Import Return Flow Credit for 2001-2002	1,068
4.	Total Carryover to 2002-2003	17,181

Thus, there was no unauthorized use under Permit 7032 in 2001-2002 and 17,181 acre feet of imported supplies remain available to offset younger alluvium production in future years.

TABLE 7.7

SANTA MARGARITA RIVER WATERSHED
PERCENT PRODUCTION FROM YOUNGER ALLUVIUM IN RANCHO CALIFORNIA WATER DISTRICT WELLS

RCWD WELL NO.	LOCATION TOWNSHIP/ RANGE/ SECTION	SEAL DEPTH FEET	PERFORATED INTERVAL FEET	DEPTH YOUNGER ALLUVIUM FEET	PERCENT YOUNGER ALLUVIUM %		REMARKS
106	7S/3W-26R1	55	130-210; 250-310; 340-440; 700-740; 780-980	0	0.0%	Murrieta	No. 108 Winchester, clay 0'-40'
107	7S/3W-26J1	55	60-120; 190-260; 280-300; 390-590	58	0.0%	Murrieta	No. 105 - gravel & clay 58'-84'
108	7S/3W-25E1		60-110; 190-280; 350-410; 430-450; 470-490; 530-590	55	0.0%	Murrieta	Formerly No. 109 gravel/sandy clay 55'-70'
109	8S/2W-17J1	52	70-150; 170-210	75	84.0%		Brown clay and gravel 75' to 105'
110	8S/1W-6K1	54	75-155	165	97.0%		Clay 165'-190'. Prior to 10/23/97 perf int. 70-150; 200-240; 320-380; 420-460
113	7S/2W-25H1	52	96-136; 275-462; 482-542	Shallow	0.0%		
116	8S/1W-6J	Unknown	60-120; 140-200; 220-260; 270-330; 370-390	150	94.0%		Clay 150'-170'
119	8S/2W-19J	55	170-260; 300-470		0.0%	Wolf Valley	Perforated below 170'
123	8S/1W-7B	55	100-260; 300-380; 420-500	135	65.0%		Brown Sand Clay 135'-210'
129	7S/2W-20L	Unknown	180-290; 416-480; 520-600	Shallow	0.0%	Santa Gertrudis Creek	Qyal very shallow along Santa Gertrudis Creek
132	8S/1W-7D	55	70-390; 430-500	135	82.0%		Brown Clay Streaks 135'-175'
135	7S/3W-27M10	55	70-170	50	0.0%	Murrieta Valley	Silty clay 50'-69'
141	8S/2W-11P	55	120-190; 215-235; 270-380; 430-510	104	0.0%		Silt & sand 104'-185'; Well 11L1 is 112'
144	7S/3W-27D	55	983-1123; 1143-1283; 1343-1483; 1503-1743	25	0.0%	Murrieta Valley	Sand with silty clay 25'-45'
146	7S/3W-28	50	50-190	42	0.0%	Murrieta	
152	8S/1W-5K	50	70-470; 490-540	130	90.8%		Forebay
153	8S/1W-5K3	50	50-220	170	99.0%		Forebay
157	8S/1W-5L	50	50-210	128	96.8%		Forebay
158	8S/1W-5K	50	50-210	100	96.5%		Forebay
205	7S/3W-35A	50	150-1000	10	0.0%	Santa Gertrudis/ Murrieta Valley	Sandy clay 10'-20'
210	8S/2W-12K	None	48-228	140	94.0%		Clay cobblestones 160'-167', 175'-227'
218	8S/2W-20B5	27	48-289	40	0.0%		Old 28; clay with sand layer 40'-60'; now monitoring wells 427, 428 and 429
466	8S/3W-1P2	Unknown	106-822	49	0.0%	Long Canyon	Old 219, Cantarini, hard clay 49'-60'
220	7S/3W-26Q1	34	114-450	58	0.0%		Clay 58' - 73'
467	8S/2W-12K1	Unknown	50-100; 100-140	140	100.0%		Old 221, JK, Exh. 16, Monitoring well since 1983
223	8S/2W-20C1	Unknown	48-250	60	94.0%	Wolf Valley	CAT Well; east of Wildomar Fault; nearby Exh 16 wells 17Q @62' & 17M @55' are also east of Wildomar Fault
224	8S/2W-15D	Unknown	48-250	106	68.0%		Old Well 50, clay 106'-138'
230	8S/2W-11J1	Unknown	24-31; 32.5-34; 35-40; 61-65; 70-76; 80-85; 86.5-91; 92.5-98.5	>119	100.0%		Old Well 30, depth of well is 119'
231	8S/2W-20B6	55	80-120; 150-270	35	0.0%		Old 104, P-34, Clay 20'-23'; 35'-41'; East of Wildomar Fault
232	8S/2W-11J3	51	95-135; 175-215; 235-295	135	92.0%		Old 111, 105, P-31; coarse sand & clay 135' - 155'
233	8S/2W-12K2	51	95-135; 175-215; 235-295	145	88.0%		Old 112, P32; sand and clay at 145'-
234	8S/2W-11P1	52	80-100; 120-140; 200-240; 280-320; 340-400	125	74.0%		Brown Clay at 125'; sand and clay at 125'-140'
235	8S/3W-1Q1	55	Unknown	Shallow	0.0%	Long Canyon	
240	8S/2W-11L1	Unknown	48-298	112	86.0%		Old Well No. 40; clay 112'-136'
301	7S/3W-18Q1	93	140-280; 280-520; 540-640	26	0.0%	Murrieta	Old JR1; blue clay 26'-32'

TABLE 7.8

SANTA MARGARITA RIVER WATERSHED
RANCHO CALIFORNIA WATER DISTRICT
WELL PRODUCTION FROM YOUNGER AND OLDER ALLUVIUM
2001-2002
Quantities in Acre Feet

WELL NO.	QYAL	QTOAL	TOTAL
101	0.00	132.00	132.00
102	0.00	144.00	144.00
106	0.00	758.00	758.00
108	0.00	333.00	333.00
109	321.72	61.28	383.00
110	2,087.44	64.56	2,152.00
113	0.00	668.00	668.00
118	0.00	122.00	122.00
119	0.00	790.00	790.00
120	0.00	1,295.00	1,295.00
121	0.00	431.00	431.00
122	0.00	430.00	430.00
123	293.80	158.20	452.00
124	0.00	630.00	630.00
125	0.00	442.00	442.00
126	0.00	909.00	909.00
128	0.00	1,079.00	1,079.00
129	0.00	17.00	17.00
130	0.00	641.00	641.00
131	0.00	918.00	918.00
132	250.10	54.90	305.00
133	0.00	295.00	295.00
135	0.00	27.00	27.00
138	0.00	1,343.00	1,343.00
139	0.00	952.00	952.00
140	0.00	191.00	191.00
141	0.00	419.00	419.00
143	0.00	490.00	490.00
144	0.00	185.00	185.00
145	0.00	525.00	525.00
146	0.00	11.00	11.00
149	0.00	405.00	405.00
151	0.00	0.00	0.00
152	1,214.90	123.10	1,338.00
153	2,640.33	26.67	2,667.00
155	0.00	79.00	79.00
157	3,242.80	107.20	3,350.00
158	1,615.41	58.59	1,674.00
201	0.00	0.00	0.00
203	0.00	407.00	407.00
205	0.00	1,368.00	1,368.00
207	0.00	0.00	0.00
208	0.00	0.00	0.00
209	0.00	0.00	0.00
210	1,413.76	90.24	1,504.00
211	0.00	1,227.00	1,227.00
215	0.00	0.00	0.00
216	0.00	0.00	0.00
217	0.00	1,014.00	1,014.00
231	0.00	242.00	242.00
232	554.76	48.24	603.00
233	2,189.44	298.56	2,488.00
234	313.02	109.98	423.00
235	0.00	1,264.00	1,264.00
301	0.00	43.00	43.00
302	0.00	0.00	0.00
309	0.00	2,141.00	2,141.00
TOTAL	**16,137.48**	**23,568.52**	**39,706.00**

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 2001-2002, imports to Improvement District A amounted to approximately 64 acre feet as shown in Appendix A, Table A-8.

Deliveries to Improvement District A through turnout WR-13 for the period 1966 to 2002 are shown in Table 5.4.

U. S. Marine Corps - Camp Pendleton

Camp Pendleton is located on the coastal side of the Santa Margarita River Watershed. Water is provided by 11 wells that produced 6,453 acre feet in Water Year 2001-2002. This production is from the younger alluvium and is based on riparian and appropriative rights. Of this quantity, 3,701 acre feet were exported to areas of the Base outside the Watershed as shown in Appendix A.

A portion of the exported water amounting to 1,950 acre feet were 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 1966-2002.

In addition to the operations at Camp Pendleton involving diversions from the Santa Margarita River, water is also imported by the Naval Weapons Station (NWS). The NWS occupies about 9,148 acres in the northeastern part of Camp Pendleton. Since 1969 the NWS has relied on imported water delivered via Fallbrook PUD for its supply. Wastewater is exported from the NWS and the Watershed via an outfall line also used by the Fallbrook Public Utility District. In 2001-2002, 97 acre feet were imported of which 9 acre feet of wastewater were exported, as shown in Appendix A. Imports and use between 1966 and 2002 are shown in Appendix B.

7.3 Indian Reservations

Water use information about the Cahuilla, Pechanga and Ramona Indian Reservations in the Watershed is described in the following sections:

Cahuilla Indian Reservation

In general, domestic water use on the Cahuilla Indian Reservation is not measured, however reports indicate that 300 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 42 acre feet from wells listed in Appendix C.

The foregoing estimate is for total domestic water use on the Reservation. A portion of this use may not be under Court jurisdiction, but the estimate will be used until individual well production quantities are available to allow determination of the portion under Court jurisdiction. The estimated domestic use is included on Table 4.1 under water purveyor production.

An additional 5 acre feet was put to commercial use at a casino. This water was pumped from well 7S/2E-26B3 that overlies basement complex and is outside court jurisdiction.

Pechanga Indian Reservation

During 2001-2002, water well production by the Pechanga Water System amounted to 460 acre feet. In addition, it is estimated that a spring produced about 4 acre feet during the year for a total production of 464 acre feet as shown in Appendix A, Table A-8. Information about system wells and the spring is shown in the following tabulation:

Well/Spring Designation	Name	Water Depth Feet	Well Depth Feet	Perf. Interval Feet
28R1	Ball Park	134.95	1,000	130 - 220
28Q6	Sea Bee	95.01	610	N/A
29A1	Kelsey Tract	87.34	348	N/A
29B10	Eduardo	47.76 *	N/A	N/A

N/A - Not Available
* Water depth in Well 8S/2W-29B9

The wells listed above are in areas of younger alluvium at ground surface. The depth of the younger alluvium in Wolf Valley was estimated by representatives of Rancho California WD and the United States for Rancho California WD Wells No. 117 (8S/2W-20E) and No. 119 (8S/2W-19J) to be in the range of 120 to 170 feet in depth. Thus, based on available well construction data, some of the production is from the younger alluvium and some from the older alluvium. Under state law production from the wells that originate in the older alluvium can be considered to be under a groundwater appropriative right or an overlying right, depending on the circumstances at each well.

Under federal law, production from wells that originate in either the younger or older alluvium can be considered to be under a federal reserved right, in accordance with Interlocutory Judgment No. 41 which provides as follows in Order No. 7:

> *IT IS FURTHER ORDERED, ADJUDGED AND DECREED that the United States of America intended to reserve, and did reserve, rights to the use of the waters of the Santa Margarita River stream system which under natural conditions would be physically available on the Pechanga Indian Reservation, including rights to the use of ground waters sufficient for the present and future needs of the Indians residing thereon with priority dates of June 27, 1882, for those lands established by the Executive Order of that date; January 9, 1907, for those lands transferred by the Executive Order of that date; August 29, 1893, for those lands added to the Reservation by Patent on that date; and May 25, 1931, for those lands added to the Reservation by Patent of that date.*

Ramona Indian Reservation

The Ramona Indian Reservation occupies 560 acres of land of which 321 acres are inside the Watershed. The Ramona Reservation has no reported water use or residents.

7.4 Small Water Systems

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 in Appendix A, Table A-8 for Butterfield Oaks Mobile Home Park, Hawthorn Water System, Outdoor Resorts Rancho California, Inc., and Jojoba Hills SKP Resort.

7.5 Irrigation Water Use

Estimated water production reported by substantial users for irrigation in the Santa Margarita River Watershed is shown on Table 7.1 to be 8,353 acre feet. This quantity includes 7,946 acre feet of well production and 913 acre feet of surface diversion (as shown in Appendix C), less 42 acre feet of production on the Cahuilla Indian Reservation, and less 464 acre feet of production on the Pechanga Indian Reservation. The foregoing production on the Indian Reservations is shown at a separate location on Table 7.1.

WATERMASTER
SANTA MARGARITA RIVER WATERSHED

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. The status of the current list of unauthorized uses is described as follows:

8.2 Unauthorized Small Storage Ponds

Many 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 storage of water in ponds less than 10 acre feet in capacity and used for stock watering is 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.

8.3 Rancho California Water District Water Use

A number of unauthorized water use issues raised by the United States were settled with the completion of a Cooperative Water Resource Management Agreement (Agreement) between the United States on behalf of Camp Pendleton, and Rancho California Water District.

Among other things, the parties have agreed to forbear enforcing rights and entitlements under the 1940 Stipulated Judgment ". . . for so long as this Agreement is in effect and being complied with." In addition, the United States has agreed to withdraw its protest of Rancho California WD's filing with the State Water Resources Control Board to change Permit 7032. That protest is also subject to reinstatement if the Agreement is terminated. The United States will also seek dismissal of the case entitled *United States of America v. Rancho California Water District*, Riverside County Superior Court, Case No. EO 14837, Court of Appeal, Fourth Judicial District, Case No. 229096.

Thus, as long as the Agreement is in effect, issues raised by the United States regarding Rancho California WD water use, as described in this section in earlier Watermaster reports, may be considered to be settled.

WATERMASTER
SANTA MARGARITA RIVER WATERSHED

SECTION 9 - THREATS TO WATER SUPPLY

9.1 General

General threats to the long-term water supply in the Santa Margarita River Watershed, which have been described in previous Watermaster Reports, are as follows:

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

2. Potential overdraft conditions at various locations in the Watershed.

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

9.2 High Nitrate Concentrations

In past years, high concentrations of nitrate have been measured in Anza Valley and on Rainbow Creek. Conditions in Anza Valley were generally described in the 1993-94 report. Few measurements have been reported since then.

During 1999 and 2000, the Regional Water Quality Control Board staff prepared a draft technical Total Maximum Daily Load (TMDL) plan for Rainbow Creek. As part of the process, the Regional Board monitored water quality at three sites on Rainbow Creek between January and August 2000 and conducted more comprehensive monitoring involving ten sites between August and October 2000.

Data collected by the Regional Board were summarized in the 1999-2000 report. The data indicated that the drinking water standard of 10 mg/l as N for nitrate was being exceeded at most of the sampling locations. The data also showed that phosphorous concentrations consistently exceeded the desired goal of 0.1 mg/l for biostimulatory substances contained in the Basin Plan.

In the draft TMDL the Regional Board concluded that the observed concentrations on nitrate were far in excess of 1.0 mg/l, a goal for nitrate that may be computed using a ratio of 10 parts nitrogen to one part phosphorous and the desired Basin Plan goal of 0.1 mg/l phosphorous. The draft TMDL further reports that the concentrations that exceed the Basin Plan goals for biostimulatory substances have caused excessive algae growth at various locations along Rainbow Creek.

As a result of the foregoing findings, the draft technical TMDL was substantially revised in 2000-2001.

The current draft TMDL calls for a 28% reduction in nitrogen and phosphorous loads to meet drinking water standards for nitrate within four years after the TMDL is approved by the EPA. Thereafter the load allocations are to be reduced by 10% every four years until biostimulatory goals are met.

Meeting the initial 28% reduction will require loading reduction of 70 – 80% for commercial nurseries, irrigated agricultural lands, residential land uses and septic tanks.

The draft TMDL also requires the County of San Diego to develop and implement a watershed management plan for nutrients. This plan is to describe measures to achieve the necessary reductions. The County will also be responsible for investigating groundwater and septic tank conditions.

The draft TMDL in the form of a Basin Plan Amendment dated March 22, 2002, was released for comment. Comments were received from EPA, the County of San Diego, Hines Nursery, and the Farm Bureau. At the close of the water year the Regional Board staff was working with the County of San Diego to finalize the implementation portion.

9.3 Potential Overdraft Conditions

Previous Watermaster reports have noted concerns about overdraft conditions in Anza Valley and in the Murrieta-Temecula area. The 1989-90 Watermaster Report described a water supply study, conducted by a consultant to Riverside County, which concluded that Anza Valley water use in 1986 was approximately equal to the perennial yield and that as of 1986 useable groundwater in storage approximated 56,000 acre feet. No further studies relative to groundwater use in Anza Valley are available. Historical measurements of groundwater levels for Anza Mutual Water Company's Well No. 1 (7S/3E-21G1) located in Anza Valley are plotted in this Report on Figure 4.4. It can be noted that the water level in October 2002 is within the general range observed since the early 1970's.

No recent published studies of safe yield are available for the Murrieta-Temecula area. Groundwater resources in much of the area are being managed by Rancho California WD. The District prepares an annual groundwater production program with the goal of developing the maximum perennial yield from the basin. The District monitors water levels and well production in each of several hydrogeologic subareas. Each year that data, combined with other information including water quality, natural and artificial recharge, pump settings, and well construction factors, are used to develop a recommended production program. Production rates are commonly lowered in subareas where water levels have declined over several years, and production rates are increased in areas where decline has not occurred. As a final check the recommended production rates are checked using the latest version of the RCWD groundwater model.

Groundwater level data for three wells in the Murrieta-Temecula Groundwater Area are included in this report as Figures 4.1, 4.3 and 4.5. Water levels in the Windmill Well (8S/2W-12H1) located at the eastern part of Pauba Valley declined 12.3 feet in 2001-2002. Water levels in Well 7S/3W-20C9 in the Murrieta CWD area declined 28 feet from last year, and those in Well 8S/2W-29G1 on the Pechanga Indian Reservation in Wolf Valley were down 16.8 feet from last year. As can be seen from the long-term hydrographs, the foregoing groundwater levels are at the low end of the broad range of groundwater levels experienced in recent years.

9.4 Salt Balance

A key issue in management of a groundwater basin is potential build up of salts from imported water supplies. Such a build-up could decrease the usability of waters in a basin. Consideration must be given to measures that allow export of salts from a basin to offset the salt load in water entering the groundwater basin.

A 2 MGD Demonstration Project involving discharge of treated wastewater into the Santa Margarita River system by Rancho California Water District was implemented in late 1997. This five-year project provides cost-effective disposal of wastewater from the upper Santa Margarita River area, assists in controlling salt balance in the Murrieta-Temecula Groundwater Area, and supplements water supplies to the Santa Margarita River system downstream of Temecula. In 2000-2001, RCWD initiated an application to the Regional Board to extend the Demonstration Project for an additional five years and to increase the maximum discharge to 5 MGD between December and April. The maximum discharge would be 3 MGD between May and November. Also, RCWD is requesting that the first 2 MGD be made permanent and that discharges above 2 MGD be considered to be Demonstration Project flows. During 2001-2002 the Regional Board staff continued processing RCWD's application.

In a separate project, Eastern MWD exported 4,863 acre feet of treated wastewater from the watershed for reuse. An additional 462 acre feet was exported for operational reasons. At an average total dissolved solids concentration of 650 mg/l there are approximately 1,768 pounds of salt in every acre foot of wastewater. Thus in 2001-2002, approximately 4,707 tons of salt were exported by EMWD.

In addition to export of treated wastewater, the salt balances of the Murrieta-Temecula groundwater area and the lower Santa Margarita River groundwater area are affected by discharges from wells into Murrieta Creek or Temecula Creek. In 2001-2002 wells discharged 168 acre feet, as shown below, together with estimated total dissolved solids in the water.

Well No.	Release Acre Feet	TDS mg/l	Sample Date
101	87	500	8/14/02
108	4	350	5/16/00
109	6	870	6/21/00
118	70	580	11/02/99
121	1	640	7/24/97
Total	168		

SECTION 10 - WATER QUALITY

10.1 Surface Water Quality

During 2001-2002 Rancho California WD continued sampling of surface water quality as part of its 2 MGD Demonstration Program. Weekly samples were collected from the Santa Margarita River at the Temecula gaging station, Murrieta Creek gaging station and Temecula Creek at Highway 79. These samples were analyzed for total dissolved solids (TDS), nitrate, total nitrogen and total phosphorous. TDS concentrations at the Santa Margarita River station ranged from a low of 530 mg/l to as much as 880 mg/l during the year.

Nitrate concentrations as nitrogen at the Santa Margarita River gaging station ranged from none detected, to a high of 1.4 mg/l. All measurements of nitrate were well below the drinking water standard of 10 mg/l as N. These data are shown in Appendix Table D-2.1.

Rancho California WD collected samples at additional locations in the Santa Margarita River system including Santa Margarita River at Willow Glen, DeLuz Crossing and the Estuary. Among other things, these samples were analyzed for TDS and nitrate as N, as shown in Table D-2.1. Except for the Estuary, TDS concentrations were generally in the 700 - 1000 mg/l range while the maximum nitrate sample was 3.2 mg/l as N measured at the Willow Glen station. Samples of the water being discharged into Murrieta Creek from the system were also collected at a station called the Murrieta River Meter. Nitrate concentrations at the River Meter ranged from 0.3 to 2.7 mg/l as N.

Surface water quality data collected in prior years by Camp Pendleton and Eastern MWD are listed in earlier Watermaster reports.

The U.S.G.S. with funding provided by Camp Pendleton, collected continuous water quality measurements for dissolved oxygen, pH, specific conductance and temperature at the Santa Margarita River gaging stations near Temecula and near Fallbrook. The latter station is about nine miles downstream from the Temecula station, and the intervening drainage area is 32 square miles. Data collected at the two stations is published by the U.S.G.S. in its annual Water Resource Data report. The highest average daily high and the lowest average daily low for each parameter for each month are shown in Tables 10.1 and 10.2 for months in water year 2002.

TABLE 10.1

SANTA MARGARITA RIVER WATERSHED

RANGES IN AVERAGE DAILY CONCENTRATION OF DISSOLVED OXYGEN, PH, SPECIFIC CONDUCTANCE AND TEMPERATURE AT SANTA MARGARITA RIVER NEAR TEMECULA

Water Year 2001-2002

COLLECTION MONTH/YEAR	DISSOLVED OXYGEN mg/l		pH		SPECIFIC CONDUCTANCE microsiemens/cm		TEMPERATURE Deg C	
	High	Low	High	Low	High	Low	High	Low
2001								
October	10.1	6.1	7.7	7.0	1300	1030	22.0	15.3
November	9.8	6.9	7.9	7.1	1450	302	18.0	7.9
December	9.8	5.9	8.2	7.5	1280	595	13.9	6.3
2002								
January	11.5	6.6	8.0	7.5	1250	865	13.9	4.8
February	11.5	6.2	7.9	7.5	1300	921	17.1	5.5
March	9.3	4.6	7.8	7.4	1360	595	19.6	10.0
April	8.3	4.3	7.8	7.2	1340	622	21.6	14.2
May	9.2	5.0	7.3	7.5	1370	1100	23.9	15.2
June	8.2	4.1	7.8	7.4	1230	627	24.6	17.9
July	7.7	5.0	7.8	7.4	1240	995	26.0	19.3
August	8.0	4.6	7.8	7.2	1360	970	21.9	18.9
September	7.5	4.9	7.8	7.3	1250	1010	24.6	18.4

TABLE 10.2

SANTA MARGARITA RIVER WATERSHED

RANGES IN AVERAGE DAILY CONCENTRATION OF DISSOLVED OXYGEN, PH, SPECIFIC CONDUCTANCE AND TEMPERATURE AT FPUD SUMP NEAR FALLBROOK

Water Year 2001-2002

COLLECTION MONTH/YEAR	DISSOLVED OXYGEN mg/l		pH		SPECIFIC CONDUCTANCE microsiemens/cm		TEMPERATURE Deg C	
	High	Low	High	Low	High	Low	High	Low
2001								
October	10.1	5.7	8.1	7.5	1480	1430	22.1	13.6
November	9.6	6.7	8.3	7.4	1760	575	18.3	3.8
December	10.7	7.9	9.0	7.7	1500	1190	13.4	6.3
2002								
January	14.4	7.6	8.2	7.8	1460	1350	13.9	5.1
February	16.2	7.6	8.5	7.7	1430	1240	17.5	5.4
March	15.9	5.8	8.5	7.6	1460	1230	20.4	9.2
April	9.0	4.5	7.9	7.5	1490	1170	22.7	13.3
May	9.6	4.8	7.8	7.3	1480	1250	24.1	14.3
June	9.2	4.8	7.8	7.3	1500	1310	26.4	17.6
July	9.4	4.0	7.8	7.4	1480	1410	27.8	19.9
August	9.0	3.8	7.8	7.4	1490	1410	26.0	18.5
September	8.8	4.7	7.8	7.5	1490	1390	24.8	17.0

Measured values are similar for the two stations although the lower station has slightly higher dissolved oxygen and pH readings. Also the average high specific conductance values increase from 7 to 22 percent between the upper and lower station. The increase in the average lows is much greater, often over 100 percent.

It may be noted that between May and October, RCWD discharges relatively high quality water to the stream thereby improving the relative quality of the water at the Temecula station. Also, inflows from the intervening 32 square mile drainage area include irrigation return flows that have high specific conductance.

10.2 Groundwater Quality

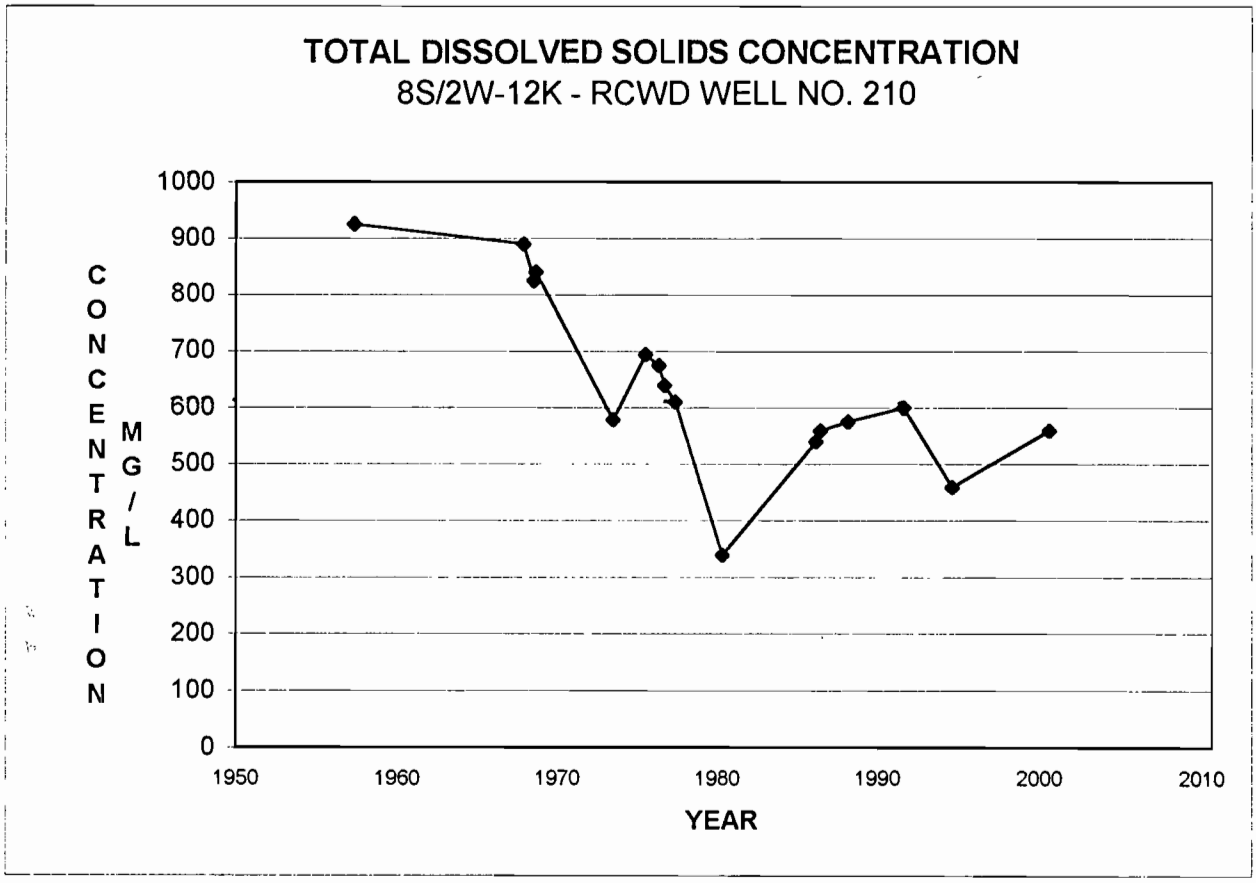
During 2001-2002 water quality data were collected from wells by Murrieta County WD, Rancho California WD, the U.S.G.S. for wells on Indian Reservations, and the U.S.M.C. at Camp Pendleton.

Murrieta County WD sampled its wells for nitrate in October 2001 and March 2002. Concentrations of nitrate as nitrate ranged from less than 2 to 20 mg/l. The drinking water standard is 45 mg/l as nitrate. These data are shown in Appendix Table D-3.

Water quality data for Rancho California WD wells are shown in Appendix Table D-4. Samples were collected from 41 wells during 2001-2002. Of the 41 wells, 25 wells were analyzed for nitrates only. In these wells, nitrate concentrations ranged up to 26 mg/l as nitrate, with the drinking water standard being 45 mg/l as nitrate. Samples from most of the remaining wells were subjected to standard chemical analysis: TDS concentrations increased in 4 wells, decreased in 10 wells, one well both increased and decreased and an initial sample was collected for one well.

Total dissolved solids concentrations for RCWD Well 210 are shown on Figure 10.1 for samples collected since 1957 when the well was constructed. The figure shows a decline in TDS from approximately 900 mg/l for the samples collected during the 1960's to the 500-600 mg/l range in recent years.

FIGURE 10.1



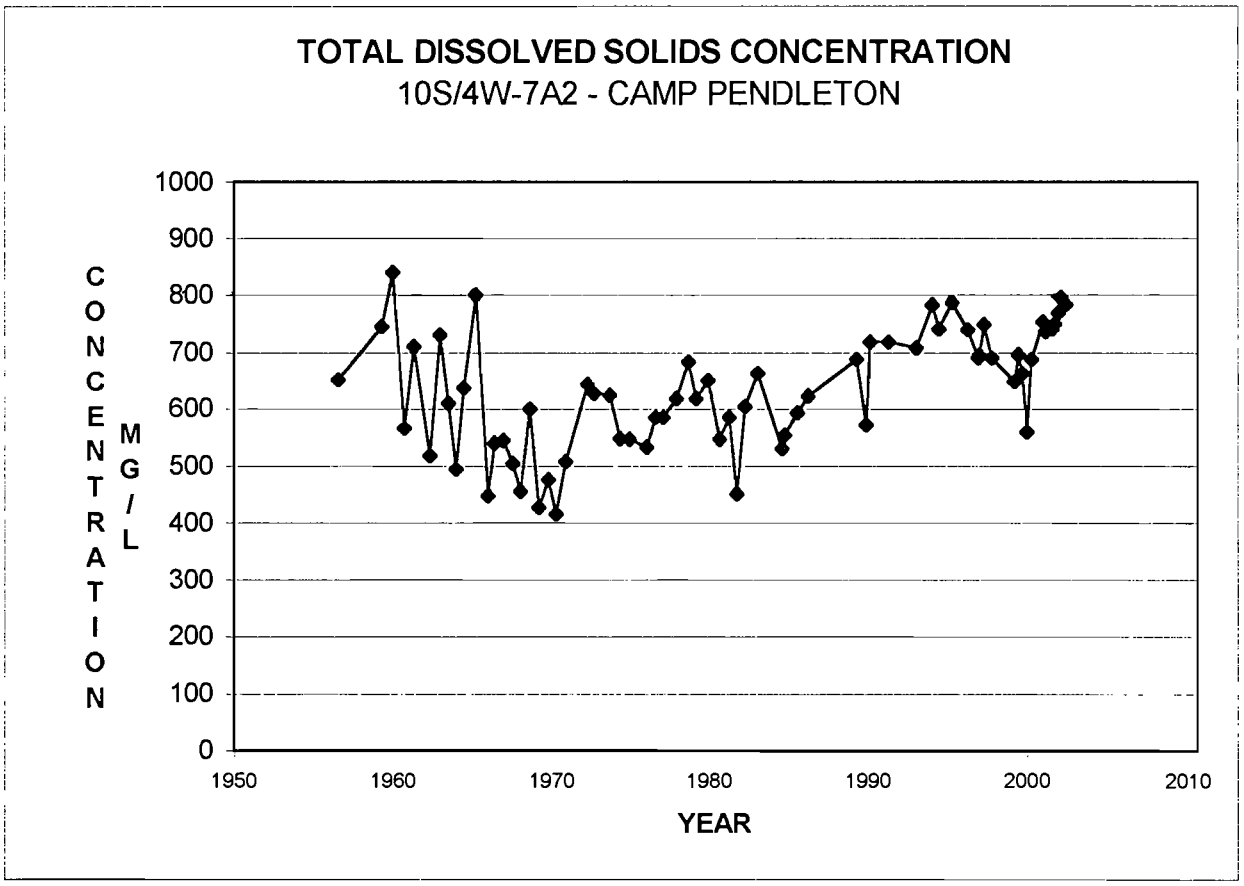
Appendix Table D-5 shows water quality data collected by the U.S.G.S. from wells on Indian Reservations. In 2001-2002 samples were collected from four wells on the Pechanga Indian Reservation and subjected to standard chemical analysis. Concentrations of the various constituents were consistent with historical results.

During 2001-2002 samples of groundwater were collected from 11 wells at Camp Pendleton as shown on Appendix Table D-6. These wells were subjected to standard chemical analysis with results generally consistent with the historical results. Of the 11 wells sampled, seven provided one or more samples where total dissolved solids concentrations exceeded 750 mg/l, the Basin Plan Objective.

Also, samples from three separate wells showed nitrate concentrations of exactly 100 mg/l as N. Samples before and after these samples indicated that nitrate concentrations were below the detection limits. Thus, these sample results are clearly erroneous. However the presence of three such results raises questions about the integrity of the sampling program.

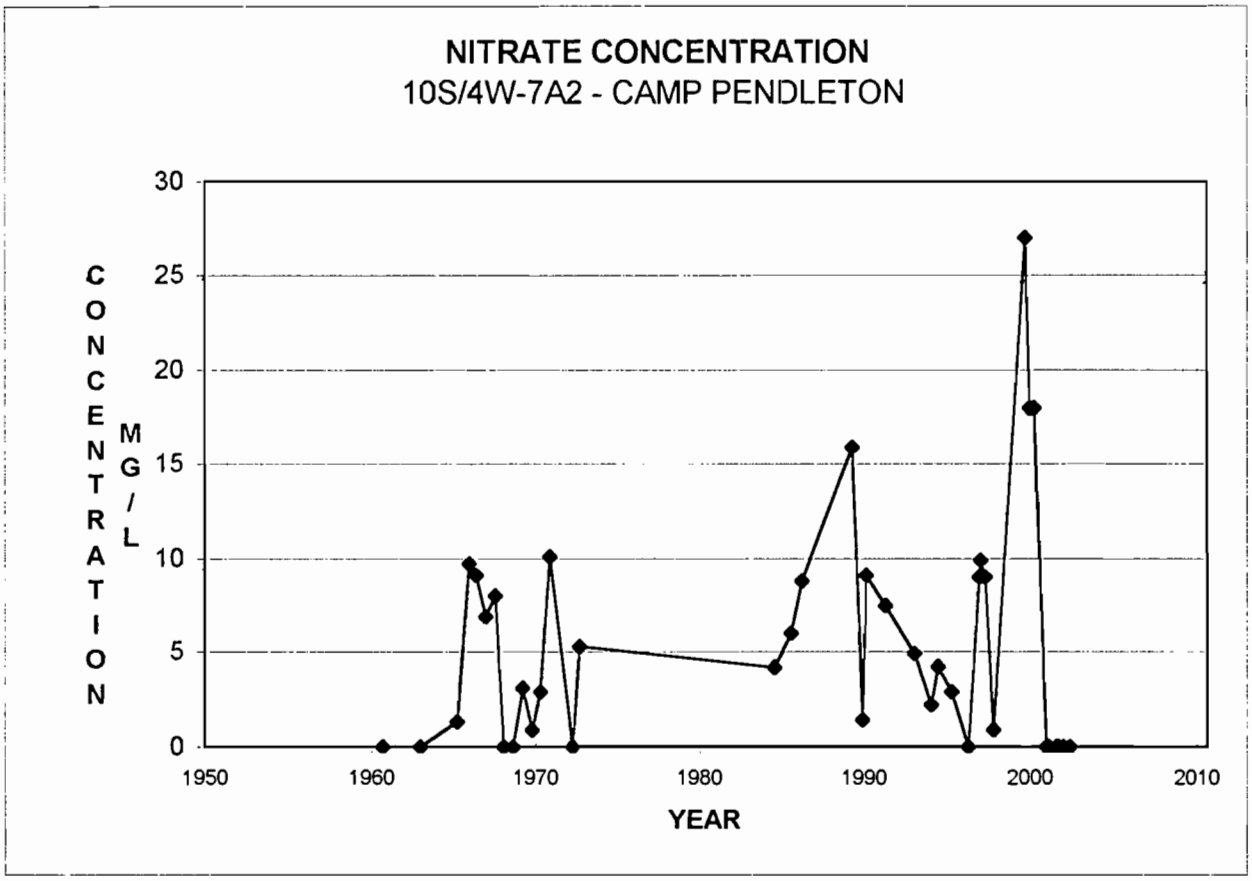
Historical total dissolved solids concentrations for Camp Pendleton Well 7A2 are shown on Figure 10.2 for samples collected since the mid-1950's. The figure shows a decline between the mid-1950's and 1970, then a period of increasing concentration to levels in the 550-800 mg/l range. Four samples collected in 2001-2002 indicated total dissolved solids concentrations of 750, 769, 784, and 796 mg/l.

FIGURE 10.2



Historical nitrate concentrations for the same well (7A2) are shown on Figure 10.3. Three of the four samples collected in 2001-2002 indicated there were no detected concentrations of nitrate. The other sample showed 100 mg/l as nitrate and is believed to be an error.

FIGURE 10.3



SECTION 11 – COOPERATIVE WATER RESOURCE AGREEMENT

11.1 General

On August 20, 2002, the Cooperative Water Resource Management Agreement between Camp Pendleton and Rancho California WD was approved by the District Court. Among other things, that agreement provides that on May 1 of each year the Technical Advisory Committee is to compute a hydrologic index based on streamflow and precipitation between January and April. Then based on the hydrologic index certain flows at the Santa Margarita River near Temecula gaging station are guaranteed by Rancho California WD. The agreement also requires water quality monitoring.

11.2 Required Flows

Although the agreement was not approved in time to be fully effective for the 2001-2002 water year, the hydrologic condition for the year was unofficially determined to be "Critically Dry." For September 2002 the unofficially required flow was 3.0 cubic feet per second. The actual flows, the ten-day moving average, and the differences between the moving average and the required flows are shown in Table 11.1. It can be noted that the moving average exceeded the required flow every day during the month. Rancho California WD released 107 acre feet during the month of September 2002.

11.3 Water Quality

The U. S. Geological Survey continuously monitors four parameters of water quality at the Santa Margarita River near Temecula gaging station. The parameters are dissolved oxygen, pH, specific conductance, and temperature. The daily averages for each of these parameters are reported annually. Monthly highs and lows for each parameter are listed in Table 10.1.

TABLE 11.1

SANTA MARGARITA RIVER WATERSHED

SANTA MARGARITA RIVER NEAR TEMECULA
TEN-DAY MOVING AVERAGE LESS REQUIRED FLOW
SEPTEMBER 2002 - CRITICALLY DRY YEAR

DAY	Discharge cfs	10-Day Moving Average cfs	Moving Average Less Required Flow of 3.0 cfs
1	3.9		
2	4.7		
3	4.4		
4	4.6		
5	4.2		
6	4.5		
7	5.7		
8	4.7		
9	4.4		
10	5.0	4.61	1.61
11	4.3	4.65	1.65
12	4.1	4.59	1.59
13	3.5	4.50	1.50
14	3.5	4.39	1.39
15	2.8	4.25	1.25
16	3.1	4.11	1.11
17	3.3	3.87	0.87
18	3.1	3.71	0.71
19	3.4	3.61	0.61
20	3.4	3.45	0.45
21	3.1	3.33	0.33
22	3.0	3.22	0.22
23	2.9	3.16	0.16
24	3.2	3.13	0.13
25	3.4	3.19	0.19
26	3.7	3.25	0.25
27	3.7	3.29	0.29
28	4.3	3.41	0.41
29	4.4	3.51	0.51
30	4.2	3.59	0.59
31	---	3.64	0.64
TOTAL SFD	116.50	82.46	16.46
TOTAL AF	230.67	163.28	32.60

SECTION 12 - FIVE YEAR PROJECTION OF WATERMASTER OFFICE TASKS, EXPENDITURES AND REQUIREMENTS

12.1 General

Projected tasks over the next five years are listed below in two categories: normal tasks, which are part of the usual Watermaster office operation; and additional tasks, which are foreseen but are not part of the normal office operations.

12.2 Normal Tasks

Tasks that are normally part of the Watermaster Office operation are as follows:

1. Update List of Substantial Users
2. Collect Water Production, Use, Import and Availability Data
3. Collect Well Location, Construction and Water Level Data
4. Administer Water Rights
5. Collect Water Quality Data
6. Monitor Water Quality and Water Right Activities
7. Administer Lake Skinner and Diamond Valley Lake MOU's
8. Administer Steering Committee Matters
9. Prepare Court Reports/Budgets
10. Monitor Streamflow and Water Quality Measuring
11. Data Management
12. Administer Cooperative Water Resource Management Agreement

12.3 Additional Tasks

Tasks that have been identified but which are not part of normal operations are as follows:

1. Prepare List of All Water Users Under Court Jurisdiction
2. Prepare Inventory of Ponds and Reservoirs
3. Determine Salt Balance

12.4 Projected Expenditures

Projected expenditures for the current year and over the next five years are listed as follows:

		Projected Expenditures		
		Watermaster Office	Gaging Station	Total
Current Year	2002/2003	$170,000	$117,850	$287,850
Projected Years	2003/2004	$172,700	$144,675	$317,375
	2004/2005	$181,300	$151,900	$333,200
	2005/2006	$190,400	$159,500	$349,900
	2006/2007	$199,900	$167,500	$367,400
	2007/2008	$209,900	$175,900	$385,800

SECTION 13 - WATERMASTER OFFICE BUDGET 2003-2004

A total Watermaster Budget of $317,375 for the Water Year ending September 30, 2004, is shown below.

This budget includes $172,700 for the Watermaster Office and $144,675 for U.S.G.S. gaging station operations. The budgeted cost for gaging station operation is based on the annual renewal of an agreement between the Watermaster and the U. S. Geological Survey.

	APPROVED BUDGET CURRENT YEAR 2002-2003 $	PROPOSED BUDGET 2003-2004 $
Watermaster Office		
Rent	9,600	9,600
Accounting Services	4,000	4,000
Supplies	700	700
General Liability & Professional Insurance	3,900	3,900
Printing	1,800	1,800
Audit	2,400	2,400
Publications	2,100	2,100
Clerical/Data Management	45,000	45,000
Telephone	1,400	1,600
Miscellaneous Operating/Maintenance	1, 000	1,500
Mileage/Travel	500	500
Office Equipment and Software	2,200	2,000
Watermaster		
Consulting Services	80,000	82,000
Automobile Expense	3,600	3,600
Travel Reimbursement	11,800	12,000
SUBTOTAL WATERMASTER OFFICE	**$ 170,000**	**$ 172,700**
USGS Gaging Station Operation and Maintenance	$ 117,850	$ 121,425
USGS Water Quality Operation and Maintenance		23,250
TOTAL	**$ 287,850**	**$ 317,375**

WATERMASTER
SANTA MARGARITA RIVER WATERSHED

WATERMASTER
SANTA MARGARITA RIVER WATERSHED

SANTA MARGARITA RIVER WATERSHED

ANNUAL WATERMASTER REPORT

WATER YEAR 2001-2002

APPENDIX A

WATER PRODUCTION AND USE

WATER YEAR 2001-2002

SEPTEMBER 2003

TABLE A-1

SANTA MARGARITA RIVER WATERSHED
MONTHLY WATER PRODUCTION AND USE

EASTERN MUNICIPAL WATER DISTRICT

2001-2002

Quantities in Acre Feet

	PRODUCTION					USE						RECLAIMED WASTEWATER					
MONTH YEAR	WELLS	IMPORT 1/	EXPORT FROM SMRW	NET IMPORT	TOTAL	AG 2/	COMM	DOM 3/	TOTAL	LOSS	TOTAL USE	REUSE IN SMRW 4/	OUTSIDE SMRW REUSE	OUTSIDE SMRW OTHER EXPORT 5/	RELEASE TO RIVER	RECHARGE	TOTAL
2001																	
OCT	0	955	301	654	654	0	0	621	621	33	654	451	575	(225)	0	0	801
NOV	0	682	10	672	672	0	0	638	638	34	672	378	426	15	0	0	819
DEC	0	761	547	213	213	0	0	202	202	11	213	261	99	488	0	0	848
2002																	
JAN	3	220	309	(89)	(86)	0	0	-82	(82)	(4)	(86)	397	154	291	0	0	842
FEB	10	431	173	553	563	0	0	534	534	29	563	347	358	72	0	0	777
MAR	0	744	256	488	488	0	0	464	464	24	488	404	610	(137)	0	0	877
APR	0	923	284	639	639	0	0	607	607	32	639	426	646	(227)	0	0	845
MAY	0	1,384	340	1,044	1,044	0	0	992	992	52	1,044	394	398	65	0	0	857
JUNE	0	1,724	315	1,409	1,409	0	0	1,339	1,339	70	1,409	411	251	125	0	0	787
JULY	0	1,776	947	829	829	0	0	788	788	41	829	466	504	(90)	0	0	880
AUG	0	1,823	903	920	920	0	0	874	874	46	920	444	384	95	0	0	923
SEPT	0	1,354	569	785	785	0	0	747	747	38	785	464	458	(10)	0	0	912
TOTAL	13	12,777	4,954	8,117	8,130	0	0	7,724	7,724	406	8,130	4,843	4,863	462	0	0	10,168

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

4/ Includes 1,219 AF of sewage diverted to RCWD

5/ Unaccounted for Export

TABLE A-2

SANTA MARGARITA RIVER WATERSHED
MONTHLY WATER PRODUCTION AND USE

FALLBROOK PUBLIC UTILITY DISTRICT
2001-2002
Quantities in Acre Feet

	PRODUCTION							USE						WASTEWATER			
MONTH YEAR	WELLS	TOTAL DISTRICT IMPORT	DELUZ AREA IMPORT	FALLBROOK AREA IMPORT	FALLBROOK SMRW IMPORT 1/	TOTAL SMRW IMPORT	TOTAL PRODUCTION	AG	COMM	DOM	TOTAL IN SMRW	LOSS*	TOTAL USE IN SMRW	FROM SMRW	REUSE IN SMRW	FROM U. S. N.W.S.	EXPORTED FROM SMRW
2001																	
OCT	0	1,411	22	1,390	639	661	661	384	62	375	821	(160)	661	156	3	0.80	152
NOV	0	1,043	257	785	361	618	618	436	51	242	729	(111)	618	139	1	0.70	137
DEC	0	691	118	573	264	382	382	199	29	224	452	(70)	382	132	1	0.60	130
2002																	
JAN	0	1,070	223	847	390	613	613	288	31	157	476	137	613	128	1	0.70	126
FEB	0	1,196	169	1,027	473	642	642	316	42	235	593	49	642	106	2	0.50	104
MAR	0	1,188	237	951	437	674	674	368	50	192	610	64	674	122	1	0.80	120
APR	0	1,323	278	1,045	481	759	759	405	48	264	717	42	759	121	2	0.70	118
MAY	0	1,660	351	1,308	602	953	953	506	58	233	797	156	953	123	3	0.90	119
JUNE	0	1,829	330	1,499	689	1,019	1,019	527	64	365	956	63	1,019	126	3	0.60	122
JULY	0	2,057	23	2,035	936	959	959	410	79	312	801	158	959	137	4	0.50	133
AUG	0	1,985	439	1,546	711	1,150	1,150	656	78	450	1,184	(34)	1,150	125	3	0.70	121
SEPT	0	1,969	453	1,516	697	1,150	1,150	690	73	322	1,085	65	1,150	117	3	0.90	113
TOTAL	0	17,422	2,900	14,522	6,680	9,580	9,580	5,185	665	3,371	9,221	359	9,580	1,532	28	9	1,495

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
2001-2002
Quantities in Acre Feet

	PRODUCTION	USE					
MONTH YEAR	WELLS	AG	COMM	DOM	TOTAL DELIVERED	LOSS *	TOTAL USE
2001							
OCT	170	25	48	98	171	(1)	170
NOV	137	20	48	98	166	(29)	137
DEC	79	7	9	38	54	25	79
2002							
JAN	90	7	13	33	53	37	90
FEB	87	9	15	11	35	52	87
MAR	104	9	15	63	87	17	104
APR	100	15	20	82	117	(17)	100
MAY	112	19	34	94	147	(35)	112
JUNE	169	27	36	115	178	(9)	169
JULY	206	25	22	137	184	22	206
AUG	218	36	46	160	242	(24)	218
SEPT	207	31	42	138	211	(4)	207
TOTAL	1,679	230	348	1,067	1,645	34	1,679

* Loss = Total production less total delivered

TABLE A-4

SANTA MARGARITA RIVER WATERSHED

MONTHLY WATER PRODUCTION AND USE

RAINBOW MUNICIPAL WATER DISTRICT

2001-2002

Quantities in Acre Feet

	PRODUCTION			USE				
MONTH YEAR	LOCAL	IMPORT TO WATERSHED	TOTAL IN WATERSHED	AG	COMMERCIAL/ DOMESTIC	TOTAL DELIVERIES	LOSS*	TOTAL USE
2001								
OCT	0	194	194	162	14	176	18	194
NOV	0	188	188	158	13	171	17	188
DEC	0	98	98	79	10	89	9	98
2002								
JAN	0	61	61	49	6	55	6	61
FEB	0	101	101	84	8	92	9	101
MAR	0	99	99	80	10	90	9	99
APR	0	89	89	71	10	81	8	89
MAY	0	103	103	82	12	94	9	103
JUNE	0	146	146	117	16	133	13	146
JULY	0	167	167	136	16	152	15	167
AUG	0	200	200	163	19	182	18	200
SEPT	0	230	230	187	22	209	21	230
TOTAL	0	1,676	1,676	1,368	156	1,524	152	1,676

*Loss = 10% of use

TABLE A-5

SANTA MARGARITA RIVER WATERSHED
MONTHLY WATER PRODUCTION AND USE

RANCHO CALIFORNIA WATER DISTRICT

2001-2002
Quantities in Acre Feet

	PRODUCTION			USE								VAIL	RECLAIMED WASTEWATER	
MONTH YEAR	WELLS 1/	IMPORT 2/	TOTAL	AG	AG/ DOM	COMM	DOM	SMR RELEASE 3/	IMPORT RECHARGE TO STORAGE	TOTAL USE	LOSS 4/	TOTAL	RELEASE AND RECHARGE 5/	REUSE IN SMRW 6/	MURRIETA CREEK DISCHARGE 7/
2001															
OCT	2,782	4,369	7,151	3,652	548	413	2,506	79	94	7,292	(141)	7,151	(2)	341	181
NOV	1,991	2,441	4,432	3,003	444	446	2,342	16	67	6,318	(1,886)	4,432	0	337	182
DEC	1,560	749	2,309	1,185	187	286	1,335	48	(383)	2,658	(349)	2,309	0	346	190
2002															
JAN	1,958	1,981	3,939	1,512	179	239	1,067	47	112	3,156	783	3,939	0	336	190
FEB	2,275	2,691	4,966	1,995	314	340	1,484	8	294	4,435	531	4,966	0	305	166
MAR	2,088	3,632	5,720	2,431	368	400	1,666	0	(21)	4,844	876	5,720	0	329	177
APR	1,656	3,709	5,365	2,366	359	410	1,690	0	82	4,907	458	5,365	0	331	184
MAY	2,168	6,108	8,276	2,551	392	438	1,957	76	144	5,558	2,718	8,276	(86)	327	190
JUNE	2,006	6,124	8,130	4,073	624	627	3,006	100	252	8,682	(552)	8,130	(23)	373	173
JULY	2,282	7,307	9,589	3,795	582	510	2,866	121	116	7,990	1,599	9,589	(78)	518	182
AUG	2,025	7,679	9,704	4,604	653	522	3,105	113	560	9,557	147	9,704	(54)	516	181
SEPT	2,104	7,358	9,462	4,580	695	654	3,549	107	137	9,722	(260)	9,462	(71)	460	184
TOTAL	24,895	54,148	79,043	35,747	5,345	5,285	26,573	715	1,454	75,119	3,924	79,043	(314)	4,519	2,180

1/ Wells recovered 23,568 AF from older alluvium and 1,327 AF from Vail recharge
2/ Includes 37,883 AF direct use and 16,265 AF direct recharge
3/ 6 AF into Temecula Creek from Well 109; 162 AF into Murrieta Creek from Wells 101, 108, 118 & 121; and 547 AF from System River Meter
4/ Loss = Total production less total use and includes 613 acre feet pumped from wells 102, 121, 135 and 146 directly into reclaimed water system
5/ Vail releases and the related Vail recharge are computed as Total Release less Inflow to be bypassed
6/ Does not include EMWD reclaimed wastewater production
7/ Discharge from 2 MGD Demonstration Project

TABLE A-6

SANTA MARGARITA RIVER WATERSHED

MONTHLY WATER PRODUCTION AND USE

U.S.M.C. - CAMP PENDLETON

2001-2002

Quantities in Acre Feet

	PRODUCTION			USE						RECLAIMED WASTEWATER		
MONTH YEAR	AG LOCAL	CAMP SUPPLY	TOTAL	AGRICULTURE 1/ IN SMRW	AGRICULTURE 1/ OUT SMRW	CAMP SUPPLY 2/ IN SMRW	CAMP SUPPLY 2/ OUT SMRW	TOTAL EXPORT	TOTAL 3/ IN SMRW	RECHARGED IN SMRW 4/	IMPORT 5/ RECHARGED IN SMRW	TOTAL RECHARGED IN SMRW
2001												
OCT	215	442	657	84	131	194	248	379	278	76	153	228
NOV	77	332	409	30	47	146	186	233	176	62	187	249
DEC	15	301	316	6	9	132	169	178	138	64	164	229
2002												
JAN	8	349	357	3	5	152	197	202	155	73	176	249
FEB	9	355	364	3	6	156	199	205	159	81	143	224
MAR	3	404	407	1	2	178	226	228	179	85	198	283
APR	26	428	454	10	16	186	242	258	196	83	180	263
MAY	73	510	583	28	45	221	289	334	249	82	156	238
JUNE	117	532	649	46	71	228	304	375	274	85	160	245
JULY	225	558	783	88	137	242	316	453	330	88	149	237
AUG	243	542	785	95	148	233	309	457	328	85	146	231
SEPT	173	516	689	68	105	222	294	399	290	86	138	224
TOTAL	1,184	5,269	6,453	462	722	2,290	2,979	3,701	2,752	950	1,950	2,900

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

2/ Camp Supply water use inside the SMRW equals 44% of sum of Camp Supply production plus Naval Weapons Station Import, minus the NWS Import (SMRW CS = .44 {CS+NWS Imp} - NWS Imp.)

3/ Assumes no losses

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

5/ Discharge from Plant No. 1, plus discharge from Pond 2, plus excess of Plant No. 13 over 29.17 acre feet per month

TABLE A-7

SANTA MARGARITA RIVER WATERSHED

MONTHLY WATER PRODUCTION AND USE

U. S. NAVAL WEAPONS STATION, FALLBROOK ANNEX

2001-2002

Quantities in Acre Feet

	PRODUCTION			USE				WASTEWATER
MONTH YEAR	LOCAL	IMPORT TO WATERSHED 1/	TOTAL	AG	COMMERCIAL/ DOMESTIC	LOSS 2/	TOTAL USE	EXPORTED
2001								
OCT	0.0	6.3	6.3	0.0	5.7	0.6	6.3	0.8
NOV	0.0	7.5	7.5	0.0	6.8	0.7	7.5	0.7
DEC	0.0	2.7	2.7	0.0	2.5	0.2	2.7	0.6
2002								
JAN	0.0	4.6	4.6	0.0	4.2	0.4	4.6	0.7
FEB	0.0	6.6	6.6	0.0	6.0	0.6	6.6	0.6
MAR	0.0	10.9	10.9	0.0	9.9	1.0	10.9	0.8
APR	0.0	6.5	6.5	0.0	5.9	0.6	6.5	0.7
MAY	0.0	10.1	10.1	0.0	9.2	0.9	10.1	0.9
JUNE	0.0	9.5	9.5	0.0	8.6	0.9	9.5	0.6
JULY	0.0	11.2	11.2	0.0	10.2	1.0	11.2	0.6
AUG	0.0	12.4	12.4	0.0	11.3	1.1	12.4	0.7
SEPT	0.0	9.1	9.1	0.0	8.3	0.8	9.1	0.9
TOTAL	0.0	97.4	97.4	0.0	88.5	8.9	97.4	8.6

1/ - Import via Fallbrook Public Utility District

2/ - Loss = 10% of Use

TABLE A-8

SANTA MARGARITA RIVER WATERSHED

MISCELLANEOUS WATER PRODUCTION AND IMPORTS

2001-2002

Quantities in Acre Feet

	IMPORT	PRODUCTION						
MONTH YEAR	WESTERN MWD IMPORTS TO IMPROVEMENT DISTRICT A	ANZA MUTUAL WATER COMPANY	OUTDOOR RESORTS RANCHO CALIFORNIA, INC.	BUTTERFIELD OAKS MOBILE HOME PARK	LAKE RIVERSIDE ESTATES	PECHANGA INDIAN RESERVATION	HAWTHORN WATER SYSTEM	JOJOBA HILLS SKP RESORT
2001								
OCT	14.40	3.90	2.38 E	0.14	0.00	25.00 A	8.25	10.50
NOV	8.30	2.30	2.38 E	0.12	10.49	25.00 A	4.56	13.00
DEC	3.60	1.50	2.38 E	0.07	0.00	25.00 A	2.62	5.55
2002								
JAN	3.90	2.00	2.38 E	0.11	8.74	31.00 A	4.18	5.68
FEB	3.30	0.60	2.38 E	0.11	13.00	30.00 A	4.56	6.09
MAR	3.40	0.50	3.05	0.11	25.89	30.00 A	5.04	6.98
APR	3.50	2.50	2.54	0.23	35.90	34.00 A	4.88	6.64
MAY	3.90	5.20 E	6.60	0.23	36.95	34.00 A	7.77	7.57
JUNE	4.60	5.20 E	9.05	0.23	47.23	34.00 A	9.76	6.78
JULY	5.00	0.10	7.71	0.34	46.21	64.00 A	10.78	7.78
AUG	5.00	13.00	11.03	0.33	68.39	64.00 A	10.37	7.74
SEPT	5.50	4.30	6.25	0.24	30.85	64.00 A	10.08	7.52
SUBTOTAL			58.13	2.26		460.00		
			158.00 *	7.50 *		4.00 **		
TOTAL	64.40	41.10	216.13	9.76	323.65	464.00	82.87	91.83

E - Estimate
A - Quarterly Average
* Estimated non-metered use
** Surface Diversion

SANTA MARGARITA RIVER WATERSHED

ANNUAL WATERMASTER REPORT

WATER YEAR 2001-2002

APPENDIX B

WATER PRODUCTION AND USE

WATER YEAR 1965-66 TO WATER YEAR 2001-2002

SEPTEMBER 2003

WATERMASTER
SANTA MARGARITA RIVER WATERSHED

TABLE B-1

SANTA MARGARITA RIVER WATERSHED
ANNUAL WATER PRODUCTION AND USE

EASTERN MUNICIPAL WATER DISTRICT
Quantities in Acre Feet

	PRODUCTION					USE						RECLAIMED WASTEWATER				
WATER YEAR	WELLS	IMPORT 1/	EXPORT FROM SMRW	NET IMPORT	TOTAL	AG 2/	COMM	DOM 3/	TOTAL	LOSS	TOTAL USE	REUSE IN SMRW	OUTSIDE SMRW REUSE	OUTSIDE SMRW OTHER EXPORT 4/	RELEASE TO RIVER	RECHARGE	TOTAL
1966	0	1,604	0	1,604	1,604	1,520	0	4	1,524	80	1,604	0	0		0	100	100
1967	0	1,630	0	1,630	1,630	1,544	0	4	1,548	82	1,630	0	0		0	100	100
1968	0	1,464	0	1,464	1,464	1,386	0	5	1,391	73	1,464	0	0		0	100	100
1969	0	1,741	0	1,741	1,741	1,648	0	6	1,654	87	1,741	0	0		0	100	100
1970	0	1,417	0	1,417	1,417	1,340	0	7	1,346	71	1,417	0	0		0	101	101
1971	0	1,383	0	1,383	1,383	1,306	0	8	1,314	69	1,383	0	0		0	119	119
1972	0	1,470	0	1,470	1,470	1,388	0	8	1,396	74	1,470	0	0		0	242	242
1973	0	1,533	0	1,533	1,533	1,447	0	10	1,456	77	1,533	0	0		0	217	217
1974	0	1,601	0	1,601	1,601	1,511	0	10	1,521	80	1,601	0	0		0	193	193
1975	0	1,969	0	1,969	1,969	1,859	0	11	1,871	98	1,969	0	0		0	253	253
1976	145	2,493	0	2,493	2,638	2,356	0	150	2,506	132	2,638	134	0		0	155	289
1977	431	2,947	0	2,947	3,378	2,723	64	423	3,209	169	3,378	244	0		0	70	314
1978	375	2,551	0	2,551	2,926	2,409	0	371	2,780	146	2,926	300	0		0	75	375
1979	289	1,894	0	1,894	2,183	1,784	0	290	2,074	109	2,183	350	0		0	147	497
1980	281	1,192	0	1,192	1,473	1,116	0	283	1,399	74	1,473	375	0		0	220	595
1981	282	716	0	716	998	663	0	285	948	50	998	375	0		0	304	679
1982	321	1,112	0	1,112	1,433	1,038	0	323	1,361	72	1,433	375	0		0	386	761
1983	106	1,211	0	1,211	1,317	1,131	0	120	1,251	66	1,317	375	0		0	466	841
1984	236	699	0	699	935	644	0	244	888	47	935	400	0		0	525	925
1985	314	679	0	679	993	624	0	319	943	50	993	450	0		0	565	1,015
1986	229	760	0	760	989	700	0	239	940	49	989	600	0		0	509	1,109
1987	89	1,155	0	1,155	1,244	638	0	543	1,182	62	1,244	650	0		0	554	1,204
1988	4	2,047	0	2,047	2,051	524	0	1,424	1,948	103	2,051	650	0		0	650	1,300
1989	685	3,746	0	3,746	4,431	1,146	0	3,064	4,209	222	4,431	1,058	0		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		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		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
1993	524	7,287	1,894	5,393	5,917	36	0	5,585	5,621	296	5,917	1,709	990	(285)	192	2,020	4,626
1994	232	10,082	2,932	7,150	7,382	0	0	7,013	7,013	369	7,382	2,687	2,465	694	0	0	5,846
1995	182	11,539	6,914	4,625	4,807	16	0	4,551	4,567	240	4,807	2,154	1,357	2,551	0	0	6,062
1996	299	11,730	6,770	4,960	5,259	0	0	4,996	4,996	263	5,259	2,979	2,473	520	0	0	5,972
1997	408	5,093	1,809	3,284	3,692	0	0	5,226	5,226	(1,534)	3,692	3,126	2,319	882	0	0	6,327
1998	240	6,609	1,492	5,117	5,357	0	0	5,090	5,090	267	5,357	2,949 5/	2,139	2,374	0	0	7,462
1999	669	7,118	2,719	4,327	4,996	0	0	4,746	4,746	250	4,996	3,741 6/	3,070	1,063	0	0	7,874
2000	630	9,179	1,923	7,256	7,886	0	0	7,493	7,493	393	7,886	4,669 7/	3,664	(15)	0	0	8,318
2001	355	9,219	3,271	5,948	6,303	0	0	5,989	5,989	314	6,303	4,571 8/	3,249	1,208	0	0	9,028
2002	13	12,777	4,954	8,117	8,130	0	0	7,724	7,724	406	8,130	4,843 9/	4,863	462	0	0	10,168

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
4/ Unaccounted for Export
5/ Includes 905 AF of sewage diverted to RCWD
6/ Includes1,159 AF of sewage diverted to RCWD
7/ Includes1,162 AF of sewage diverted to RCWD
8/ Includes1,201 AF of sewage diverted to RCWD
9/ Includes1,219 AF of sewage diverted to RCWD

TABLE B-2

SANTA MARGARITA RIVER WATERSHED
ANNUAL WATER PRODUCTION AND USE

FALLBROOK PUBLIC UTILITY DISTRICT

Quantities in Acre Feet

	PRODUCTION							USE				
WATER YEAR	WELLS	TOTAL DISTRICT IMPORT	DELUZ AREA IMPORT	FALLBROOK AREA IMPORT	SMRW IMPORT 1/	TOTAL SMRW IMPORT	TOTAL PRODUCTION	AG	COMM/ DOM	TOTAL IN SMR	LOSS 2/	TOTAL USE IN SMRW
1966	176	11,169	0	11,169	3,351	3,351	3,404	2,735	328	3,063	341	3,404
1967	16	9,508	0	9,508	2,852	2,852	2,857	2,253	319	2,572	285	2,857
1968	13	11,411	0	11,411	3,423	3,423	3,427	2,554	531	3,085	342	3,427
1969	178	9,458	0	9,458	2,837	2,837	2,891	1,787	814	2,601	290	2,891
1970	305	11,794	0	11,794	3,538	3,538	3,630	2,649	617	3,266	364	3,630
1971	7	11,350	0	11,350	3,405	3,405	3,407	2,386	681	3,067	340	3,407
1972	0	13,054	0	13,054	3,916	3,916	3,916	2,749	775	3,524	392	3,916
1973	0	10,610	38	10,572	3,172	3,210	3,210	2,156	732	2,888	322	3,210
1974	0	12,911	134	12,777	3,833	3,967	3,967	2,703	868	3,571	396	3,967
1975	0	11,492	213	11,279	3,384	3,597	3,597	2,420	816	3,236	361	3,597
1976	0	13,147	431	12,716	4,196	4,627	4,627	3,200	965	4,165	462	4,627
1977	20	13,435	587	12,848	4,625	5,212	5,232	3,536	1,174	4,710	522	5,232
1978	97	12,626	651	11,975	4,551	5,202	5,299	3,504	1,265	4,769	530	5,299
1979	187	12,865	961	11,904	4,762	5,723	5,910	3,820	1,498	5,318	592	5,910
1980	192	13,602	1,191	12,411	5,213	6,404	6,596	4,258	1,678	5,936	660	6,596
1981	87	16,878	1,994	14,884	6,549	8,543	8,630	5,688	2,144	7,832	798	8,630
1982	0	13,270	1,805	11,465	5,274	7,079	7,079	4,614	1,862	6,476	603	7,079
1983	0	12,298	1,969	10,329	4,751	6,720	6,720	4,320	1,871	6,191	529	6,720
1984	0	15,429	2,609	12,820	5,897	8,506	8,506	5,814	2,077	7,891	615	8,506
1985	0	14,256	2,358	11,898	5,473	7,831	7,831	5,187	2,135	7,322	509	7,831
1986	0	15,383	2,794	12,589	5,791	8,585	8,585	5,698	2,319	8,017	568	8,585
1987	0	15,313	2,986	12,327	5,670	8,656	8,656	5,793	2,281	8,074	582	8,656
1988	28	14,460	2,559	11,901	5,474	8,033	8,061	5,181	2,348	7,529	532	8,061
1989	94	16,179	3,007	13,172	6,059	9,066	9,160	5,620	2,706	8,326	834	9,160
1990	15	17,568	3,745	13,823	6,358	10,103	10,118	6,275	2,878	9,153	965	10,118
1991	46	13,939	2,871	11,068	5,091	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
1993	86	12,695	2,010	10,685	4,915	6,925	7,011	4,329	2,349	6,678	333	7,011
1994	83	13,124	2,246	10,878	5,004	7,250	7,333	4,282	2,666	6,948	385	7,333
1995	3	11,620	2,208	9,412	4,330	6,538	6,541	3,818	2,798	6,316	225	6,541
1996	0	14,168	2,733	11,435	5,260	7,993	7,993	4,411	3,247	7,658	335	7,993
1997	0	14,005	2,688	11,317	5,206	7,894	7,894	4,351	3,249	7,600	294	7,894
1998	0	11,757	1,803	9,954	4,579	6,382	6,382	3,245	2,798	6,043	339	6,382
1999	0	14,307	1,572	12,735	5,858	7,430	7,430	3,748	3,271	7,019	411	7,430
2000	0	15,983	2,705	14,478	6,660	9,365	9,365	5,138	3,903	9,041	324	9,365
2001	0	15,249	2,562	12,687	5,836	8,398	8,398	4,413	3,537	7,950	448	8,398
2002	0	17,422	2,900	14,522	6,680	9,580	9,580	5,185	4,036	9,221	359	9,580

1/ Total SMRW production equals SMRW Import plus 30% local (1966-1971)
2/ Loss = Total production less total use (Neglects change in Storage at Red Mtn After 1985)

TABLE B-3

SANTA MARGARITA RIVER WATERSHED
ANNUAL WASTEWATER PRODUCTION AND DISTRIBUTION
FALLBROOK PUBLIC UTILITY DISTRICT

Quantities in Acre Feet

WATER YEAR	TOTAL WASTEWATER PRODUCTION	PERCENT WASTEWATER FROM SMRW	WASTEWATER FROM SMRW	WASTEWATER REUSED IN SMRW	WASTEWATER FROM U.S.N.W.S.	WASTEWATER EXPORTED FROM SMRW	PERCENT WASTEWATER FROM SLR WATERSHED 1/	WASTEWATER IMPORTED FROM SLR WATERSHED
1966	395	81	320		0	0	19	75
1967	460	80	368		0	0	20	92
1968	524	80	419		0	0	20	105
1969	588	79	465		0	0	21	123
1970	652	78	509		0	0	22	143
1971	717	78	559		0	0	22	158
1972	782	77	602		0	0	23	180
1973	847	76	644		0	0	24	203
1974	912	75	684		0	0	25	228
1975	976	75	732		0	0	25	244
1976	1,040	74	770		0	0	26	270
1977	1,105	73	807		0	0	27	298
1978	1,170	72	842		0	0	28	328
1979	1,234	72	888		0	0	28	346
1980	1,298	71	922		0	0	29	376
1981	1,363	70	954		0	0	30	409
1982	1,428	69	985		0	0	31	443
1983	1,492	69	1,029		26 E	1,003	0	0
1984	1,556	68	1,058		26 E	1,032	0	0
1985	1,621	67	1,086		26 E	1,060	0	0
1986	1,685	66	1,112		18 P	1,094	0	0
1987	1,750	66	1,155		27	1,128	0	0
1988	1,815	65	1,180		25	1,155	0	0
1989	1,881	64	1,204		22	1,182	0	0
1990	1,952	66	1,298		27	1,271	0	0
1991	1,622	60	973		11	962	0	0
1992	1,730	63	1,090		7	1,083	0	0
1993	2,051	62	1,271		16	1,255	0	0
1994	1,834	58	1,073		5	1,068	0	0
1995	1,941	60	1,165		12	1,153	0	0
1996	1,799	58	1,040		5	1,035	0	0
1997	1,780	58	1,027		6	1,021	0	0
1998	2,297	65	1,490		8	1,482	0	0
1999	2,175	64	1,382		5	1,377	0	0
2000	2,164	76	1,641		7	1,634	0	0
2001	2,191	76	1,675	24	8	1,643	0	0
2002	2,061	74	1,532	28	9	1,495	0	0

NOTE: Measured quantities available for Total Wastewater in Water Year 1969 and July 1989
All other quantities are estimated (1966 - 1989). Prior to 1983, Wastewater was discharged into Fallbrook Creek. After 1983, Wastewater is discharged into an ocean outfall.

1/ - San Luis Rey Watershed
E - Estimated
P - Partial Year Data

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
1993	508	4	105	323	432	76	508
1994	512	10	103	324	437	75	512
1995	521	12	86	312	420	101	521
1996	629	88	110	373	571	58	629
1997	638	76	96	379	551	87	638
1998	603	79	87	349	515	88	603
1999	827	79	125	548	752	75	827
2000	1,123	199	365	493	1,057	66	1,123
2001	1,389	163	414	713	1,290	99	1,389
2002	1,679	230	348	1067	1,645	34	1,679

* Loss = Total production less total delivered

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
1993	0	23,766	1,965	1,655	132	1,787	178	1,965
1994	0	22,173	1,651	1,368	133	1,501	150	1,651
1995	0	20,935	1,661	1,398	112	1,510	151	1,661
1996	0	24,835	1,815	1,487	163	1,650	165	1,815
1997	0	24,638	1,429	1,139	160	1,299	130	1,429
1998	0	19,693	1,601	1,315	141	1,456	145	1,601
1999	0	24,961	1,727	1,411	159	1,570	157	1,727
2000	0	30,446	2,217	1,861	154	2,015	202	2,217
2001	0	27,214	1,804	1,439	202	1,641	163	1,804
2002	0	32,854	1,676	1,368	156	1,524	152	1,676

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									VAIL		RECLAIMED WASTEWATER	
YEAR	WELLS	IMPORT	TOTAL	AG	AG/ DOM	COMM	DOM	SMR RELEASE	IMPORT RECHARGE TO STORAGE	TOTAL USE	LOSS 1/	TOTAL	RELEASE AND RECHARGE	IRRIGATION 2/	REUSE IN SMRW	MURRIETA CREEK DISCHARGE 3/
1966		0	0						0				0	185	0	0
1967	4,288	0	4,288						0				0	1,136	0	0
1968	5,100	0	5,100						0				0	398	0	0
1969	3,617	0	3,617						0				0	697	0	0
1970	6,721	0	6,721						0				0	540	0	0
1971	7,960	0	7,960						0				0	1,541	0	0
1972	8,369	0	8,369						0				0	203	0	0
1973	7,726	0	7,726						0				0	524	0	0
1974	10,163	0	10,163						0				0	1,066	0	0
1975	10,357	0	10,357						0				0	369	0	0
1976	11,809	119	11,928						0				0	50	0	0
1977	10,522	1,845	12,367						0				0	0	0	0
1978	8,930	5,774	14,704						0				0	0	0	0
1979	11,371	7,009	18,380						0				0	0	0	0
1980	12,621	10,126	22,747						0				10,944	0	0	0
1981	15,612	15,282	30,894						0				6,802	0	0	0
1982	12,631	13,378	26,009						0				6,058	0	0	0
1983	16,675 4/	5,752	22,427						0				12,113	715	0	0
1984	25,660	6,716	32,376						0				6,612	1,144	0	0
1985	24,373	7,158	31,531						0				5,027	1,201	0	0
1986	26,997	11,174	38,171						0				8,722	1,053	0	0
1987	33,735	7,564	41,299						0				8,089	273	48	0
1988	21,367	17,854	39,221						0				4,844	0	82	0
1989	26,131	22,895	49,026	25,333		3,316	13,198	852	0	5/ 42,699	6,327	49,026	0	0	168	0
1990	33,241	22,030	55,271	27,643		3,940	14,916	902	0	47,401	7,870	55,271	0	0	133	0
1991	26,503	21,238	47,741	32,924		2,941	10,603	785	0	6/ 47,253	488	47,741	6,253	0	352	0
1992	29,968	16,931	46,899	30,651		2,406	9,672	683	0	43,412	3,487	46,899	2,244	0	374	0
1993	31,029	11,411	42,440	29,265		2,141	10,618	519	0	42,543	(103)	42,440	31,704	0	378	0
1994	32,725	16,386	49,111	32,534		2,322	12,370	467	0	47,693	1,418	49,111	8,469	0	1,936	0
1995	33,111	15,108	48,219	31,081		2,526	13,779	1,464	0	48,850	(631)	48,219	11,158	0	1,753	0
1996	36,086	23,600	59,686	35,912		2,752	16,330	2,149	0	57,143	2,543	59,686	9,427	0	2,264	0
1997	33,980 *	26,992	60,972	38,287		3,350	18,635	2,978	164	63,414	(2,442)	60,972	1,725	0	693 7/	0
1998	26,851 *	19,584	46,435	28,307		2,805	16,273	459	0	47,844	(1,409)	46,435	4,514	0	1,376 7/	1,179
1999	30,598 *	34,490	65,088	37,157		3,674	19,610	1,044	2,286	63,771	1,317	65,088	1,010	0	1,524 7/	1,654
2000	27,938 *	55,409	83,347	40,672	3,339	2,162	23,783	1,067	8,008	79,031	4,316	83,347	(49)	0	3,550 7/	1,854
2001	26,421 *	41,823	68,244	30,383	4,525	4,053	22,866	514	2,374	64,715	3,529	68,244	(361)	0	3,719 7/	2,015
2002	24,895	54,148	79,043	35,747	5,345	5,285	26,573	715	1,454	75,119	3,924	79,043	(314)	0	4,519 7/	2,180

1/ Loss = Total production less total use
2/ Irrigation 1966 to 1976 by pumping from Vail Lake.
Figures from 1966 to 1972 supplied by USGS; 1972 to 2002 supplied by RCWD.
3/ Discharge from 2MGD Demonstration project
4/ Includes 98 AF from wells out of groundwater area
5/ Import recharge was 2,294 AF but portion remaining in storage was not computed due to lack of data
6/ Import recharge was 701 AF but portion remaining in storage was not computed due to lack of data
7/ Does not include EMWD reclaimed wastewater production
* - Revised

TABLE B-7

SANTA MARGARITA RIVER WATERSHED
ANNUAL WATER PRODUCTION AND USE

U.S.M.C. - CAMP PENDLETON
EXCLUDING NAVAL WEAPONS STATION SHOWN ON B-8
Quantities in Acre Feet

	PRODUCTION			USE						RECLAIMED WASTEWATER		
WATER YEAR	AG LOCAL	CAMP SUPPLY	TOTAL	AGRICULTURE 1/ IN SMRW	AGRICULTURE 1/ OUT SMRW	CAMP SUPPLY 2/ IN SMRW	CAMP SUPPLY 2/ OUT SMRW	TOTAL EXPORT	TOTAL 3/ IN SMRW	RECHARGED IN-SMR 4/	IMPORT 5/ RECHARGED IN SMRW	TOTAL RECHARGED IN SMRW
1966	1,101	4,605	5,706	429	672	2,026	2,579	3,251	2,455	919	974	1,893
1967	796	4,811	5,607	310	486	2,117	2,694	3,180	2,427	914	1,243	2,156
1968	986	4,939	5,925	385	601	2,172	2,767	3,368	2,557	866	1,214	2,080
1969	940	4,821	5,761	367	573	2,058	2,763	3,276	2,485	1,019	1,170	2,189
1970	1,106	5,481	6,587	431	675	2,347	3,134	3,809	2,778	1,032	1,113	2,145
1971	819	5,291	6,110	319	500	2,264	3,028	3,527	2,583	921	1,090	2,011
1972	817	5,323	6,140	319	498	2,278	3,045	3,543	2,597	900	1,168	2,068
1973	1,003	5,121	6,124	391	612	2,189	2,932	3,544	2,580	949	1,187	2,137
1974	909	5,202	6,111	355	554	2,224	2,978	3,532	2,579	915	1,140	2,055
1975	757	4,593	5,350	295	462	1,957	2,636	3,098	2,252	989	1,530	2,519
1976	885	5,384	6,269	345	540	2,305	3,079	3,619	2,650	949	1,497	2,447
1977	994	4,506	5,500	388	606	1,918	2,588	3,194	2,306	942	1,416	2,358
1978	176	5,177	5,353	69	107	2,213	2,964	3,071	2,282	1,164	1,283	2,446
1979	1,070	7,213	8,283	417	653	3,109	4,104	4,756	3,527	1,065	1,427	2,493
1980	835	5,495	6,330	326	509	2,353	3,142	3,651	2,679	1,101	1,405	2,506
1981	1,464	5,240	6,704	571	893	2,241	2,999	3,892	2,812	1,119	1,249	2,368
1982	1,447	5,024	6,471	564	883	2,146	2,878	3,761	2,710	982	1,273	2,254
1983	942	4,215	5,157	367	575	1,790	2,425	3,000	2,157	1,252	1,242	2,494
1984	1,078	4,501	5,579	420	658	1,916	2,585	3,243	2,336	1,323	1,120	2,443
1985	1,069	4,764	5,833	417	652	2,039	2,725	3,377	2,456	1,419	1,200	2,619
1986	953	4,807	5,760	372	581	2,062	2,745	3,326	2,434	1,259	981	2,240
1987	1,098	4,838	5,936	428	670	2,064	2,774	3,444	2,492	1,367	1,799	3,166
1988	1,223	4,721	5,944	477	746	2,010	2,711	3,457	2,487	1,523	1,872	3,396
1989	856	5,044	5,900	334	522	2,148	2,896	3,418	2,482	1,301	1,446	2,747
1990	855	4,228	5,083	333	522	1,779	2,449	2,971	2,112	1,277	1,451	2,728
1991	554	3,159	3,713	216	338	1,329	1,830	2,168	1,545	1,070	1,219	2,289
1992	898	3,254	4,152	350	548	1,376	1,878	2,426	1,726	933	1,548	2,481
1993	1,067	2,879	3,946	416	651	1,201	1,678	2,329	1,617	1,049	1,926	2,975
1994	1,471	3,150	4,621	574	897	1,345	1,805	2,702	1,919	1,034	1,501	2,535
1995	985	3,768	4,753	384	601	1,588	2,180	2,781	1,972	980	1,473	2,453
1996	1,000	5,199	6,199	390	610	2,232	2,967	3,577	2,622	951	1,493	2,444
1997	1,066	5,238	6,304	416	650	2,244	2,994	3,644	2,660	988	1,932	2,920
1998	1,026	5,468	6,494	400	626	2,352	3,116	3,742	2,752	935	2,073	3,008
1999	1,064	5,054	6,118	415	649	2,145	2,909	3,558	2,560	893	2,130	3,023
2000	1,296	5,765	7,061	506	790	2,483	3,282	4,072	2,989	1,036	2,116	3,152
2001	1,025	5,341	6,366	399	626	2,314	3,027	3,653	2,713	1,065	2,075	3,140
2002	1,184	5,269	6,453	462	722	2,290	2,979	3,701	2,752	950	1,950	2,900

1/ Agricultural water use is divided with 39% used inside the SMRW and 61% used outside.
2/ Camp Supply water use inside the SMRW equals 44% of sum of Camp Supply production plus Naval Weapons Station Import, less the NWS Import for years beginning 1969. Prior to 1969 44% was used inside the SMRW and 56% was used outside.
3/ Assumes No Losses
4/ Wastewater Recharged in SMR equals effluent from Plants 3, 8 and 13 (partial).
5/ 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 4/.
No record available for effluent from Plant 2 returned to SMRW for 1966-1974 and 1982 - June 1990.
Calculation of import recharged in Santa Margarita River from Plant 2 is based on zero when no record is available.

TABLE B-8

SANTA MARGARITA RIVER WATERSHED
ANNUAL WATER PRODUCTION AND USE

U. S. NAVAL WEAPONS STATION, FALLBROOK ANNEX
Quantities in Acre Feet

	PRODUCTION			USE				WASTEWATER
WATER YEAR	LOCAL	IMPORT TO WATERSHED 1/	TOTAL	AG	COMMERCIAL/ DOMESTIC	LOSS 2/	TOTAL USE	EXPORTS
1966	87	0	87	0	79	9	87	0
1967	92	0	92	0	83	9	92	0
1968	108	0	108	0	97	11	108	0
1969	138	0	138	0	113	25	138	0
1970	152	0	152	0	125	27	152	0
1971	39 P	76 E	115	0	100	15	115	0
1972	0	115 E	115	0	105	10	115	0
1973	0	115 E	115	0	105	10	115	0
1974	0	115 E	115	0	105	10	115	0
1975	0	115 E	115	0	105	10	115	0
1976	0	115 E	115	0	105	10	115	0
1977	0	115 E	115	0	105	10	115	0
1978	0	115 E	115	0	105	10	115	0
1979	0	115 E	115	0	105	10	115	0
1980	0	115 E	115	0	105	10	115	0
1981	0	115 E	115	0	105	10	115	0
1982	0	115 E	115	0	105	10	115	0
1983	0	115 E	115	0	105	10	115	26 E
1984	0	115 E	115	0	105	10	115	26 E
1985	0	102	102	0	93	9	102	26 E
1986	0	94	94	0	85	9	94	18 P
1987	0	116	116	0	105	11	116	27
1988	0	120	120	0	109	11	120	25
1989	0	128	128	0	116	12	128	22
1990	0	145	145	0	132	13	145	27
1991	0	109	109	0	99	10	109	11
1992	0	99	99	0	90	9	99	7
1993	0	117	117	0	106	11	117	16
1994	0	73	73	0	66	7	73	5
1995	0	125	125	0	114	11	125	12
1996	0	100	100	0	91	9	100	5
1997	0	109	109	0	99	10	109	6
1998	0	97	97	0	88	9	97	8
1999	0	111	111	0	101	10	111	5
2000	0	104	104	0	95	9	104	7
2001	0	73	73	0	66	7	73	8
2002	0	97	97	0	88	9	97	9

1/ - Estimate 1969-1984 - Records not available
2/ - Loss = 10% of Use

E - Estimate
P - Partial year data

SANTA MARGARITA RIVER WATERSHED

ANNUAL WATERMASTER REPORT

WATER YEAR 2001-2002

APPENDIX C

SUBSTANTIAL USERS OUTSIDE

ORGANIZED WATER SERVICE AREAS

SEPTEMBER 2003

WATERMASTER
SANTA MARGARITA RIVER WATERSHED

APPENDIX C

SANTA MARGARITA RIVER WATERSHED
SUBSTANTIAL USERS OUTSIDE ORGANIZED WATER SERVICE AREAS

CURRENT OWNER	ADDRESS	ASSESSOR PARCEL NO.	PARCEL ACREAGE	ACRES IRRIGATED 2001-2002	IRRIGATED CROP 2001-2002	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)	Total	
						8S/1E-7N(2)	of	
						8S/1E-7Q(1)	|	
						8S/1E-7Q(2)	90.00	
Strange, Owen W.	m/t P.O. Box 1974	583-040-022	97.78	Total		8S/1E-19Q(1)	150.00	
and Elizabeth G.	Rancho Santa Fe,	583-040-021	13.45	|			Domestic	
Trustees, Strange	Ca. 92067	583-130-001-3	80.00	of				
Living Trust	43023 Hwy 79	583-120-001-2	120.00	|	Barley and			
of 4-15-88	Aguanga, CA 92536	583-060-003-9	41.60	90.00	Permanent pasture			
						8S/1E-29L Diversion		250.00
Twin Creek Ranch/	c/o Jim Holden	583-120-081	17.29	15.00	Row Crops			
Chester M. Mason	P. O. Box 519	583-120-083	68.09	65.00	Row Crops	8S/1E-28N1	Total	
Family Trust	Corona, Ca. 91718					8S/1E-28N(2)	|	
	44201 Hwy 79 Aguanga						|	
	44735 Hwy 79 Aguanga	583-120-084	179.39	30.00	Row Crops	8S/1E-29H	of	
		583-150-001	80.00	15.00	Row Crops		|	
				15.00	Row Crops		|	
		583-140-014	48.03	15.00	Row Crops	8S/1E-33F	|	
		583-140-015	40.00	35.00	Row Crops	8S/1E-33G1	|	
		583-140-016	40.00	38.00	Row Crops	8S/1E-33B	912.00	
		583-140-018	10.09	0.00				
		583-140-020	10.15	0.00				
		583-140-019	10.00	0.00				
Chavez, Francisco	45195 Hwy 371	583-240-022	10.00	9.00	Pistachios	8S/1E-23N	9.90	
	Aguanga, CA 92536							

APPENDIX C

SANTA MARGARITA RIVER WATERSHED
SUBSTANTIAL USERS OUTSIDE ORGANIZED WATER SERVICE AREAS

CURRENT OWNER	ADDRESS	ASSESSOR PARCEL NO.	PARCEL ACREAGE	ACRES IRRIGATED 2001-2002	IRRIGATED CROP 2001-2002	WELL/ DIVERSION LOCATION TWP/RNG/SEC	WELL PRODUCTION AC. FT	SURFACE DIVERSION AC. FT
AGUANGA GROUNDWATER AREA (Cont)								
Harris, Homer N. and Dolores G.	44444 Sage Road Aguanga, CA 92536	581-160-014	17.73	Total Of 15.00	Citrus Fruit and Walnuts	8S/1E-18J(1)	0.20	
						8S/1E-18J(2)	0.25	
		581-160-015	7.42	5.00				
		581-150-009	7.00	10.00		8S/1E-18H(1)	2.00	
						8S/1E-18H(2)	0.20	
		581-180-022	30.00	0.00				
		581-180-004	20.00	0.00				
		581-180-020	20.00	0.00		8S/1E-17M		
		581-180-021	2.15			8S/1E-17E	15.00	
Valeywide Recreation and Parks District	901 W. Esplanade Ave San Jacinto, CA 92582	581-170-009	7.82	7.82	Grass	Used 8S/1E-17E	owned by Harris	
Missionary Foundation, Inc.	44350 Sage Road Aguanga, CA 92536	581-170-011	290.03	20.00	Row Crops	8S/1E-17B	35.00	
						8S/1E-17H	Domestic	
	m/t 5160 Acadia Drive Riverside, CA 92505	581-180-009	120.00	0.00				
		581-190-001	320.00	0.00				
California Golf Academy	43590 Sage Road Aguanga, CA 92536 m/t 8762 Garden Grove Blvd. Suite #204 Garden Grove, CA 92844	581-120-006	200.00	7.00	Row Crops	8S/1E-8K2	28.00	
TOTAL AGUANGA GROUNDWATER AREA				**421.82**			**1,242.55**	**250.00**

APPENDIX C

SANTA MARGARITA RIVER WATERSHED
SUBSTANTIAL USERS OUTSIDE ORGANIZED WATER SERVICE AREAS

CURRENT OWNER	ADDRESS	ASSESSOR PARCEL NO.	PARCEL ACREAGE	ACRES IRRIGATED 2001-2002	IRRIGATED CROP 2001-2002	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	97.00	Potatoes			
	San Jacinto, CA 92383	113-090-03	21.46					
		113-090-05	541.22	65.00	Barley			
		113-100-01	389.81			9S/2E-11B - Diversion		0.00
		113-130-01	150.09			9S/2E-17D - Spring		0.00
		113-140-03	196.54			9S/2E-16N2	600.00	
						9S/2E-16M	275.00	
						9S/2E-16F1	5.00	
						9S/2E-16N1	108.00	
						9S/2E-16F2	0.00	
						9S/2E-16K - Diversion		55.00
		113-140-04	503.24					
		113-140-05	45.09					
		113-140-06	93.94					
		114-020-09	37.16					
		114-030-08	331.79	50.00	Barley	9S/2E-22	50.00	
		114-030-26	42.87					
* Land leased from Arlie W. and Coral R. Bergman	37126 Hwy 79 Warner Springs, CA 92086	113-140-01 *	358.62	Total Of		9S/2E-16B(1) 9S/2E-16B(2) 9S/2E-16G	Total Of 287.50	
		113-140-02 *	38.75	115.00	Potatoes			
Ward, Donald F.	38790 Highway 79	112-030-58	69.83	20.00	Bermuda	9S/1E-1Q(1)	20.00	
	Warner Springs, CA 9208	112-030-22	24.77	0.00				
		112-030-38	40	0		9S/1E-12A Domestic		
		112-030-67	67.41	10.00	Bermuda	Used 9S/1E-1Q(1)		
		112-030-59	160.00	0.00		9S/1E-1M - Diversion		0.00
Papac, Andrew and Olga	m/t 2030 Santa Anita Ave South El Monte, CA 91733 38642 Highway 79 Warner Springs, CA 92086	113-060-012	63.21	20.00	Bermuda Grass	9S/2E-7D	38.00	
						9S/2E-7E - Diversion		38.00
TOTAL TEMECULA CREEK ABOVE AGUANGA GROUNDWATER AREA				**377.00**			**1,383.50**	**93.00**

APPENDIX C

SANTA MARGARITA RIVER WATERSHED
SUBSTANTIAL USERS OUTSIDE ORGANIZED WATER SERVICE AREAS

CURRENT OWNER	ADDRESS	ASSESSOR PARCEL NO.	PARCEL ACREAGE	ACRES IRRIGATED 2001-2002	IRRIGATED CROP 2001-2002	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	Row Crops	7S/3E-17E	625.52	
	Los Angeles, CA 90036	576-070-001	70.00	70.00	Pasture	7S/3E-20N	266.00	
Agri-Empire, Inc.	P.O. Box 490							
	San Jacinto, CA 92383							
	Section 8	573-090-005	40.00	0.00				
		573-100-002	27.79	0.00				
	Section 10	575-050-044	14.36	0.00				
		575-060-002	133.93	0.00		7S/3E-11N4	342.00	
						7S/3E-11P3	252.00	
	Section 13	575-100-037	57.80	0.00				
	Section 14	575-110-021	143.75	100.00	4- Way	7S/3E-14D1	160.00	
		575-110-027	54.45	0.00				
		575-310-002	39.09	0.00		7S/3E-14C2	426.00	
		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	of				
		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	150.00	Potatoes			
	Section 17	573-180-011	39.74	25.00	Potatoes			

APPENDIX C

SANTA MARGARITA RIVER WATERSHED
SUBSTANTIAL USERS OUTSIDE ORGANIZED WATER SERVICE AREAS

CURRENT OWNER	ADDRESS	ASSESSOR PARCEL NO.	PARCEL ACREAGE	ACRES IRRIGATED 2001-2002	IRRIGATED CROP 2001-2002	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 20	576-060-009	8.26	Total				
		576-060-031	16.09	of				
		576-060-033	79.45	|				
		576-060-037	41.41	|				
		576-060-038	5.41	|				
		576-070-003	80.00	|				
		576-070-005	116.57	94.00	Potatoes			
	Section 21	576-080-003	133.72	Total of				
		576-100-061	37.71	140.00	Oats			
		576-110-001	160.00	40.00	Potatoes			
		576-110-002	28.00	0.00				
		576-110-004	50.00	0.00				
		576-110-006	19.29	0.00		7S/3E-21R3	377.00	
		576-110-007	17.85	0.00				
		576-110-008	17.00	0.00				
		576-110-009	18.41	0.00				
	Section 22	575-120-012	88.03	0.00				
		575-130-003	19.55	0.00				
		575-130-006	40.89	0.00				
		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	75.00	Barley			
		575-130-014	19.00	and				
		575-130-015	17.58	85.00	Potatoes			
		575-120-018	20.45	Total				
		575-120-019	20.45	|				
		575-120-032	4.69	|				
		575-120-033	4.68	of				
		575-120-034	4.68	|				
		575-120-035	4.28	80.00	4 - Way			
*Leased from Dionisios & Irini Argyros		575-120-028*	4.68	0.00				
2813 Monogram Ave, Long Beach, CA 90815		575-120-029*	4.68	0.00				
		575-120-030*	4.68	0.00				
		575-120-031*	4.23	0.00				
	Section 23	575-140-019	105.04	0.00				

APPENDIX C

SANTA MARGARITA RIVER WATERSHED

SUBSTANTIAL USERS OUTSIDE ORGANIZED WATER SERVICE AREAS

CURRENT OWNER	ADDRESS	ASSESSOR PARCEL NO.	PARCEL ACREAGE	ACRES IRRIGATED 2001-2002	IRRIGATED CROP 2001-2002	WELL/ DIVERSION LOCATION TWP/RNG/SEC	WELL PRODUCTION AC. FT	SURFACE DIVERSION AC. FT
WILSON CREEK ABOVE AGUANGA GROUNDWATER AREA								
ANZA VALLEY (Cont)								
Cahuilla Indian Reservation								
Domestic and Commercial Wells Reported by Bureau of Indian Affairs							Total	
Wells in Basement Complex	Wells out of Watershed	Wells with QYAL and/or QTOAL						
7S/2E-14L1	8S/3E-2A1	7S/2E-14J1	7S/2E-28Q1	7S/3E-31L2				
7S/2E-25D1	8S/3E-2B1	7S/2E-14M1	7S/2E-33C1	7S/3E-34E1				
7S/2E-26B1	8S/3E-2D1	7S/2E-14M2	7S/2E-33E1	7S/3E-34N1				
7S/2E-26B2	8S/3E-2E1	7S/2E-14R1	7S/2E-33N1	7S/3E-34Q1				
7S/2E-26B3	8S/3E-2G1	7S/2E-23A1	7S/3E-27C1	8S/2E-4D1				
7S/2E-34E1	8S/3E-2H1	7S/2E-23D1	7S/3E-27C2	8S/2E-4N1				
7S/2E-36A1	8S/3E-2K1	7S/2E-23F1	7S/3E-27H1	8S/2E-4N2				
7S/2E-36J1		7S/2E-23G1	7S/3E-27M1	8S/2E-4P1				
7S/2E-36R1		7S/2E-23H1	7S/3E-28A1	8S/2E-4R1				
7S/3E-26A1		7S/2E-23K1	7S/3E-28A2	8S/2E-4R2				
7S/3E-29Q1		7S/2E-23M1	7S/3E-28D1	8S/3E-5Q1			of	
7S/3E-30H1		7S/2E-23P1	7S/3E-29C1	8S/3E-6J1				
7S/3E-31A1		7S/2E-23Q1	7S/3E-29M1					
7S/3E-31N1		7S/2E-25C1	7S/3E-3OP1					
7S/3E-31Q1		7S/2E-25F1	7S/3E-3OQ1					
7S/3E-32D1		7S/2E-25R1	7S/3E-3OR1					
7S/3E-32D2		7S/2E-26E1	7S/3E-3OR2					
8S/3E-6B1		7S/2E-26L1	7S/3E-3OR3					
8S/3E-6B2		7S/2E-27A1	7S/3E-31C1					
8S/3E-6G1		7S/2E-27H1	7S/3E-31F1					
8S/3E-6R1		7S/2E-28N1	7S/3E-31L1					
							42.00	
SUBTOTAL ANZA VALLEY				**1,015.38**			**2,490.52**	**0.00**
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				**1,065.38**			**2,545.52**	**0.00**

APPENDIX C

SANTA MARGARITA RIVER WATERSHED
SUBSTANTIAL USERS OUTSIDE ORGANIZED WATER SERVICE AREAS

CURRENT OWNER	ADDRESS	ASSESSOR PARCEL NO.	PARCEL ACREAGE	ACRES IRRIGATED 2001-2002	IRRIGATED CROP 2001-2002	WELL/ DIVERSION LOCATION TWP/RNG/SEC	WELL PRODUCTION AC. FT	SURFACE DIVERSION AC. FT
MURRIETA-TEMECULA GROUNDWATER AREA								
Temecula Ranchos	m/t 2100 Tulare St #405	952-240-001	429.43	378.46	Citrus	8S/2W-14P1	0.00	
c/o Chester Rowell	Fresno, CA 93271	952-230-002	48.92	41.20	Citrus	8S/2W-14F	116.00	
and Roger Rowell	45055 Rio Linda Road	943-230-001	109.34	107.00	Citrus	7S/2W-26L	245.00	
	Rancho California Road	943-230-003	14.18	13.00	Citrus			
	La Serena Way	942-230-003	37.84	37.00	Citrus			
	Temecula, CA 92390	943-040-011	20.00	18.00	Citrus	7S/2W-28L	0.00	
		943-060-010	94.49	89.00	Citrus			
		943-060-011	26.50	29.00	Citrus			
Anza Grove	c/o McMillan Farm Mgt.	942-180-002	40.28	Total of				
	29379 Rancho Cal. Rd	942-240-003	40.83	155.00	Citrus			
	#201	942-240-004	40.83	and				
	Temecula, CA 92390	942-240-005	39.31	6.00	Grapes	7S/2W-26B1	280.00	
Stage Ranch Farm	P. O. Box 1371	927-620-004	17.84	18.00	Wine Grapes	7S/3W-31G(1)	45.00	
Management	Temecula, CA 92593							
A Peel Citrus	c/o Stage Ranch Farm Mgmt.	917-240-015-7	20.00	Total				
Giddings, Richard W.	P O. Box 1371	917-240-014-6	60.00	of				
Mendoza, Bertha	Temecula, CA 92593	917-150-006-1	120.00	110.00	Citrus	8S/1W-21K(1)	Total	
	38695 Highway 79	917-150-002-7	117.76	10.00		8S/1W-21K(2)	of	
	Warner Springs, CA 92086					8S/1W-21P(1)	|	
						8S/1W-21P(2)	315.00	
Boots, Clydene	P. O. Box 321	909-090-019	16.66	14.00	Pasture			
	Murrieta, CA 92362	909-100-017				7S/3W-21P	60.00	
	25555 Washington Ave							
	Murrieta, Ca. 92564							
James A. and	Highway 79 S	917-250-004	80.00	Total		8S/1W-25Q	0.00	
Maggie Carter	Temecula, CA	917-250-005	80.00	of		8S/1W-25P	50.00	
Living Trust	m/t P. O. Box 507			|		8S/1W-25N(1)Spring 3		0.00
	Santa Ana, CA 92702-0507	917-250-007	240.00	|		8S/1W-36K Spring 4		0.00
				|		8S/1W-36H Spring 6		0.00
				|		8S/1W-36K(1)	50.00	
				|		8S/1W-36K(2)	60.00	
				200.00	Grapes	8S/1W-36K(3)	100.00	
						8S/1W-36L - Stream Diversion		0.00

APPENDIX C

SANTA MARGARITA RIVER WATERSHED
SUBSTANTIAL USERS OUTSIDE ORGANIZED WATER SERVICE AREAS

CURRENT OWNER	ADDRESS	ASSESSOR PARCEL NO.	PARCEL ACREAGE	ACRES IRRIGATED 2001-2002	IRRIGATED CROP 2001-2002	WELL/ DIVERSION LOCATION TWP/RNG/SEC	WELL PRODUCTION AC. FT	SURFACE DIVERSION AC. FT
MURRIETA-TEMECULA GROUNDWATER AREA (Cont)								
Regency Properties	44051 Rainbow Cyn Rd. Temecula, CA 92592	922-220-002	86.11	Total		8S/2W-19(D)	314.73	
		922-220-003	5.75	|				
		922-220-004	52.18	|				
		922-220-007	14.36	|				
		922-220-008	3.99	of				
		922-230-002	59.29	|				
		922-230-003	1.00	|				
		922-230-004	40.00	|				
		922-230-007	25.00	|				
		922-230-008	16.11	150.00	Grass			
Carson, David M. and Carol J.	25471 Hayes Ave Murrieta, CA 92362	909-260-036	8.87	7.00	Pasture	7S/3W-29G	39.90	
		909-260-042	4.31	3.50	Pasture			

Pechanga Indian Reservation

Domestic and Commercial Wells Reported by Bureau of Indian Affairs						Total	
Wells in Basement Complex	Wells out of SMR Watershed	Wells with QYAL and/or QTOAL				|	
		8S/2W-28J1	8S/2W-34B3			|	
		8S/2W-28J2	8S/2W-34B4			|	
		8S/2W-28P1	8S/2W-34C1			|	
		8S/2W-28Q1	8S/2W-34D1			of	
		8S/2W-28Q2	8S/2W-34E1			|	
		8S/2W-28Q4	8S/2W-34F1			|	
		8S/2W-28Q6	8S/2W-34F2			|	
		8S/2W-28Q7	8S/2W-34F3			|	
		8S/2W-28R1	8S/2W-34F4			|	
		8S/2W-29A1	8S/2W-34F7			|	
		8S/2W-29B10	8S/2W-35D1			|	
				Domestic Use	170.00			
				Commercial Use	194.00			
				Irrigation	73.00			
				Loss	23.00			
				TOTAL USE			460.00	4.00
TOTAL MURRIETA-TEMECULA GROUNDWATER AREA				**1,386.16**			**2,135.63**	**4.00**

APPENDIX C

SANTA MARGARITA RIVER WATERSHED
SUBSTANTIAL USERS OUTSIDE ORGANIZED WATER SERVICE AREAS

CURRENT OWNER	ADDRESS	ASSESSOR PARCEL NO.	PARCEL ACREAGE	ACRES IRRIGATED 2001-2002	IRRIGATED CROP 2001-2002	WELL/ DIVERSION LOCATION TWP/RNG/SEC	WELL PRODUCTION AC. FT	SURFACE DIVERSION AC. FT
SANTA MARGARITA RIVER BELOW GORGE								
DE LUZ CREEK								
Ezor, Albert E.	40922 DeLuz Road	101-271-17	47.79	12.00	Avocados	8S/4W-29D(1)	36.80	
	Fallbrook, CA 92028			2.00	Vegetables	8S/4W-29D(2)	Total	
Bryant, Warren	40724 DeLuz Rd	101-271-19	19.08	Total		8S/4W-29E(1)	30.40	
and Lori	Fallbrook, CA 92028	101-271-20	5.02	of			|	
		101-271-21	11.86	8.00	Pasture	8S/4W-29E(2)	Total	
		101-271-22	6.41					
Prestininzi, Pete	2525 E. Mission Road	101-220-12	31.63	6.00	Pasture & Flowers			
and Dorothy N.	Fallbrook, CA 92028	101-210-53	50.44	12.00	Avocados	8S/4W-20A(1)	16.00	
	Richmond Truck Trail				and Citrus	8S/4W-20H(1)	16.00	
	and DeLuz Murrieta Road					8S/4W-20H(2)	14.00	
						8S/4W-20A(2)		
						8S/4W-20H(3)		
						8S/4W-20A - Diversion		0.00
Varela, Alfred	41125 DeLuz Rd	101-210-11	15.23	8.50	Avocados	8S/4W-20Q(1)	21.60	
	Fallbrook, CA 92028			0.50	Citrus	8S/4W-20Q(2)	Total	
Herbel, John	41257 DeLuz Rd	101-210-12	30.28	10.00	Avocados	8S/4W-20Q(1)	Total	
and Jeraldine	Fallbrook, CA 92028			18.00	Citrus	8S/4W-20Q(2)	of	
				2.00	Row crops	8S/4W-20Q(3)	66.20	
Wagner, Wilbur A.	41128 DeLuz	101-210-23	17.19	11.00	Avocados			
				3.00	Persimmons			
		101-210-22	4.55	3.00	Persimmons	8S/4W-20P(1)	0.00	
						8S/4W-20P(2)	0.00	
						8S/4W-20P(3)	33.00	
Chambers, Robert R.	m/t 11439 Laurelcrest Dr.	101-571-03	41.72	20.00	Flowers	8S/4W-28A	45.00	
and Clytia M.	Studio City, CA 91604					8S/4W-28A - Diversion		3.00
	40888 DeLuz-Murrieta Road	102-130-42	73.14	5.00	Fruit	9S/4W-9B(1)	30.00	
				20.00	Flowers	9S/4W-9B(2)	1.00	
						9S/4W-9B(3)	25.00	
Welburn, Douglas J.	40787 DeLuz Murrieta Rd.	101-571-08	26.98	8.00	Row Crops	8S/4W-28G1	33.00	
and Sue	Fallbrook, CA 92028			1.50	Trees			
	40751 DeLuz Murrieta Rd							
Nezami, Mohammed	2193 Calle Rociada	101-312-02	58.17	45.00	Flowers	8S/4W-31K(1)	Total	
Bluebird Ranch	Fallbrook, CA			5.00	Avocados	8S/4W-31K(2)	of	
	m/t P. O. Box 1089					8S/4W-31K(3)	|	
	Fallbrook, CA 92088	101-312-01	82.29	42.00	Flowers	8S/4W-31L	162.18	
						8S/4W-31L - Diversion		31.48

APPENDIX C

SANTA MARGARITA RIVER WATERSHED

SUBSTANTIAL USERS OUTSIDE ORGANIZED WATER SERVICE AREAS

CURRENT OWNER	ADDRESS	ASSESSOR PARCEL NO.	PARCEL ACREAGE	ACRES IRRIGATED 2001-2002	IRRIGATED CROP 2001-2002	WELL/ DIVERSION LOCATION TWP/RNG/SEC	WELL PRODUCTION AC. FT	SURFACE DIVERSION AC. FT
SANTA MARGARITA RIVER BELOW GORGE (Cont)								
DE LUZ CREEK (Cont)								
Vanginkel, Norman and Deborah	39452 DeLuz Road Fallbrook, CA 92028 m/t 20664 Calle De La Ladera Yorba Linda, CA 92887	101-312-03	80.00	24.00	Nursery Stock	8S/4W-31J(1) 8S/4W-31J(2) 8S/4W-31J(3) 8S/4W-31J(4)	0.00 19.00 5.00 35.00	
		102-052-04 102-731-02	22.04 4.26			8S/4W-6A	3.00	
Daily Family Trust	40555 Ross Road Fallbrook, CA 92028	101-430-27 101-430-30 101-500-01 101-480-14	2.73 16.39 16.62 13.20	Total of 7.00 7.00 6.00	 Avocados Limes Persimmons	8S/4W-34- Lake Diversion		7.00
SUBTOTAL DELUZ CREEK				**242.50**			**592.18**	**41.48**
SANDIA CREEK								
Cal June, Inc.	P. O. Box 9551 No. Hollywood, CA 91609 40376 Sandia Creek Fallbrook, CA 92028	101-360-40	126.32	65.00	Avocados	8S/4W-25P(1) 8S/4W-25P(2) 8S/4W-25P(3) 8S/4W-25P(4) 8S/4W-25P(5) 8S/4W-25P - Diversion		380.00
SUBTOTAL SANDIA CREEK				**65.00**			**0.00**	**380.00**
SANTA MARGARITA RIVER								
San Diego State University Foundation	47981 Willow Glen Rd. Temecula, CA m/t Louis Haberkern, Director SDSU Foundation 5250 Campanile Dr., 4th Flr. San Diego, CA 92182-1999	918-040-10 918-060-17	120.00 40.00	Total of 20.00	Citrus and Avocados	8S/3W-33Q1 8S/3W-33Q(2) 8S/3W-33Q - Diversion	0.00 3.00	44.75
SUBTOTAL SANTA MARGARITA RIVER				**20.00**			**3.00**	**44.75**
TOTAL SANTA MARGARITA RIVER BELOW GORGE				**327.50**			**595.18**	**466.23**

APPENDIX C

SANTA MARGARITA RIVER WATERSHED

SUBSTANTIAL USERS OUTSIDE ORGANIZED WATER SERVICE AREAS

CURRENT OWNER	ADDRESS	ASSESSOR PARCEL NO.	PARCEL ACREAGE	ACRES IRRIGATED 2001-2002	IRRIGATED CROP 2001-2002	WELL/ DIVERSION LOCATION TWP/RNG/SEC	WELL PRODUCTION AC. FT	SURFACE DIVERSION AC. FT
LOWER MURRIETA								
Northwind Farms, Inc.	c/o Cliff Ronnenberg	571-020-046	81.09	0.00				
	11292 Western Avenue	571-020-047	40.80	0.00				
	Stanton, CA 90680	571-020-048	36.75	0.00				
(Sage Ranch Nursery)	42522 E. Benton Rd.	571-020-049	148.86	0.00		7S/1E-7D	5.50	
	Aguanga, CA	571-020-004	1.50	0.00				
		571-520-007	109.50	Total				
		571-520-008	~~99.43~~	|				
		571-520-009	80.23	of				
		571-520-010	78.20	|				
		915-140-003	101.65	|				
		915-140-008	21.39	|				
		470-210-007	53.62	|				
		470-220-004	121.00	400.00	Olive trees	7S/1E-7E - Diversion		100.00
Gonzalez, Enrique and Maria M.	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) 7S/1W-10R(6)	Total of | 38.00 Domestic	
TOTAL LOWER MURRIETA				**410.00**			**43.50**	**100.00**
GRAND TOTAL				**3,987.86**			**7,945.88**	**913.23**
GRAND TOTAL	Not including Pechanga Indian Reservation (464 AF) and Cahuilla Indian Reservation (42 AF)			**3,987.86**			**7,443.88**	**909.23**

WATERMASTER
SANTA MARGARITA RIVER WATERSHED

SANTA MARGARITA RIVER WATERSHED

ANNUAL WATERMASTER REPORT

WATER YEAR 2001-2002

APPENDIX D

WATER QUALITY DATA

SEPTEMBER 2003

WATERMASTER
SANTA MARGARITA RIVER WATERSHED

TABLE D-2.1

SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

NUTRIENT SAMPLING BY RANCHO CALIFORNIA WATER DISTRICT

2001-2002

Site Location	Date Tested	Total Dissolved Solids (mg/l)	Nitrate as N (mg/l)	Total N (mg/l)	Total P (mg/l)
Murrieta Creek at Gaging Station	10/03/01	730	0.3	1.30	0.25
	10/10/01	730	0.7	1.20	0.20
	10/17/01	730	0.4	1.40	0.22
	10/24/01	800	0.3	1.20	0.27
	10/31/01	740	0.4	0.70	0.42
	11/07/01	920	ND	1.30	0.70
	11/14/01	610	0.8	2.30	1.00
	11/21/01	830	ND	1.00	0.67
	11/28/01	580	ND	0.80	0.34
	12/05/01	700	ND	1.60	0.45
	12/12/01	680	ND	0.40	0.35
	12/19/01	760	ND	1.50	0.31
	12/26/01	680	ND	1.00	0.32
	01/02/02	590	ND	0.50	0.37
	01/09/02	670	ND	0.70	0.31
	01/16/02	740	ND	0.20	0.34
	01/21/02	720	ND	0.80	0.29
	01/30/02	570	ND	1.20	0.20
	02/06/02	670	ND	0.90	0.19
	02/13/02	760	ND	0.90	0.22
	02/20/02	540	ND	0.60	0.39
	02/27/02	730	ND	0.80	0.40
	03/06/02	770	ND	0.80	0.31
	03/13/02	700	ND	0.49	0.34
	03/20/02	530	ND	1.20	0.33
	03/27/02	680	ND	0.80	0.37
	04/03/02	730	ND	0.74	0.44
	04/10/02	770	ND	2.10	0.38
	04/17/02	770	ND	0.32	0.41
	04/24/02	770	ND	0.63	0.31
	05/01/02	740	ND	0.48	0.25
	05/08/02	710	0.2	0.60	0.19
	05/15/02	670	0.2	0.77	0.18
	05/22/02	700	0.7	1.20	0.27
	05/29/02	700	1.1	1.70	0.13
	06/05/02	660	1.1	1.60	0.40
	06/12/02	690	0.2	0.64	0.15
	06/19/02	720	0.2	0.84	0.38
	06/26/02	640	0.7	1.30	0.21
	07/03/02	670	0.3	0.79	0.13
	07/10/02	550	0.6	1.20	0.14
	07/17/02	670	0.8	1.40	0.15
	07/23/02	700	ND	0.42	0.16
	07/31/02	650	0.2	0.56	0.50
	08/07/02	680	0.9	1.20	0.53
	08/14/02	540	0.8	1.00	0.10
	08/21/02	660	1.6	1.60	0.13
	08/28/02	660	1.9	2.80	0.12
	09/04/02	630	1.7	2.40	0.18
	09/11/02	680	1.1	2.10	0.22
	09/18/02	660	0.9	2.00	0.24
	09/25/02	620	1.5	2.10	0.14

ND - None Detected

TABLE D-2.1 (cont'd)

SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

NUTRIENT SAMPLING BY RANCHO CALIFORNIA WATER DISTRICT

2001-2002

Site Location	Date Tested	Total Dissolved Solids (mg/l)	Nitrate as N (mg/l)	Total N (mg/l)	Total P (mg/l)
Temecula Creek	10/03/01	1000	ND	0.8	0.38
	10/10/01	930	ND	0.6	0.29
	10/17/01	990	ND	1.0	0.27
	10/24/01	960	ND	0.2	0.26
	10/31/01	970	ND	0.2	0.33
	11/07/01	990	ND	0.9	0.27
	11/14/01	950	ND	ND	0.37
	11/21/01	940	ND	0.7	0.94
	11/28/01	950	ND	1.0	0.52
	12/05/01	930	0.4	2.4	0.26
	12/12/01	880	0.3	0.9	0.26
	12/19/01	930	0.5	2.2	1.10
	12/26/01	890	0.6	2.2	0.31
	01/02/02	910	0.4	2.1	0.44
	01/09/02	890	0.4	1.5	0.3
	01/16/02	920	0.3	0.5	0.21
	01/21/02	890	0.4	1.5	1.10
	01/30/02	900	0.4	1.4	0.15
	02/06/02	900	0.4	1.3	0.19
	02/13/02	890	0.4	1.4	0.67
	02/20/02	870	0.2	1.0	0.22
	02/27/02	880	ND	1.5	0.29
	03/06/02	920	ND	0.9	0.22
	03/13/02	810	0.2	0.0	0.30
	03/20/02	870	0.2	1.2	0.22
	03/27/02	860	ND	0.7	0.20
	04/03/02	940	ND	0.6	0.22
	04/10/02	870	ND	0.7	0.28
	04/17/02	890	0.2	0.6	0.29
	04/24/02	880	0.2	0.9	0.24
	05/01/02	900	ND	0.4	ND
	05/08/02	870	ND	1.3	0.43
	05/15/02	870	ND	1.0	0.35
	05/22/02	---	---	---	0.85
	05/29/02	870	0.2	0.9	0.97
	06/05/02	900	ND	0.81	0.36
	06/12/02	890	ND	3.6	0.38
	06/19/02	900	ND	1.0	1.20
	06/26/02	930	ND	1.0	0.38
	07/03/02	890	ND	0.9	ND
	07/10/02	840	ND	1.0	0.40
	07/17/02	960	ND	0.9	0.32
	07/23/02	890	ND	0.9	0.42
	07/31/02	900	ND	0.7	0.43
	08/07/02	920	ND	0.7	0.48
	08/14/02	920	ND	0.5	0.29
	08/21/02	940	ND	1.2	0.42
	08/28/02	900	ND	1.7	0.41
	09/04/02	930	ND	1.5	0.4
	09/11/02	890	ND	2.1	0.48
	09/18/02	880	ND	1.3	0.44
	09/25/02	870	ND	1.4	0.77

ND - None Detected

TABLE D-2.1 (cont'd)

SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

NUTRIENT SAMPLING BY RANCHO CALIFORNIA WATER DISTRICT

2001-2002

Site Location	Date Tested	Total Dissolved Solids (mg/l)	Nitrate as N (mg/l)	Total N (mg/l)	Total P (mg/l)
Santa Margarita River at Gaging Station	10/03/01	740	ND	1.1	0.23
	10/10/01	670	ND	1.2	0.28
	10/17/01	730	0.6	1.4	0.21
	10/24/01	790	ND	0.9	0.24
	10/31/01	750	0.7	0.9	0.48
	11/07/01	880	ND	1.2	0.67
	11/14/01	630	0.8	2.4	0.82
	11/21/01	830	ND	0.7	0.25
	11/28/01	600	ND	0.9	0.50
	12/05/01	710	ND	1.5	0.71
	12/12/01	720	ND	0.3	0.36
	12/19/01	730	ND	1.8	0.30
	12/26/01	730	ND	2.0	0.51
	01/02/02	590	ND	3.4	0.37
	01/09/02	710	ND	0.3	0.30
	01/16/02	750	ND	0.3	2.00
	01/23/02	730	ND	0.8	0.28
	01/30/02	560	ND	1.5	0.21
	02/06/02	690	ND	1.0	0.21
	02/13/02	800	ND	0.8	0.70
	02/20/02	550	ND	0.6	0.29
	02/27/02	750	ND	1.1	0.38
	03/06/02	790	ND	0.9	0.30
	03/13/02	730	ND	0.5	0.35
	03/20/02	530	ND	1.2	0.31
	03/27/02	710	ND	0.7	0.35
	04/03/02	790	ND	0.7	0.39
	04/10/02	800	ND	1.0	0.40
	04/17/02	790	ND	0.6	0.44
	04/24/02	780	ND	0.6	0.30
	05/01/02	740	ND	0.5	0.40
	05/08/02	710	ND	ND	0.26
	05/15/02	680	0.3	1.0	0.21
	05/22/02	720	1	1.5	0.39
	05/29/02	700	0.5	1.1	0.20
	06/05/02	670	0.5	1.4	0.20
	06/12/02	740	0.2	0.6	0.19
	06/19/02	820	0.3	1.5	0.29
	06/26/02	710	0.2	0.8	0.27
	07/03/02	700	0.3	0.9	0.19
	07/10/02	570	0.2	0.8	0.18
	07/17/02	670	0.4	0.8	0.22
	07/23/02	680	ND	0.4	0.41
	07/31/02	690	0.4	0.9	0.18
	08/07/02	670	0.4	0.4	0.31
	08/14/02	610	0.6	1.1	0.14
	08/21/02	740	0.5	0.8	0.19
	08/28/02	650	1.4	2.1	0.14
	09/04/02	670	1.1	2.0	0.30
	09/11/02	710	0.5	2.4	0.21
	09/18/02	640	0.8	1.6	0.20
	09/25/02	640	0.6	1.2	0.20

ND - None Detected

TABLE D-2.1 (cont'd)

SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

NUTRIENT SAMPLING BY RANCHO CALIFORNIA WATER DISTRICT

2001-2002

Site Location	Date Tested	Total Dissolved Solids (mg/l)	Nitrate as N (mg/l)	Total N (mg/l)	Total P (mg/l)
System Discharge to Murrieta Creek at River Meter	10/03/01	520	1.2	1.6	0.06
	10/10/01	540	2.3	2.5	0.11
	10/17/01	470	0.8	0.9	0.07
	10/24/01	470	2.7	2.8	0.05
	10/31/01	490	1.9	1.9	0.05
	05/01/02	510	0.3	0.9	0.06
	05/08/02	520	0.8	0.74	ND
	05/15/02	470	1.0	1.1	ND
	05/22/02	610	1.4	1.4	ND
	05/29/02	550	2.6	2.6	ND
	06/05/02	580	1.9	1.9	0.12
	06/12/02	490	0.4	0.4	0.18
	06/19/02	580	1.7	1.7	ND
	06/26/02	450	1.3	1.3	0.24
	07/03/02	500	0.3	0.28	ND
	07/10/02	430	0.9	1.4	ND
	07/17/02	560	2.5	2.5	ND
	07/23/02	530	1.7	1.7	0.07
	07/31/02	490	0.5	0.6	ND
	08/07/02	550	1.7	1.7	0.52
	08/14/02	490	2.0	2.0	0.05
	08/21/02	580	2.6	2.6	ND
	08/28/02	610	2.6	2.8	0.05
	09/04/02	620	2.5	2.5	0.13
	09/11/02	600	2.1	2.1	0.05
	09/18/02	490	2.1	2.1	0.09
	09/25/02	510	2.2	2.4	0.08
Santa Margarita River at Willow Glen	10/15/01	850	0.6	1.3	0.22
	12/10/01	900	1.0	2.2	0.31
	03/12/02	910	2.9	3.2	0.07
	05/14/02	910	0.2	0.93	0.11
	06/10/02	800	0.2	0.74	0.32
	07/15/02	770	ND	0.73	0.16
	08/06/02	800	ND	1.2	0.15
	09/09/02	780	0.4	1	0.24
Santa Margarita River at DeLuz Crossing	10/15/01	960	ND	0.6	0.1
	12/10/01	920	8.0	1.3	0.08
	03/12/02	840	0.3	0.6	ND
	05/14/02	910	ND	0.21	ND
	06/10/02	910	ND	0.29	0.72
	07/15/02	910	ND	0.4	0.23
	08/06/02	940	ND	0.53	0.08
	09/09/02	930	ND	0.73	ND
Santa Margarita River at Estuary	10/15/01	25,600	6.8	10.0	1.40
	12/10/01	19,600	2.4	6.1	1.80
	03/12/02	20,000	4.7	6.9	1.10
	05/14/02	4,600	ND	2.0	2.30
	06/10/02	5,200	1.4	7.3	2.80
	07/15/02	12,000	1.8	6.2	2.80
	08/06/02	10,000	ND	2.4	1.70
	09/09/02	13,000	ND	2.0	1.10

ND - None Detected

TABLE D-3

SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

WELLS SAMPLED BY 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
	01/22/93	960	605	83	29	83	2	130	84	278	33
	10/15/93	---	---	---	---	---	---	---	---	---	32
	03/30/94	---	---	---	---	---	---	---	---	---	44
	06/22/94	---	---	---	---	---	---	---	---	---	35
	09/14/94	---	---	---	---	---	---	---	---	---	31
	12/07/94	---	---	---	---	---	---	---	---	---	30
	03/01/95	---	---	---	---	---	---	---	---	---	32
	06/21/95	---	---	---	---	---	---	---	---	---	11
	09/13/95	---	---	---	---	---	---	---	---	---	27
	12/06/95	---	---	---	---	---	---	---	---	---	26
	03/27/96	---	---	---	---	---	---	---	---	---	15
	06/06/96	---	---	---	---	---	---	---	---	---	24
	09/11/96	---	---	---	---	---	---	---	---	---	22
	11/08/96	---	---	---	---	---	---	---	---	---	55
	11/14/96	---	---	---	---	---	---	---	---	---	25
	12/05/96	---	---	---	---	---	---	---	---	---	24
	03/27/97	---	---	---	---	---	---	---	---	---	20
	06/18/97	---	---	---	---	---	---	---	---	---	21
	12/03/97	---	---	---	---	---	---	---	---	---	18
	03/25/98	---	---	---	---	---	---	---	---	---	21
	04/22/98	1090	680	89	29	85	1	150	76	290	22
	06/17/98	---	---	---	---	---	---	---	---	---	23
	10/01/98	---	---	---	---	---	---	---	---	---	25
	12/02/98	---	---	---	---	---	---	---	---	---	28
	02/24/99	---	---	---	---	---	---	---	---	---	33
	03/24/99	---	---	---	---	---	---	---	---	---	26
	09/09/99	---	---	---	---	---	---	---	---	---	36
	12/03/99	---	---	---	---	---	---	---	---	---	32
	07/12/00	---	---	---	---	---	---	---	---	---	21
	08/04/00	1290	790	110	36	99	---	180	110	320	21
	10/24/01	---	---	---	---	---	---	---	---	---	17
	03/06/02	---	---	---	---	---	---	---	---	---	15

TABLE D-3 (cont'd)

SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

WELLS SAMPLED BY 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
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
	01/22/93	720	415	40	5	106	2	100	68	168	<1
	09/07/94	---	---	---	---	---	---	---	---	---	<1
	12/27/95	---	---	---	---	---	---	---	---	---	<1
	03/22/95	---	---	---	---	---	---	---	---	---	<1
	06/14/95	---	---	---	---	---	---	---	---	---	<1
	09/06/95	---	---	---	---	---	---	---	---	---	<1
	12/27/95	---	---	---	---	---	---	---	---	---	<1
	03/20/96	---	---	---	---	---	---	---	---	---	<2
	06/12/96	---	---	---	---	---	---	---	---	---	<2
	09/04/96	---	---	---	---	---	---	---	---	---	<2
	12/26/96	---	---	---	---	---	---	---	---	---	<2
	03/19/97	---	---	---	---	---	---	---	---	---	<2
	06/12/97	---	---	---	---	---	---	---	---	---	<2
	12/30/97	---	---	---	---	---	---	---	---	---	<2
	03/18/98	---	---	---	---	---	---	---	---	---	<2
	04/15/98	660	360	30	3	94	1	91	62	130	<2
	06/10/98	---	---	---	---	---	---	---	---	---	<2
	10/01/98	---	---	---	---	---	---	---	---	---	<2
	12/23/98	---	---	---	---	---	---	---	---	---	<2
	02/17/99	---	---	---	---	---	---	---	---	---	<2
	03/17/99	---	---	---	---	---	---	---	---	---	<2
	06/09/99	---	---	---	---	---	---	---	---	---	<2
	09/01/99	---	---	---	---	---	---	---	---	---	<2
	12/22/99	---	---	---	---	---	---	---	---	---	ND
	03/15/00	640	370	29	3	92	2	82	61	130	<2
	06/07/00	---	---	---	---	---	---	---	---	---	<2
	09/27/00	---	---	---	---	---	---	---	---	---	<2
	10/24/01	---	---	---	---	---	---	---	---	---	<2
	03/06/02	---	---	---	---	---	---	---	---	---	<2

ND - None Detected

TABLE D-3 (cont'd)

SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

WELLS SAMPLED BY 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
South Well	09/07/90	690	405	62	17	68	2	83	56	229	4
7S/3W-20D	10/04/91	---	---	---	---	---	---	---	---	---	2
	11/01/91	---	---	---	---	---	---	---	---	---	3
	11/26/91	---	---	---	---	---	---	---	---	---	2
	05/15/92	---	---	---	---	---	---	---	---	---	<1
	10/01/93	---	---	---	---	---	---	---	---	---	2
	09/28/94	---	---	---	---	---	---	---	---	---	1
	12/21/94	---	---	---	---	---	---	---	---	---	3
	03/15/95	---	---	---	---	---	---	---	---	---	2
	06/07/95	---	---	---	---	---	---	---	---	---	2
	09/27/95	---	---	---	---	---	---	---	---	---	2
	12/20/95	---	---	---	---	---	---	---	---	---	3
	03/13/96	---	---	---	---	---	---	---	---	---	2
	06/15/96	---	---	---	---	---	---	---	---	---	3
	09/25/96	---	---	---	---	---	---	---	---	---	3
	12/18/96	---	---	---	---	---	---	---	---	---	3
	04/09/97	---	---	---	---	---	---	---	---	---	2
	06/04/97	---	---	---	---	---	---	---	---	---	2
	03/11/98	---	---	---	---	---	---	---	---	---	<2
	04/08/98	820	500	73	18	67	2	92	73	250	3
	06/03/98	---	---	---	---	---	---	---	---	---	3
	10/01/98	---	---	---	---	---	---	---	---	---	3
	12/16/98	---	---	---	---	---	---	---	---	---	2
	03/10/98	---	---	---	---	---	---	---	---	---	2
	06/09/99	---	---	---	---	---	---	---	---	---	2
	09/22/99	---	---	---	---	---	---	---	---	---	<2
	12/15/99	---	---	---	---	---	---	---	---	---	ND
	02/09/00	810	460	55	14	84	1	99	63	210	<2
	05/03/00	---	---	---	---	---	---	---	---	---	<2
	08/04/00	780	440	47	9	100	---	99	48	210	<2
	08/23/00	---	---	---	---	---	---	---	---	---	<2
	10/24/01	---	---	---	---	---	---	---	---	---	<2
	03/20/02	---	---	---	---	---	---	---	---	---	4
Alson Well	06/06/90	1520	915	138	46	110	1	250	81	433	31
7S/3W-7M	07/21/98	1260	880	100	37	120	<1	180	92	330	23
	09/09/98	1200	850	110	39	120	<1	180	100	320	23
	05/03/00	---	---	---	---	---	---	---	---	---	20
	05/19/00	1290	800	97	36	110	<1	180	96	330	19
	11/28/01	1290	750	93	33	110	<1	180	96	310	17
	03/06/02	---	---	---	---	---	---	---	---	---	20

ND - None Detected

TABLE D-3 (cont'd)

SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

WELLS SAMPLED BY 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
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
	01/22/93	680	405	39	8	99	2	100	51	183	<1
	10/22/93	---	---	---	---	---	---	---	---	---	<1
	07/08/94	810	520	---	---	87	---	130	53	---	<1
	09/21/94	---	---	---	---	---	---	---	---	---	<1
	12/14/94	---	---	---	---	---	---	---	---	---	<1
	03/08/95	---	---	---	---	---	---	---	---	---	<1
	06/28/95	---	---	---	---	---	---	---	---	---	<1
	09/20/95	---	---	---	---	---	---	---	---	---	<1
	12/13/95	---	---	---	---	---	---	---	---	---	<1
	03/06/96	---	---	---	---	---	---	---	---	---	<2
	06/26/96	---	---	---	---	---	---	---	---	---	<2
	09/18/96	---	---	---	---	---	---	---	---	---	<2
	12/11/96	---	---	---	---	---	---	---	---	---	<2
	06/25/97	---	---	---	---	---	---	---	---	---	<2
	07/08/98	760	460	49	9	100	2	110	51	220	<2
	10/01/98	---	---	---	---	---	---	---	---	---	<2
	12/09/98	---	---	---	---	---	---	---	---	---	<2
	02/03/99	---	---	---	---	---	---	---	---	---	<2
	03/03/99	---	---	---	---	---	---	---	---	---	<2
	06/23/99	---	---	---	---	---	---	---	---	---	<2
	09/22/99	---	---	---	---	---	---	---	---	---	<2
	12/08/99	---	---	---	---	---	---	---	---	---	<2
	01/05/00	780	440	47	9	100	---	99	48	210	<2
	05/03/00	---	---	---	---	---	---	---	---	---	<2
	07/19/00	---	---	---	---	---	---	---	---	---	<2
	10/24/01	---	---	---	---	---	---	---	---	---	<2
	03/06/02	---	---	---	---	---	---	---	---	---	<2
Lynch Well 7S/3W-17R02	06/16/89	760	410	70	17	55	1	86	30	262	8
Morris Well 7S/3W-19R	09/07/90	530	280	38	7	68	3	50	49	168	3

TABLE D-4

SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

WELLS 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
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
	08/04/93	860	465	76	14	78	2	120	22	275	<1
	08/09/96	820	480	69	14	83	2	110	15	310	<2
	10/16/97	---	---	---	---	---	---	---	---	---	<2
	08/11/99	840	510	70	14	85	2	110	17	300	<2
	06/25/02	---	---	---	---	---	---	---	---	---	<2
	08/14/02	870	500	66	14	85	2.5	120	15	250	<2
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
	05/17/95	850	475	21	1	144	1	120	130	98	<1
	06/20/95	1190	700	26	2	207	2	150	220	131	<1
	06/09/97	---	---	---	---	---	---	---	---	---	<2
No. 105	07/06/89	500	280	30	6	66	2	71	22	134	14
7S/3W-25M1	03/17/93	480	310	17	2	80	2	67	22	110	14
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
	05/16/95	870	495	32	3	138	2	160	57	116	14
	07/07/97	---	---	---	---	---	---	---	---	---	8
	07/20/98	---	---	---	---	---	---	---	---	---	9
	07/20/99	---	---	---	---	---	---	---	---	---	9
	07/06/00	---	---	---	---	---	---	---	---	---	8
	05/01/01	490	300	7	<1	96	<1	70	23	100	8
	07/10/01	---	---	---	---	---	---	---	---	---	12
	07/03/02	---	---	---	---	---	---	---	---	---	8
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-25E1	05/29/91	930	500	59	14	104	3	130	110	153	10
	05/13/94	640	395	23	5	100	2	120	51	104	7
	05/16/95	---	---	---	---	---	---	---	---	---	5
	05/13/97	540	300	7	<1	110	<1	110	15	85	4
	05/05/99	---	---	---	---	---	---	---	---	---	8
	05/16/00	630	350	7	<1	110	<1	130	12	65	3
	05/02/01	---	---	---	---	---	---	---	---	---	2

TABLE D-4 (cont'd)

SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

WELLS 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
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
	06/22/94	1370	1010	138	32	124	5	140	320	287	7
	06/06/95	---	---	---	---	---	---	---	---	---	8
	06/13/97	1440	1010	130	31	140	4	140	330	280	10
	07/16/97	---	---	---	---	---	---	---	---	---	2.2 @N
	04/14/99	---	---	---	---	---	---	---	---	---	12
	04/11/00	---	---	---	---	---	---	---	---	---	13
	06/21/00	1330	870	120	28	130	4	120	280	270	3.2
	04/10/01	---	---	---	---	---	---	---	---	---	13
No. 110	03/31/88	1100	630	70	23	132	6	115	163	268	3
8S/1W-06K1	03/11/93	1010	610	60	21	124	5	110	200	201	3
	04/27/95	---	---	---	---	---	---	---	---	---	1
	07/20/99	---	---	---	---	---	---	---	---	---	<2
	07/06/00	---	---	---	---	---	---	---	---	---	2
	07/10/01	---	---	---	---	---	---	---	---	---	2
	03/11/02	850	500	58	20	81	5	74	190	160	<2
	07/03/02	---	---	---	---	---	---	---	---	---	<2
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
	03/03/94	700	410	46	13	86	2	120	25	189	19
	04/27/95	---	---	---	---	---	---	---	---	---	24
	03/20/97	880	500	53	15	96	2	140	33	200	22
	07/20/98	---	---	---	---	---	---	---	---	---	23
	09/16/98	---	---	---	---	---	---	---	---	---	22
	02/25/99	---	---	---	---	---	---	---	---	---	19
	04/14/99	---	---	---	---	---	---	---	---	---	17
	06/03/99	---	---	---	---	---	---	---	---	---	21
	09/14/99	---	---	---	---	---	---	---	---	---	22
	10/21/99	---	---	---	---	---	---	---	---	---	25
	11/02/99	---	---	---	---	---	---	---	---	---	22
	12/14/99	---	---	---	---	---	---	---	---	---	23
	01/11/00	---	---	---	---	---	---	---	---	---	18
	03/07/00	810	470	75	16	59	2	70	94	200	11
	04/11/00	---	---	---	---	---	---	---	---	---	23
	05/03/00	---	---	---	---	---	---	---	---	---	24
	06/21/00	---	---	---	---	---	---	---	---	---	23
	09/13/00	---	---	---	---	---	---	---	---	---	23

TABLE D-4 (cont'd)

SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

WELLS 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
No. 113 (cont'd)	10/06/00	---	---	---	---	---	---	---	---	---	21
7S/2W-25H01	02/14/01	---	---	---	---	---	---	---	---	---	16
	05/30/01	---	---	---	---	---	---	---	---	---	23
	06/12/01	---	---	---	---	---	---	---	---	---	22
	08/01/01	---	---	---	---	---	---	---	---	---	22
	11/13/01	---	---	---	---	---	---	---	---	---	22
	05/01/02	---	---	---	---	---	---	---	---	---	19
	08/06/02	---	---	---	---	---	---	---	---	---	20
No. 118	08/08/90	715	480	14	1	162	1	120	79	101	1
8S/3W-11B	09/26/90	---	---	---	---	---	---	---	---	---	1
	09/10/93	860	525	19	1	178	1	130	94	198	<1
	06/20/95	---	---	---	---	---	---	---	---	---	<1
	09/16/96	970	560	33	2	180	2	120	120	230	<2
	07/23/97	---	---	---	---	---	---	---	---	---	0.2 @N
	09/16/98	---	---	---	---	---	---	---	---	---	2
	11/02/99	1040	580	46	4	170	2	130	100	240	<2
	09/20/00	---	---	---	---	---	---	---	---	---	<2
	08/18/02	---	---	---	---	---	---	---	---	---	<2
No. 119	07/16/96	450	280	44	9	35	<1	39	18	180	15
8S/2W-19J	08/14/97	---	---	---	---	---	---	---	---	---	12
	12/24/97	---	320	---	---	---	---	---	---	---	3.1@N
	03/04/98	---	380	---	---	---	---	---	---	---	3.3@N
	06/04/98	---	---	---	---	---	---	---	---	---	3.8@N
	06/12/98	---	400	---	---	---	---	---	---	---	---
	09/16/98	---	---	---	---	---	---	---	---	---	3.7@N
	01/08/99	---	430	---	---	---	---	---	---	---	---
	04/13/99	---	---	---	---	---	---	---	---	---	28
	06/02/99	---	560	---	---	---	---	---	---	---	4.8@N
	07/27/99	940	640	103	21	58	1	70	150	264	30
	09/14/99	---	---	---	---	---	---	---	---	---	22
	09/14/99	---	---	---	---	---	---	---	---	---	4.8@N
	10/26/99	---	---	---	---	---	---	---	---	---	24
	11/02/99	---	---	---	---	---	---	---	---	---	22
	12/14/99	---	560	---	---	---	---	---	---	---	22
	04/04/00	---	---	---	---	---	---	---	---	---	20
	12/14/00	---	---	---	---	---	---	---	---	---	4.6@N
	03/29/01	---	---	---	---	---	---	---	---	---	20
	06/20/01	---	---	---	---	---	---	---	---	---	4.2@N
	09/14/01	---	---	---	---	---	---	---	---	---	4.2@N
	09/28/01	---	---	---	---	---	---	---	---	---	18
	11/16/01	---	---	---	---	---	---	---	---	---	16
	07/24/02	770	490	81	15	49	1.1	51	90	240	19
	05/23/02	---	480	---	---	---	---	---	---	---	18

TABLE D-4 (cont'd)

SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

WELLS 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
No. 120	06/20/90	570	330	6	1	116	1	82	31	113	11
8S/2W-17G	06/10/93	590	340	6	<1	122	1	85	35	104	12
	07/19/96	630	360	6	<1	120	1	88	42	120	14
	06/16/97	---	---	---	---	---	---	---	---	---	10
	08/14/97	---	---	---	---	---	---	---	---	---	9
	06/02/99	620	360	6	<1	122	<1	84	45	120	10
	06/06/00	---	---	---	---	---	---	---	---	---	11
	06/13/01	---	---	---	---	---	---	---	---	---	12
	06/01/02	670	370	8.1	<1	130	1	86	46	130	11
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
	07/18/97	---	---	---	---	---	---	---	---	---	ND
	07/24/97	---	640	---	---	---	---	---	---	---	ND
	08/20/97	---	---	---	---	---	---	---	---	---	ND
	09/03/97	---	---	---	---	---	---	---	---	---	ND
	06/19/02	---	---	---	---	---	---	---	---	---	ND
No. 122	06/23/97	---	---	---	---	---	---	---	---	---	6
8S/2W-20P1	07/25/97	660	460	64	13	44	1	61	65	190	8
	10/10/97	---	---	---	---	---	---	---	---	---	9
	12/23/97	---	400	---	---	---	---	---	---	---	1.8@N
	03/25/98	---	450	---	---	---	---	---	---	---	2.2@N
	06/03/98	---	---	---	---	---	---	---	---	---	2.4@N
	06/05/98	---	460	---	---	---	---	---	---	---	---
	09/17/98	---	---	---	---	---	---	---	---	---	2.2@N
	01/08/99	---	450	---	---	---	---	---	---	---	---
	06/03/99	---	470	---	---	---	---	---	---	---	2.1@N
	04/13/99	---	---	---	---	---	---	---	---	---	9
	09/21/99	---	---	---	---	---	---	---	---	---	2.1@N
	03/07/00	---	---	---	---	---	---	---	---	---	16
	04/04/00	---	---	---	---	---	---	---	---	---	9
	06/28/00	780	470	79	16	62	1	73	100	210	11
	12/13/00	---	---	---	---	---	---	---	---	---	2.5@N
	03/27/01	---	---	---	---	---	---	---	---	---	2.5@N
	04/18/01	---	---	---	---	---	---	---	---	---	10
	06/20/01	---	---	---	---	---	---	---	---	---	2.4@N
	09/13/01	---	---	---	---	---	---	---	---	---	2.7@N
	12/13/01	---	550	---	---	---	---	---	---	---	---
	05/14/02	---	570	---	---	---	---	---	---	---	9

ND - None Detected

TABLE D-4 (cont'd)

SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

WELLS 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
No. 123	06/06/90	1100	690	69	27	132	6	130	170	281	4
8S/1W-7B	06/10/93	1120	690	74	25	136	6	120	190	250	5
	02/05/97	930	550	55	18	110	5	83	130	250	1.3
	04/27/99	---	---	---	---	---	---	---	---	---	3
	06/02/99	---	---	---	---	---	---	---	---	---	3
	07/20/99	---	---	---	---	---	---	---	---	---	2
	08/11/99	---	---	---	---	---	---	---	---	---	2
	09/14/99	---	---	---	---	---	---	---	---	---	2
	10/21/99	---	---	---	---	---	---	---	---	---	2
	11/02/99	---	---	---	---	---	---	---	---	---	2
	02/09/00	1150	610	59	20	100	5	83	150	240	3
	02/09/01	---	---	---	---	---	---	---	---	---	3
No. 124	06/20/90	660	380	38	4	92	3	97	48	153	13
8S/2W-11R1	07/22/93	690	430	42	5	89	3	90	57	159	17
	07/18/95	---	---	---	---	---	---	---	---	---	11
	10/26/99	700	420	45	4	94	3	97	61	160	16
	07/06/00	---	---	---	---	---	---	---	---	---	17
	07/10/01	---	---	---	---	---	---	---	---	---	16
	07/03/02	---	---	---	---	---	---	---	---	---	10
No. 125	06/20/90	740	425	17	5	132	3	99	54	186	4
8S/2W-12H	06/10/93	770	450	18	5	140	3	150	60	131	3
	06/20/95	---	---	---	---	---	---	---	---	---	2
	06/09/97	---	---	---	---	---	---	---	---	---	2
	09/17/98	---	---	---	---	---	---	---	---	---	3
	06/03/99	720	440	10	3	135	2	89	76	170	<2
	11/02/99	---	---	---	---	---	---	---	---	---	3
	11/15/00	---	---	---	---	---	---	---	---	---	2
	07/24/01	---	---	---	---	---	---	---	---	---	4
	06/19/02	700	400	8.8	2.3	130	1.8	87	54	170	<2
	07/03/02	---	---	---	---	---	---	---	---	---	2
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
	07/18/95	540	315	1	<1	122	<1	72	11	122	<1
	07/07/97	---	---	---	---	---	---	---	---	---	<2
	07/16/97	---	---	---	---	---	---	---	---	---	0.2@N
	07/23/97	---	---	---	---	---	---	---	---	---	0.2@N
	08/20/97	---	---	---	---	---	---	---	---	---	0.4@N
	09/03/97	---	---	---	---	---	---	---	---	---	0.2@N
	09/17/97	---	---	---	---	---	---	---	---	---	0.2@N

TABLE D-4 (cont'd)

SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

WELLS 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
No. 126	07/20/98	520	330	2	<1	120	<1	56	11	130	<2
8S/2W-15H	09/16/98	---	300	---	---	---	---	---	---	---	0.4@N
	04/14/99	---	---	---	---	---	---	---	---	---	2
	04/11/00	---	---	---	---	---	---	---	---	---	<2
	04/11/01	---	---	---	---	---	---	---	---	---	2
	07/12/01	530	300	2	<1	100	<1	53	12	140	<2
	06/20/02	---	---	---	---	---	---	---	---	---	<2
	08/06/02	---	---	---	---	---	---	---	---	---	<2
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
	07/20/95	380	275	16	2	66	1	65	10	101	19
	07/07/97	---	---	---	---	---	---	---	---	---	15
	07/20/98	370	260	12	<1	71	1	48	11	110	14
	06/02/99	---	---	---	---	---	---	---	---	---	13
	06/08/01	---	---	---	---	---	---	---	---	---	14
	07/10/01	400	230	10	<1	68	<1	44	12	100	12
	06/20/02	---	---	---	---	---	---	---	---	---	12
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
	09/10/93	470	275	24	6	60	2	74	16	110	13
	08/09/96	460	270	19	3	67	2	70	15	100	11
	02/04/97	---	---	---	---	---	---	---	---	---	53
	12/20/00	550	330	44	13	47	2	81	14	130	20
	03/22/01	---	---	---	---	---	---	---	---	---	20
	04/17/01	---	---	---	---	---	---	---	---	---	20
	05/02/01	---	---	---	---	---	---	---	---	---	18
	06/08/01	---	---	---	---	---	---	---	---	---	20
	10/16/01	---	---	---	---	---	---	---	---	---	19
	11/13/01	---	---	---	---	---	---	---	---	---	18
	02/26/02	---	---	---	---	---	---	---	---	---	16
	05/23/02	---	---	---	---	---	---	---	---	---	14
	09/18/02	---	---	---	---	---	---	---	---	---	15
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
	02/09/94	650	410	3	<1	148	1	81	72	146	4
	05/16/95	---	---	---	---	---	---	---	---	---	4
	02/05/97	780	450	4	<1	170	<1	78	82	150	5
	05/14/97	---	---	---	---	---	---	---	---	---	4
	04/14/99	---	---	---	---	---	---	---	---	---	5
	02/10/00	750	440	4	<1	170	<1	76	77	170	5
	04/12/00	---	---	---	---	---	---	---	---	---	5
	05/25/00	---	---	---	---	---	---	---	---	---	6
	05/24/01	---	---	---	---	---	---	---	---	---	6
	05/24/02	---	---	---	---	---	---	---	---	---	5

TABLE D-4 (cont'd)

SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

WELLS 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
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
	03/03/94	660	345	9	<1	124	2	86	73	119	2
	03/30/95	---	---	---	---	---	---	---	---	---	2
	03/20/97	660	370	6	<1	125	1	81	73	100	2
	07/07/97	---	---	---	---	---	---	---	---	---	<2
	07/27/98	---	---	---	---	---	---	---	---	---	2
	06/03/99	---	---	---	---	---	---	---	---	---	<2
	03/07/00	720	380	9	<1	140	2	81	80	130	3
	06/21/00	---	---	---	---	---	---	---	---	---	2
	06/27/01	---	---	---	---	---	---	---	---	---	2
	06/05/02	---	---	---	---	---	---	---	---	---	<2
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
	05/13/94	730	460	50	15	78	5	73	110	195	1
	05/16/95	---	---	---	---	---	---	---	---	---	<1
	07/18/95	860	520	59	17	100	4	90	130	223	1
	07/20/98	900	590	69	20	110	5	89	150	230	2
	01/06/99	---	---	---	---	---	---	---	---	---	2
	02/03/99	---	---	---	---	---	---	---	---	---	2
	04/14/99	---	---	---	---	---	---	---	---	---	3
	06/03/99	---	---	---	---	---	---	---	---	---	3
	07/27/99	---	---	---	---	---	---	---	---	---	5
	08/11/99	---	---	---	---	---	---	---	---	---	4
	09/15/99	---	---	---	---	---	---	---	---	---	4
	10/21/99	---	---	---	---	---	---	---	---	---	4
	11/02/99	---	---	---	---	---	---	---	---	---	3
	12/15/99	---	---	---	---	---	---	---	---	---	3
	05/03/00	---	---	---	---	---	---	---	---	---	2
	05/16/01	800	500	57	17	74	5	63	180	150	3
	05/01/02	---	---	---	---	---	---	---	---	---	2
No. 133	03/28/90	970	605	50	20	112	5	120	131	235	3
8S/1W-7C	03/11/93	970	580	48	19	120	4	110	140	204	3
	06/06/95	---	---	---	---	---	---	---	---	---	2
	07/18/95	850	680	26	10	142	2	120	100	174	2
	06/23/97	---	---	---	---	---	---	---	---	---	3
	07/20/98	790	500	24	9	140	2	96	93	170	2
	08/02/00	---	---	---	---	---	---	---	---	---	3
	03/28/01	800	460	22	10	130	2	98	100	170	<2
	08/02/01	---	---	---	---	---	---	---	---	---	<2
	09/18/02	---	---	---	---	---	---	---	---	---	2

TABLE D-4 (cont'd)

SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

WELLS 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
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
	08/06/92	1800	810	63	33	170	1	200	160	281	---
	01/16/97	---	---	---	---	---	---	---	---	---	3.7 @N
	02/04/97	---	---	---	---	---	---	---	---	---	3.5 @N
	02/12/97	---	---	---	---	---	---	---	---	---	4.0 @N
	02/20/97	---	---	---	---	---	---	---	---	---	3.4 @N
	02/25/97	---	---	---	---	---	---	---	---	---	3.4 @N
	03/04/97	---	---	---	---	---	---	---	---	---	3.7 @N
	03/18/97	---	---	---	---	---	---	---	---	---	3.3 @N
	03/25/97	---	---	---	---	---	---	---	---	---	3.5 @N
	04/08/97	---	---	---	---	---	---	---	---	---	3.4 @N
	04/15/97	---	---	---	---	---	---	---	---	---	3.4 @N
	04/22/97	---	---	---	---	---	---	---	---	---	3.5 @N
	05/06/97	1930	1050	97	48	220	2	340	190	360	3.3 @N
	05/14/97	---	---	---	---	---	---	---	---	---	3.4 @N
	05/21/97	---	---	---	---	---	---	---	---	---	3.3 @N
	06/04/97	---	---	---	---	---	---	---	---	---	3.3 @N
	06/11/97	---	---	---	---	---	---	---	---	---	3.3 @N
	06/18/97	---	---	---	---	---	---	---	---	---	3.3 @N
	06/25/97	---	---	---	---	---	---	---	---	---	3.3 @N
	07/02/97	---	---	---	---	---	---	---	---	---	3.3 @N
	09/17/97	1960	1260	---	---	---	---	430	220	---	13
No. 138	10/30/90	460	240	19	2	74	2	71	13	113	18
8S/2W-6F	10/06/93	420	240	11	<1	70	1	56	10	92	14
	10/11/96	430	270	9	<1	78	1	55	8.9	100	15
	04/14/99	---	---	---	---	---	---	---	---	---	5
	06/03/99	---	---	---	---	---	---	---	---	---	3
	10/26/99	430	240	10	<1	76	1	60	11	100	19
	03/13/00	---	---	---	---	---	---	---	---	---	5
	03/22/01	---	---	---	---	---	---	---	---	---	17
	03/13/02	---	---	---	---	---	---	---	---	---	21
	06/20/02	---	---	---	---	---	---	---	---	---	16
No. 139	12/29/87	460	295	24	7	65	1	60	11	104	7
7S/2W-32G	11/23/92	450	275	32	9	46	2	60	13	134	20
	12/19/95	500	298	36	12	50	2	72	12	156	2.8
	03/25/97	---	---	---	---	---	---	---	---	---	10
	03/13/00	---	---	---	---	---	---	---	---	---	9
	03/28/01	---	---	---	---	---	---	---	---	---	8
	03/11/02	530	280	29	10	57	2	73	13	140	9

TABLE D-4 (cont'd)

SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

WELLS 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
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
	02/28/95	560	325	36	11	58	2	94	14	140	12
	03/25/97	---	---	---	---	---	---	---	---	---	8
	02/27/98	650	360	31	11	76	2	95	16	130	5
	09/17/98	---	---	---	---	---	---	---	---	---	8
	05/16/01	---	---	---	---	---	---	---	---	---	11
	02/01/01	650	370	31	12	72	2	110	21	150	4
	05/24/02	---	---	---	---	---	---	---	---	---	7
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
	03/30/95	840	490	58	11	100	3	70	97	241	14
	03/25/97	---	---	---	---	---	---	---	---	---	15
	03/26/98	760	480	62	12	90	3	69	86	230	16
	01/04/99	---	---	---	---	---	---	---	---	---	14
	02/12/99	---	---	---	---	---	---	---	---	---	19
	10/21/99	---	---	---	---	---	---	---	---	---	17
	11/03/99	---	---	---	---	---	---	---	---	---	14
	12/14/99	---	---	---	---	---	---	---	---	---	14
	06/20/00	---	---	---	---	---	---	---	---	---	15
	01/04/01	700	450	52	6	84	3	75	70	190	15
	09/28/01	---	---	---	---	---	---	---	---	---	18
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
	03/03/94	690	370	24	3	114	2	93	68	131	11
	03/30/95	---	---	---	---	---	---	---	---	---	11
	03/25/97	600	330	15	2	110	1	87	44	89	9
	07/18/97	---	---	---	---	---	---	---	---	---	2.0 @N
	07/23/97	---	---	---	---	---	---	---	---	---	2.0 @N
	08/20/97	---	---	---	---	---	---	---	---	---	2.3 @N
	09/03/97	---	---	---	---	---	---	---	---	---	2.2 @N
	09/17/97	---	---	---	---	---	---	---	---	---	2.0 @N
	09/17/98	---	350	---	---	---	---	---	---	---	2.3 @N
	10/21/99	---	---	---	---	---	---	---	---	---	13
	03/07/00	730	400	21	3	120	2	84	68	140	12
	10/13/00	---	---	---	---	---	---	---	---	---	8
	10/10/01	---	---	---	---	---	---	---	---	---	8

TABLE D-4 (cont'd)

SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

WELLS 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
No. 144	09/14/88	610	335	8	<1	114	1	95	33	92	<1
7S/3W-27D3	12/19/95	730	420	34	1	124	1	120	33	186	<1
	12/20/00	690	400	28	1	120	<1	120	35	170	<2
	05/22/01	---	---	---	---	---	---	---	---	---	<2
	08/20/02	---	---	---	---	---	---	---	---	---	<2
No. 145	10/04/90	800	490	43	8	110	2	110	78	171	<1
7S/3W-28C	10/06/93	650	375	23	3	106	1	85	58	146	<1
	11/27/96	650	340	26	2	110	1	87	48	150	<2
	02/04/97	670	370	24	2	110	1	87	55	160	<2
	01/28/98	---	---	---	---	---	---	---	---	---	<2
	01/04/99	---	---	---	---	---	---	---	---	---	<2
	10/26/99	690	400	29	3	110	1	96	61	170	<2
	01/06/00	---	---	---	---	---	---	---	---	---	<2
	01/25/01	---	---	---	---	---	---	---	---	---	<2
	01/18/02	---	---	---	---	---	---	---	---	---	<2
No. 146	12/10/96	900	500	57	23	98	<1	100	64	280	15
7S/3W-28	03/02/00	---	---	---	---	---	---	---	---	---	4
No. 149	06/15/93	---	---	---	---	---	---	---	---	---	5
8S/1W-2C	10/10/01	---	---	---	---	---	---	---	---	---	4
	03/11/02	1040	610	61	23	120	4	100	170	250	4
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 7S/3W-34B Abandoned	09/20/88	5780	3410	280	114	840	5	1660	670	369	<1
No. 151	07/25/91	860	485	53	16	103	4	90	130	183	---
8S/2W-2G	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	---
	08/10/94	550	340	3	<1	110	1	59	22	119	<1
	06/16/97	---	---	---	---	---	---	---	---	---	<2
	08/14/97	540	300	2	<1	110	<1	44	10	160	<2
	09/16/98	---	---	---	---	---	---	---	---	---	<2
	01/06/00	510	300	1	<1	110	<1	33	4.6	180	<2

TABLE D-4 (cont'd)

SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

WELLS 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
No. 152 8S/1W-5K2	01/11/02	860	550	64	20	77	6	75	190	160	<2
No. 153	12/29/93	804	485	53	18	92	5	86	120	214	<1
8S/1W-5K3	04/13/99	880	540	63	23	79	5	68	220	150	<2
	04/11/00	---	---	---	---	---	---	---	---	---	2
	06/14/01	---	---	---	---	---	---	---	---	---	<2
	04/02/02	820	500	63	22	75	4.2	80	190	140	<2
No. 154 8S/1W-5L2	01/28/94	930	530	46	20	106	6	89	130	214	3
No. 155	09/16/93	680	355	22	2	108	1	90	64	104	<1
7S/3W-28C	02/23/95	760	445	30	3	126	1	120	82	140	4
	06/06/95	---	---	---	---	---	---	---	---	---	5
	08/14/97	---	---	---	---	---	---	---	---	---	4
	02/25/98	880	540	43	5	130	1	100	100	190	5
	07/27/98	---	---	---	---	---	---	---	---	---	3
	02/09/00	---	---	---	---	---	---	---	---	---	2
	09/13/00	690	410	23	2	120	<1	100	72	130	2
	02/14/01	---	---	---	---	---	---	---	---	---	5
	02/21/02	---	---	---	---	---	---	---	---	---	2
No. 157	04/13/99	930	600	59	21	110	7	95	150	240	<2
8S/1W-5L	04/11/00	---	---	---	---	---	---	---	---	---	2
	06/14/01	---	---	---	---	---	---	---	---	---	<2
	04/02/02	830	520	60	22	78	4.1	78	190	150	<2
No. 158	06/21/94	1090	620	67	23	124	7	120	170	259	---
8S/1W-5K	04/14/99	1050	660	63	24	120	7	110	160	270	<2
	04/11/00	---	---	---	---	---	---	---	---	---	2
	06/14/01	---	---	---	---	---	---	---	---	---	2
	04/02/02	900	550	61	22	92	5.7	93	190	180	<2
No. 201	03/28/91	530	315	19	6	83	2	83	16	110	2
7S/2W-27J	03/11/93	460	300	8	2	87	1	51	20	146	<1
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
	06/22/94	980	645	59	38	99	4	130	130	256	4
	06/07/95	---	---	---	---	---	---	---	---	---	5
	06/23/97	880	530	31	26	120	3	100	110	230	4
	08/14/97	---	---	---	---	---	---	---	---	---	3
	11/02/99	---	---	---	---	---	---	---	---	---	5
	06/22/00	820	580	94	18	58	<1	63	110	250	22
	07/12/00	880	570	43	33	120	3	100	130	240	7
	08/08/00	---	---	---	---	---	---	---	---	---	6
	11/22/00	---	---	---	---	---	---	---	---	---	5
	11/20/01	---	---	---	---	---	---	---	---	---	5

TABLE D-4 (cont'd)

SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

WELLS 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
No. 204	05/22/91	740	425	50	12	85	3	120	18	198	19
7S/2W-26G	05/13/94	690	375	37	7	85	3	130	19	125	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
	03/03/94	510	275	20	2	72	2	72	24	104	20
	04/26/95	---	---	---	---	---	---	---	---	---	22
	03/25/97	480	270	20	2	75	2	66	18	110	21
	05/09/01	410	270	21	3	67	1	60	17	120	23
	11/13/01	---	---	---	---	---	---	---	---	---	21
	02/19/02	---	---	---	---	---	---	---	---	---	20
	05/14/02	---	---	---	---	---	---	---	---	---	18
	08/27/02	---	---	---	---	---	---	---	---	---	20
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
	08/10/94	440	285	2	<1	91	1	56	29	76	2
	08/15/97	510	280	2	<1	97	<1	52	25	98	<2
	07/27/98	---	---	---	---	---	---	---	---	---	2
	12/27/00	480	280	2	<1	100	<1	53	30	120	2
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
	08/10/94	560	370	22	6	89	2	93	20	156	5
	06/06/95	---	---	---	---	---	---	---	---	---	4
	08/12/96	---	---	---	---	---	---	---	---	---	2
	07/27/99	---	---	---	---	---	---	---	---	---	15
	08/18/99	---	---	---	---	---	---	---	---	---	20
No. 209	05/22/91	790	435	40	14	105	2	150	35	162	8
7S/2W-28J	05/13/94	760	525	64	22	48	3	150	15	153	25
	06/20/95	---	---	---	---	---	---	---	---	---	5
	05/15/97	690	390	10	3	130	<1	110	56	130	1.3
No. 210	04/15/59	1366	---	101	23	150	10	149	200	275	3
8S/2W-12K	01/18/63	400	926	99	30	17.5	4.5	145	255	329	4
	11/30/67	1415	890	136	5	152	10	146	230	305	3
	07/26/68	1250	825	96	22	144	8	130	190	290	5
	09/06/68	1310	840	82	26	132	5	142	222	276	12
	07/19/73	1200	579	84	21.4	149	6.8	122	237	301	19.7
	08/08/75	1140	695	84	14	150	6	101	190	287	15
	06/22/76	1240	675	76	26	142	7	101	205	278	36
	10/13/76	1120	640	92	22	100	6	110	170	262	5

TABLE D-4 (cont'd)

SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

WELLS 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
No. 210 (Cont'd)	06/16/77	1130	610	84	18	114	6	110	170	259	11
8S/2W-12K	05/20/80	580	340	30	8	75	4	51	67	152	9
	04/03/86	800	540	65	17	86	4.5	75	112	235	3.5
	07/15/86	830	560	72	19	86	4	87	118	250	4
	03/28/88	1030	575	76	22	93	5	99	143	247	4
	09/25/91	1040	600	74	20	120	5	120	160	238	5
	09/19/94	645	460	52	14	79	4	70	100	198	2
	09/16/96	---	---	---	---	---	---	---	---	---	3
	09/16/98	---	---	---	---	---	---	---	---	---	3
	12/15/98	---	---	---	---	---	---	---	---	---	2
	01/04/99	---	---	---	---	---	---	---	---	---	2
	02/03/99	---	---	---	---	---	---	---	---	---	2
	04/08/99	---	---	---	---	---	---	---	---	---	3
	06/02/99	---	---	---	---	---	---	---	---	---	3
	09/07/99	---	---	---	---	---	---	---	---	---	4
	10/21/99	---	---	---	---	---	---	---	---	---	5
	12/15/99	---	---	---	---	---	---	---	---	---	5
	05/03/00	---	---	---	---	---	---	---	---	---	5
	09/13/00	830	560	64	17	100	4	74	190	180	4
	05/08/01	---	---	---	---	---	---	---	---	---	4
	05/13/02	---	---	---	---	---	---	---	---	---	3
No. 211	04/08/97	720	400	67	14	54	1	59	65	220	13
8S/2W-20R1	12/23/97	---	410	---	---	---	---	---	---	---	3.1@N
	03/25/98	---	620	---	---	---	---	---	---	---	3.6@N
	06/03/98	---	---	---	---	---	---	---	---	---	3.4@N
	06/05/98	---	480	---	---	---	---	---	---	---	---
	09/17/98	---	---	---	---	---	---	---	---	---	3.3@N
	12/17/98	---	430	---	---	---	---	56	66	---	16
	06/03/99	---	430	---	---	---	---	---	---	---	3.4@N
	12/14/99	---	310	---	---	---	---	---	---	---	10
	04/04/00	700	430	71	14	52	1	57	66	220	17
	06/22/00	---	400	---	---	---	---	---	---	---	15
	12/13/00	---	---	---	---	---	---	---	---	---	4.5@N
	03/27/01	---	---	---	---	---	---	---	---	---	4.5@N
	06/20/01	---	---	---	---	---	---	---	---	---	2.7@N
	09/13/01	---	---	---	---	---	---	---	---	---	4.7@N
	11/13/01	---	450	---	---	---	---	---	---	---	---
	05/14/02	---	370	---	---	---	---	---	---	---	12
No. 212	03/28/88	640	330	42	2	74	3	81	33	146	14
8S/2W-11N	09/25/91	600	320	41	2	82	4	86	35	146	14
No. 215	08/15/90	650	380	40	13	71	3	100	14	162	11
7S/2W-34M	09/26/90	---	---	---	---	---	---	---	---	---	13
	06/22/94	630	400	41	13	67	2	110	16	159	11
	06/16/97	630	370	29	9	81	2	110	16	160	6
	08/15/97	---	---	---	---	---	---	---	---	---	7

TABLE D-4 (cont'd)

SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

WELLS 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
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
	04/25/01	490	300	28	4	55	2	74	13	120	12
No. 217	03/28/88	580	285	8	1	108	1	81	20	113	15
8S/2W-17M1	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
	08/10/94	610	365	20	3	97	2	82	38	134	16
	08/15/97	660	370	20	3	107	1	80	41	130	13
	05/09/00	---	---	---	---	---	---	---	---	---	15
	10/12/00	650	380	19	2	110	1	81	49	150	16
	05/14/01	---	---	---	---	---	---	---	---	---	17
	05/14/02	---	---	---	---	---	---	---	---	---	12
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
	06/20/95	1640	1300	171	44	124	6	75	520	287	5.3
	02/27/98	---	---	---	---	---	---	---	---	---	3
	05/16/00	---	---	---	---	---	---	---	---	---	5
	05/24/01	1490	1080	140	35	120	5	120	340	330	3
	05/13/02	---	---	---	---	---	---	---	---	---	2
No. 232	08/15/90	960	590	71	19	110	5	98	130	235	30
8S/2W-11J3	09/26/90	---	---	---	---	---	---	---	---	---	35
	09/25/91	980	565	74	19	106	5	98	120	244	37
	09/19/94	805	495	54	14	92	4	80	110	207	15
	09/13/96	---	---	---	---	---	---	---	---	---	22
	11/04/97	1000	660	76	20	110	4	97	130	230	29
	07/27/98	---	---	---	---	---	---	---	---	---	38
	12/10/98	---	---	---	---	---	---	---	---	---	22
	01/06/98	---	---	---	---	---	---	---	---	---	30
	01/29/99	---	---	---	---	---	---	---	---	---	10
	02/03/99	---	---	---	---	---	---	---	---	---	26
	02/24/99	---	---	---	---	---	---	---	---	---	37
	04/08/99	---	---	---	---	---	---	---	---	---	33
	04/21/99	---	---	---	---	---	---	---	---	---	34
	06/23/99	---	---	---	---	---	---	---	---	---	33
	07/08/99	---	---	---	---	---	---	---	---	---	36
	08/25/99	---	---	---	---	---	---	---	---	---	33
	09/21/99	---	---	---	---	---	---	---	---	---	31

TABLE D-4 (cont'd)

SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

WELLS 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
No. 232 (cont'd)	10/06/99	---	---	---	---	---	---	---	---	---	30
8S/2W-11J3	11/17/99	---	---	---	---	---	---	---	---	---	32
	12/14/99	---	---	---	---	---	---	---	---	---	32
	01/18/00	---	---	---	---	---	---	---	---	---	31
	02/29/00	---	---	---	---	---	---	---	---	---	10
	03/21/00	---	---	---	---	---	---	---	---	---	25
	04/11/00	---	---	---	---	---	---	---	---	---	29
	05/25/00	---	---	---	---	---	---	---	---	---	26
	06/21/00	---	---	---	---	---	---	---	---	---	26
	07/11/00	---	---	---	---	---	---	---	---	---	25
	09/13/00	920	590	65	17	105	4	91	150	210	21
	10/06/00	---	---	---	---	---	---	---	---	---	18
	11/08/00	---	---	---	---	---	---	---	---	---	17
	12/13/00	---	---	---	---	---	---	---	---	---	20
	01/04/01	---	---	---	---	---	---	---	---	---	19
	02/28/01	---	---	---	---	---	---	---	---	---	10
	04/10/01	---	---	---	---	---	---	---	---	---	20
	10/10/01	---	---	---	---	---	---	---	---	---	26
	05/14/02	---	---	---	---	---	---	---	---	---	22
	08/06/02	---	---	---	---	---	---	---	---	---	4*
No. 233 (Old 112)	06/15/88	900	535	71	21	100	5	96	136	247	4
8S/2W-12K2	03/27/91	1020	580	66	19	114	5	95	140	247	12
	03/03/94	740	425	50	14	75	4	71	100	186	2
	04/27/95	---	---	---	---	---	---	---	---	---	6
	03/27/97	880	510	57	15	100	4	81	120	220	4
	01/04/99	---	---	---	---	---	---	---	---	---	5
	02/03/99	---	---	---	---	---	---	---	---	---	4
	04/08/99	---	---	---	---	---	---	---	---	---	4
	06/03/99	---	---	---	---	---	---	---	---	---	4
	07/20/99	---	---	---	---	---	---	---	---	---	5
	08/11/99	---	---	---	---	---	---	---	---	---	4
	09/07/99	---	---	---	---	---	---	---	---	---	4
	10/21/99	---	---	---	---	---	---	---	---	---	5
	11/03/99	---	---	---	---	---	---	---	---	---	4
	04/11/00	970	570	64	18	110	4	85	150	230	4
	10/06/00	---	---	---	---	---	---	---	---	---	3
	10/10/01	---	---	---	---	---	---	---	---	---	4
	08/06/02	---	---	---	---	---	---	---	---	---	26*
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
	06/20/95	---	---	---	---	---	---	---	---	---	11
	09/26/96	---	---	---	---	---	---	---	---	---	9

* Samples may have been switched

TABLE D-4 (cont'd)

SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

WELLS 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
No. 234 (cont'd)	02/04/97	---	---	---	---	---	---	---	---	---	12
(Old 114)	04/25/97	840	500	56	15	95	4	77	120	230	8
8S/2W-11P	01/19/99	---	---	---	---	---	---	---	---	---	12
	02/12/99	---	---	---	---	---	---	---	---	---	16
	04/21/99	---	---	---	---	---	---	---	---	---	15
	06/03/99	---	---	---	---	---	---	---	---	---	16
	07/27/99	---	---	---	---	---	---	---	---	---	18
	08/19/99	---	---	---	---	---	---	---	---	---	17
	09/21/99	---	---	---	---	---	---	---	---	---	16
	10/26/99	---	---	---	---	---	---	---	---	---	13
	04/13/00	900	550	64	18	10	4	70	150	220	13
	07/06/00	---	---	---	---	---	---	---	---	---	12
	07/12/01	---	---	---	---	---	---	---	---	---	7
	08/02/01	---	---	---	---	---	---	---	---	---	<2
No. 235 (Old 137)	06/24/88	460	310	40	10	41	2	58	10	140	15
8S/3W-1Q1	06/20/90	420	230	22	4	56	2	50	6	128	18
	06/10/93	370	235	15	2	65	2	51	9	113	17
	07/16/96	410	230	16	2	60	1	48	8.9	110	20
	06/09/97	---	---	---	---	---	---	---	---	---	17
	06/03/99	390	240	13	1	63	1	46	6.7	98	17
	11/03/99	---	---	---	---	---	---	---	---	---	16
	11/09/00	---	---	---	---	---	---	---	---	---	15
	11/20/01	---	---	---	---	---	---	---	---	---	13
	06/11/02	380	210	10	<1	62	1.2	48	7.2	100	16
No. 301	07/29/92	500	290	20	6	80	1	45	56	143	<1
7S/3W-18Q1	02/27/97	580	350	45	16	48	2	49	54	200	4
	08/15/97	---	---	---	---	---	---	---	---	---	6
	12/27/00	570	360	49	15	53	2	55	57	180	7
	02/22/02	---	---	---	---	---	---	---	---	---	<2
	05/14/02	550	340	---	---	---	---	57	50	---	3
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	---	---
	05/05/94	870	530	69	16	84	2	110	88	238	<1
	05/16/95	---	---	---	---	---	---	---	---	---	<1
	07/16/96	530	320	---	---	---	---	60	54	---	2
	05/13/97	560	500	73	14	94	2	110	86	240	<2
	07/27/99	---	---	---	---	---	---	---	---	---	<2
	05/17/00	520	320	11	1	99	<1	51	50	130	<2
	06/13/00	520	310	---	---	---	---	---	---	---	<2
	07/11/00	---	---	---	---	---	---	---	---	---	<2
	12/20/01	790	500	---	---	---	---	110	140	---	<2

TABLE D-4 (cont'd)

SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

WELLS 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
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
	08/11/94	730	430	20	2	120	2	160	30	73	5
	02/16/95	---	---	---	---	---	---	---	---	---	18
	07/16/97	---	---	---	---	---	---	---	---	---	1.1@N
	07/23/97	---	---	---	---	---	---	---	---	---	1.2@N
	08/20/97	---	---	---	---	---	---	---	---	---	1.1@N
	09/03/97	---	---	---	---	---	---	---	---	---	1.1@N
	09/18/97	---	---	---	---	---	---	---	---	---	1.1@N
	10/03/97	790	520	21	2	130	2	170	33	85	6
	08/06/98	---	---	---	---	---	---	---	---	---	6
	09/16/98	---	460	---	---	---	---	---	---	---	1.4@N
	07/20/99	---	---	---	---	---	---	---	---	---	6
	05/10/00	---	450	20	2	130	<1	---	---	85	---
	07/06/00	---	---	---	---	---	---	---	---	---	6
	08/02/00	740	450	21	2	140	1	180	38	87	7
	07/19/01	---	---	---	---	---	---	---	---	---	7

WATERMASTER
SANTA MARGARITA RIVER WATERSHED

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	.8 @N
	07/27/93	445	269	44	4.4	43	0.5	28	14	170	1.9 @N
	08/15/94	421	232	32	3.3	55	0.9	28	11	156	1.5 @N
	08/30/95	375	200	21	2.2	55	0.6	31	11	129	.7 @N
	08/27/96	---	---	---	---	---	---	---	---	---	1.5 @N
	08/13/97	398	241	20	2.1	59	0.62	37	11	130	.572 @N
	08/20/98	481	282	36	3.9	60	0.85	38	14	167	1.1 @N
	08/25/99	446	252	28	3.1	59	0.66	41	12	---	.758@N
	08/22/00	456	265	29	3.3	61	0.73	39	14	---	.759@N
	08/21/01	522	320	51	5.9	48	1.0	42	16	---	1.73@N
	08/21/02	457	284	33	3.7	61	0.87	41	13	---	1.09@N
8S/2W-35D01	08/03/89	660	358	43	5.5	87	1.2	78	35	169	.35 @N
	07/26/90	669	384	41	4.9	92	1.5	82	36	176	.40 @N
	07/17/91	641	371	40	4.4	98	1.7	81	36	175	.39 @N
	07/27/93	638	374	49	5.9	79	1.8	71	27	199	.34 @N
	08/16/94	601	334	30	3.2	95	1.5	71	29	163	.16 @N
	08/30/95	587	322	33	4	81	1.5	68	25	178	.11 @N
	08/27/96	596	352	28	3.3	92	1.4	72	29	167	.10 @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
	08/15/94	363	216	33	12	25	0.5	24	7.7	132	2.6 @N
	08/31/95	363	208	32	11	23	0.4	21	8.1	137	2.6 @N
	08/28/96	---	---	---	---	---	---	---	---	---	2.9 @N
	08/12/97	368	238	32	12	24	0.44	22	7.4	138	3.05 @N
	08/19/98	411	246	36	11	31	0.45	25	8.2	153	2.94@N
	08/25/99	375	222	33	12	23	0.39	20	6.7	---	3.81@N
	08/22/00	374	237	33	12	24	0.42	18	7.3	---	3.48@N
	08/21/01	374	236	34	12	24	0.46	20	7.3	---	3.56@N
8S/2W-34B04	10/05/89	617	371	51	8.2	67	1	58	30	192	.47 @N
	07/26/90	605	341	50	8	65	1	61	31	194	.50 @N
	07/18/91	564	339	46	7.4	67	1	53	27	185	.87 @N
	07/27/93	267	170	18	2.8	34	0.5	14	9.7	96	1.10 @N

* - Alkalinity as CAC02

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-28Q02	10/05/89	629	378	48	19	49	0.7	76	14	169	4.2 @N
	07/26/90	613	383	48	18	47	0.6	75	12	171	3.9 @N
	07/18/91	618	379	49	18	49	0.7	83	14	172	3.0 @N
	07/28/93	620	400	51	20	47	0.7	63	15	174	9.6 @N
	08/17/94	641	396	51	21	50	0.8	60	17	179	11.0 @N
	08/31/95	653	396	53	21	48	0.7	60	19	184	12.0 @N
	08/28/96	---	---	---	---	---	---	---	---	---	11.0 @N
	08/12/97	614	411	47	19	47	0.7	63	15	176	8.9 @N
	08/19/98	625	402	47	20	47	0.7	60	14	---	9.85@N
	08/21/02	598	394	47	19	46	0.7	64	15	---	8.5@N
8S/2W-28Q06	09/17/93	312	200	19	2.9	43	1	16	2.8	126	1.0 @N
	08/30/95	310	174	16	3.4	46	0.6	16	3.8	131	1.4 @N
	08/13/97	300	186	11	1.4	55	0.59	17	2.7	122	1.16 @N
	08/20/98	434	247	12	0.7	79	0.6	57	15	111	<.05@N
8S/2W-28Q07	08/20/98	367	223	13	1.4	66	0.57	32	10	121	.731@N
	08/25/99	377	216	13	1.4	63	0.52	32	9.8	---	.760@N
	08/22/00	384	234	18	2.1	62	0.68	28	11	---	1.14@N
	08/21/01	402	242	22	2.5	60	0.81	33	12	---	1.03@N
	08/21/02	383	238	18	2.1	65	0.75	30	11	---	1.2@N
8S/2W-20J01	08/15/90	1130	596	100	22	110	2.3	110	200	236	1.3 @N
	12/20/93	868	---	80	16	76	1.4	86	110	---	3.6 @N
8S/2W-20J02	08/15/90	404	216	42	6.3	38	0.8	27	12	159	1.2 @N
	12/20/93	408	---	42	6	35	0.8	29	12	---	1.2 @N
8S/2W-29B01	08/19/98	367	223	12	0.64	75	0.62	50	10	121	<.05@N
	08/26/99	393	219	12	0.72	68	0.56	46	11	---	<.05@N
	08/22/00	393	228	12	0.76	69	0.58	43	11	---	<.05@N
	08/21/01	398	231	11	0.62	72	0.57	49	15	---	.04@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

* - Alkalinity as CAC03

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-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
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
8S/2W-28M03	08/26/99	562	319	38	13	52	0.77	68	15	---	2.59 @N
8S/2W-29J02	08/26/99	565	329	39	15	47	1.6	66	14	---	2.67 @N
	08/22/00	562	337	39	15	47	1.5	65	14	---	2.70@N
	08/21/01	574	351	40	15	50	1.6	70	15	---	2.63@N
	08/21/02	554	345	41	16	50	1.8	68	14	---	2.93@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

WATERMASTER
SANTA MARGARITA RIVER WATERSHED

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	10/60	1060	639	66.5	24.0	116.0	4.5	160	110.0	264.0	trace
(Bldg 2201)	06/62	1190	718	60.0	33.2	123.0	3.8	190	124.0	232.0	1.4
	07/64	1217	734	79.2	27.8	144.0	1.6	180	150.0	248.9	---
	05/65	1485	896	75.2	30.3	158.0	2.4	180	120.0	253.8	0
	01/66	---	808	76.8	33.2	157.0	3.4	170	180.0	292.8	0.62
	06/66	---	684	75.2	26.8	112.0	2.4	128	148.0	263.5	3.9
	01/67	---	856	81.6	26.3	138.0	3.5	162	140.0	310.0	3
	08/67	---	880	99.2	38.1	156.0	3.6	160	230.0	322.1	5.3
	02/68	---	768	65.6	25.4	156.0	3.4	160	164.0	236.7	0
	04/69	---	852	66.0	32.0	162.0	3.2	166	210.0	249.0	0
	11/69	---	844	87.0	31.0	140.0	3.6	164	180.0	262.0	0
	07/70	---	672	99.0	32.0	139.0	3	158	205.0	259.0	2.7
	12/70	1180	712	83.0	28.0	138.0	3	166	170.0	266.0	0
	09/71	1062	640	83.0	27.0	128.0	2.8	136	175.0	278.0	0.4
	05/72	1130	681	56.0	24.0	140.0	2.8	136	165.0	220.0	0
	10/72	1165	703	64.0	27.0	159.0	3.6	132	180.0	293.0	1.8
	10/73	1140	688	72.0	27.0	131.0	3.8	144	190.0	200.0	0.3@N
	02/76	1140	688	70.4	28.3	143.0	3.1	132	182.0	273.3	1.8@N
	09/76	1100	663	67.0	25.0	152.0	2.5	152	131.0	327.0	2.8@N
	03/77	1080	651	67.0	28.0	173.0	3.1	128	160.0	254.0	4.4@N
	10/78	1150	694	70.0	25.0	120.0	3.5	139	145.0	253.8	<1@N
	06/79	1100	663	72.0	27.3	125.0	3	134	142.0	258.6	<1@N
	10/80	1200	693	78.8	23.7	136.0	3.3	172	136.0	273.3	0.2@N
	04/81	1160	737	82.4	22.4	126.0	3.6	140	134.0	268.4	<0.5@N
	11/81	1300	863	97.6	31.5	169.0	2.2	204	209.0	248.9	0.8@N
	11/81	950	573	74.0	18.3	120.0	2.1	144	130.0	224.5	0.3@N
	05/82	1100	663	80.8	26.6	140.0	1.5	181	138.0	268.4	<0.5@N
	03/83	1000	603	84.0	20.5	144.0	3.2	152	143.0	273.3	<0.5@N
	05/84	1150	694	80.0	27.6	126.0	3.1	133	150.0	283.0	0.2@N
	06/85	1100	680	89.0	26.0	140.0	3	150	64.0	440.0	<0.4
	09/85	1242	724	78.0	28.0	122.0	6	154	149.1	244.4	<0.4
	05/86	1387	750	85.2	29.1	130.7	4.3	166	130.8	242.6	<1
	06/89	1302	734	78.1	23.0	85.9	---	136	145.0	212.0	<0.4
	01/91	1271	---	81.0	36.1	152.0	---	166	---	---	<0.04
	06/91	1290	752	99.0	32.4	133.0	---	167	136.0	237.0	<0.4
	03/92	1210	792	91.0	29.8	146.0	---	159	135.0	279.0	<0.4
	06/93	1290	764	68.3	27.5	149.0	---	168	130.0	265.0	<0.4
	03/94	1210	783	100.0	37.1	100.0	---	145	167.0	---	2.2
	08/94	1160	741	87.5	35.5	96.1	---	141	187.0	---	4.23

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/5W-26C1	06/95	1330	806	97.7	37.4	142.0	---	207	166.0	---	<0.04
(Bldg 2201)	01/96	1300	764	91.0	33.0	140.0	---	177	142.0	363.0	<0.0
(Continued)	06/96	1300	751	93.0	30.0	130.0	---	164	156.0	252.0	<0.0
	06/97	1215	758	88.0	29.0	130.0	<2	151	148.0	292.0	<2@N
	12/97	1200	690	81.0	29.0	140.0	3	155	150.0	250.0	ND
	04/98	1200	790	83.0	31.0	101.0	3	170	156.0	240.0	ND
	06/98	1230	714	85.0	30.0	136.0	3	163	ND	293.0	ND
	02/99	1250	731	84.0	29.0	127.0	3	160	140.0	281.0	ND
	04/99	1220	769	88.0	30.0	127.0	3	138	160.0	317.0	ND
	05/01	1300	794	98.0	36.0	130.0	3	173	179.0	317.0	ND
10S/4W-18M4	06/89	1156	688	74.6	24.4	67.9	---	130	138.0	197.0	8.9
(Bldg 2373)	01/90	1120	630	86.4	32.3	101.0	---	156	166.0	210.0	<0.05
	04/90	1160	720	98.8	34.8	107.0	---	152	146.0	218.0	1.4
	01/91	1202	---	84.1	40.5	117.0	---	162	153.0	---	<0.04
	06/91	1180	736	102.0	37.1	106.0	---	163	138.0	197.0	<0.4
	03/94	1020	658	69.6	27.8	104.0	---	135	140.0	---	0.89
	08/94	1110	684	81.4	32.2	178.0	---	144	157.0	---	<0.44
	06/95	1170	679	95.3	35.2	113.0	---	145	116.0	---	13.8
	06/96	1100	682	86.0	32.0	95.0	---	155	261.0	210.0	<0.0
	02/97	1180	640	79.0	32.0	110.0	---	142	162.0	190.0	<2@N
	06/97	1117	709	85.0	33.0	110.0	<5	150	164.0	223.0	<2@N
	12/97	1100	700	82.0	33.0	110.0	3	141	157.0	220.0	ND
	03/98	1100	710	83.0	33.0	100.0	3	182	158.0	150.0	ND
	06/98	1200	720	85.0	34.0	119.0	4	159	154.0	281.0	ND
	02/99	1020	613	70.0	30.0	85.0	4	130	85.0	179.0	8
	05/00	1020	709	91.0	33.0	94.0	4	146	149.0	220.0	ND
	08/00	1160	707	81.0	39.0	79.0	4	149	153.0	177.0	ND
	02/01	1200	736	85.0	35.0	116.0	4	164	180.0	244.0	ND
	04/01	1200	606	85.0	34.0	112.0	4	154	177.0	232.0	ND
	09/01	1250	761	90.0	37.0	115.0	4	166	188.0	232.0	ND
	11/01	1290	737	91.0	37.0	118.0	3	181	207.0	256.0	ND
	02/02	1260	781	89.0	36.0	123.0	4.6	170	189.0	255.0	ND
	04/02	1250	755	90.0	37.0	116.0	4.1	175	195.0	200.0	ND
	05/02	1290	750	92.0	38.0	110.0	4	157	194.0	180.0	100@N
	07/02	1260	753	90.0	37.0	114.0	4	171	196.0	200.0	ND

ND - None Detected

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/5W-23J1	05/56	1090	685	61.5	24.3	142.0	---	142	110.0	293.0	0.06
(Bldg 2301)	12/56	1060	666	67.0	27.0	96.0	---	124	85.0	274.0	---
	12/57	---	780	66.3	23.9	159.0	---	138	155.0	308.0	10.6
	05/59	1100	691	75.2	25.3	112.0	---	136	152.0	297.7	---
	01/60	1120	704	72.7	27.3	116.5	---	112	144.0	291.0	---
	10/60	1045	657	63.2	21.4	99.0	3.6	140	112.0	242.0	0
	05/61	1280	770	76.0	36.5	136.0	3	124	195.0	299.6	0
	05/62	1133	712	68.8	30.3	136.0	2	128	175.0	275.7	---
	01/63	1111	698	72.0	35.1	127.0	2.8	128	199.0	268.4	---
	06/63	1108	696	78.4	25.4	118.0	2.9	148	130.0	258.6	0@N
	07/64	1165	732	74.4	27.8	128.0	1.2	139	160.0	268.4	---
	05/65	1130	710	80.0	26.4	145.0	2.1	148	120.0	268.4	0.14
	01/66	---	736	88.0	18.1	142.0	2.8	124	155.0	263.5	1.8
	06/66	---	736	75.2	29.3	138.0	2.7	145	175.0	295.2	4.8
	01/67	---	744	76.8	25.9	118.0	3	136	125.0	287.9	2.2
	08/67	---	680	70.4	28.3	128.0	2.3	140	100.0	292.8	8.4
	02/68	---	660	48.0	19.5	130.0	2.8	124	119.0	234.0	6.1
	04/69	---	708	70.0	28.0	126.0	2.5	128	170.0	278.0	0
	11/69	---	684	73.0	28.0	126.0	2.8	138	165.0	273.0	0
	05/70	---	716	74.0	25.0	122.0	0.1	134	170.0	210.0	4.4
	12/70	1090	385	78.0	25.0	126.0	2.6	142	170.0	250.0	3.1
	09/71	1025	644	75.0	38.0	120.0	2.7	124	190.0	229.0	0.9
	05/72	1050	660	75.0	21.0	124.0	2.3	124	155.0	244.0	2.2
	10/73	1140	716	74.0	22.0	128.0	2.8	136	160.0	220.0	0.5@N
	06/74	1060	680	74.0	13.0	131.0	2.9	158	138.0	220.0	0.01@N
	02/76	1050	660	73.6	25.4	136.0	2.9	119	170.0	248.9	2.0@N
	09/76	1100	691	58.0	32.0	146.0	2.6	140	148.0	321.8	2.6@N
	03/77	1080	679	69.0	29.0	110.0	3	128	155.0	259.0	4.3@N
	01/78	1100	691	70.0	23.0	147.0	3	140	135.0	259.0	4.4@N
	10/78	1150	723	74.0	22.0	120.0	2.9	134	149.0	248.9	<1@N
	04/79	1000	628	70.4	22.4	118.0	2.6	122	138.0	239.1	<1@N
	10/80	1150	745	74.0	22.5	128.0	3	152	138.0	239.1	0.2@N
	05/81	1020	580	67.2	17.3	116.0	3.1	132	111.0	205.0	<0.5@N
	03/83	900	599	65.6	19.5	129.0	2.8	136	129.0	234.2	<0.5@N
	12/83	1000	628	72.4	22.4	127.0	2.6	140	150.0	249.0	<0.1@N
	05/84	1100	691	78.8	25.9	120.0	2.8	130	150.0	254.0	0.2@N
	06/85	1100	691	59.0	26.0	130.0	3	140	70.0	440.0	3.5
	09/85	1203	705	66.0	26.0	110.0	6	150	144.0	226.6	<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/5W-23J1	06/89	1139	662	71.5	21.7	80.8	---	117	128.0	209.0	<0.4
(Bldg 2301)	01/90	1150	632	90.6	32.4	102.0	---	160	170.0	214.0	<0.5
(Continued)	01/91	1112	---	73.7	32.0	128.0	---	136	136.0	---	<0.04
	06/91	1090	662	87.4	29.7	117.0	---	140	121.0	204.0	<0.4
	03/92	1080	644	74.2	25.8	133.0	---	127	118.0	282.0	1.3
	03/93	1210	674	72.8	24.5	117.0	---	127	124.0	261.0	<0.4
	06/93	1090	670	63.9	25.7	119.0	---	117	128.0	237.0	<0.4
	03/94	1120	683	73.9	27.0	121.0	---	141	130.0	---	<0.4
	08/94	1160	707	78.9	28.2	129.0	---	139	153.0	---	<0.44
	06/95	1160	742	88.2	28.8	131.0	---	165	147.0	---	<0.04
	01/96	1300	690	79.0	29.0	140.0	---	147	131.0	292.0	<0.0
	06/96	1020	674	82.0	29.0	120.0	---	134	129.0	204.0	<0.0
	02/97	1100	650	74.0	27.0	150.0	---	126	172.0	245.0	<2@N
	03/97	1073	630	77.0	28.0	130.0	---	142	134.0	254.0	<2@N
	02/99	1180	647	75.0	27.0	125.0	3	150	130.0	272.0	ND
	04/99	1240	722	81.0	30.0	124.0	3	157	150.0	293.0	ND
	08/99	1180	735	79.0	29.0	120.0	3	190	183.0	281.0	ND
	12/99	1190	699	83.0	30.0	118.0	3	100	158.0	278.0	ND
	02/00	1110	723	81.0	30.0	116.0	3	90	163.0	293.0	ND
	05/00	1070	714	81.0	29.0	115.0	3	170	152.0	273.0	ND
	08/00	1200	735	80.0	29.0	117.0	3	150	118.0	275.0	ND
	02/01	1230	730	84.0	31.0	132.0	ND	158	158.0	293.0	ND
	04/01	1190	636	81.0	30.0	123.0	3	146	148.0	287.0	ND
	09/01	1300	751	88.0	32.0	132.0	3	155	160.0	293.0	ND
	10/01	1380	757	88.0	33.0	133.0	3	152	159.0	311.0	ND
	02/02	1220	724	86.0	31.0	124.0	2	146	156.0	293.0	ND
	04/02	1210	726	89.0	32.0	124.0	2.8	ND	162.0	240.0	100@N
	07/02	1280	735	85.0	31.0	129.0	3.1	155	165.0	236.0	ND

ND - None Detected

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	06/89	1166	758	80.5	28.1	67.4	---	132	157	198.0	9.5
(Bldg 2393)	01/90	1230	748	97.4	39.7	106.0	---	178	179	226.0	<0.05
	04/90	1190	733	99.6	37.5	112.0	---	159	156	207.0	2.5
	06/91	1130	680	97.6	37.6	100.0	---	139	142	166.0	2.7
	02/94	1180	731	83.3	35.5	104.0	---	142	159	---	11.1
	08/94	1150	725	84.3	35.2	102.0	---	147	164	---	1
	06/95	932	636	75.4	29.1	86.6	---	102	140	---	14
	06/96	1117	710	92.0	36.0	93.0	---	180	297	206.0	<0.0
	02/97	1100	686	89.0	38.0	110.0	---	157	166	220.0	<2@N
	03/97	1116	673	87.0	36.0	110.0	---	147	113	213.0	<2@N
	06/97	1131	779	90.0	37.0	99.0	<5	151	177	199.0	<2@N
	09/98	1160	727	83.0	36.0	90.0	3	160	181	232.0	ND
	10/99	1200	325	88.0	39.0	117.0	4	130	180	268.0	ND
	02/00	1100	739	84.0	37.0	100.0	4	130	180	281.0	ND
	05/00	1030	717	80.0	35.0	96.0	4	168	183	229.0	2
	02/01	1360	798	97.0	44.0	111.0	4	184	212	244.0	ND
	04/01	1310	728	94.0	42.0	114.0	4	168	208	232.0	ND
	09/01	1330	791	96.0	42.0	115.0	4	173	209	224.0	ND
	03/02	1320	778	102.0	44.0	123.0	4.4	196	229	242.0	ND
	04/02	1300	808	101.0	44.0	117.0	4	183	220	200.0	ND
	07/02	1390	778	96.0	42.0	114.0	3.7	180	214	209.0	ND
10S/4W-7R2	06/89	1281	765	76.5	25.1	82.4	---	149	153	209.0	10.3
(Bldg 2603)	04/89	1270	788	104.0	36.5	126.0	---	173	161	215.0	2.6
	06/91	1400	836	111.0	41.1	130.0	---	195	155	215.0	0.04
	02/94	1260	738	83.3	32.0	131.0	---	169	155	---	<0.04
	08/94	1260	738	84.3	33.7	129.0	---	166	149	---	<0.44
	06/95	1290	897	93.6	35.2	129.0	---	202	164	---	0.69
	02/97	1200	720	84.0	36.0	130.0	---	150	152	240.0	<1@N
	03/97	1143	708	83.0	35.0	130.0	---	152	137	240.0	<2@N
	06/97	1227	831	94.0	34.0	120.0	<5	185	147	247.0	<2@N
	12/97	1200	700	84.0	36.0	120.0	3	150	173	240.0	ND
	03/98	1200	780	85.0	36.0	110.0	3	187	162	180.0	ND
	06/98	1190	734	ND	ND	ND	ND	ND	ND	ND	ND
	12/97	1200	700	84.0	36.0	120.0	3	150	173	240.0	ND
	03/98	1200	780	85.0	36.0	110.0	3	187	162	180.0	ND
	06/98	1190	734	ND	ND	ND	ND	ND	ND	ND	ND
	02/99	1160	663	76.0	32.0	102.0	3.0	150.0	150.0	214.0	ND
	08/99	1120	727	76.0	33.0	99.0	3.0	156.0	230.0	281.0	ND
	10/99	1130	660	78.0	33.0	120.0	3.0	110.0	160.0	262.0	ND
	02/00	1030	592	79.0	35.0	95.0	3.0	120.0	160.0	244.0	ND
	05/00	1010	699	76.0	33.0	96.0	3.0	129.0	127.0	229.0	ND
	08/00	1140	720	77.0	33.0	87.0	3.0	ND	157.0	232.0	ND

ND - None Detected

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-7H2	08/56	1060	882	78.0	30.0	112	---	150	82	326.0	---
(Bldg 2671)	01/60	820	500	55.2	14.7	85.0	---	76	98	224.0	---
	10/60	1300	793	74.5	20.5	126.0	4.3	182	116	320.0	---
	05/61	1390	840	100.0	29.2	170.0	3.3	170	135	362.0	---
	05/62	1220	744	70.4	39.0	142.0	2.4	184	86	312.3	---
	01/63	1300	740	65.6	26.4	162.0	2.4	166	153	259.0	0.7
	07/63	1100	671	64.0	25.4	118.0	2.7	148	97	280.6	0.0@N
	01/64	1020	622	70.4	33.2	117.0	2.7	172	98	302.6	3.3
	07/64	1400	854	83.2	27.3	134.0	1.4	164	98	322.1	---
	04/65	1490	909	97.6	23.4	152.0	4.7	196	110	346.5	0.9
	01/66	---	832	102.0	28.0	166.0	3.1	194	88	414.8	6.6
	06/66	---	768	86.4	26.3	150.0	3.1	184	110	331.8	6.9
	01/67	---	768	72.0	29.3	128.0	3.1	174	72	324.5	6.9
	08/67	---	608	57.6	24.4	116.0	2.4	132	70	251.3	10.2
	02/68	---	572	67.2	17.6	105.0	2.4	118	94	251.0	0
	09/68	---	636	74.0	19.0	112.0	3	144	96	268.0	0.4
	04/69	---	820	72.0	33.0	138.0	2.8	180	140	285.0	0.9
	11/69	---	604	66.0	24.0	116.0	2.8	140	110	259.0	1.8
	05/70	---	640	65.0	26.0	115.0	2.4	142	120	183.0	3.1
	09/71	1075	656	77.0	24.0	120.0	2.8	144	125	273.0	1.3
	05/72	1000	610	46.0	24.0	117.0	2.4	140	130	141.0	0
	10/72	1110	677	88.0	26.0	105.0	3.6	144	126	283.0	3.5
	10/73	1120	683	75.0	23.0	118.0	2.7*	132	130	200.0	0.6@N
	06/74	1210	712	72.0	19.0	150.0	3.1	208	112	195.0	0.01@N
	01/75	850	519	61.0	21.0	93.0	2.4	102	95	212.0	2.3@N
	02/76	1200	732	91.2	20.5	126.0	3.2	176	130	244.0	2.6@N
	09/76	1200	732	48.0	29.0	180.0	2.4	192	123	336.7	4.2@N
	03/77	1400	854	94.0	33.0	158.0	2.8	216	140	342.0	2.8@N
	01/78	1000	610	66.0	23.0	100.0	2.7	128	123	205.0	4.4@N
	10/78	1300	793	82.0	31.0	134.0	2.7	160	157	258.6	<1@N
	04/79	1200	732	84.8	28.3	144.0	3.1	164	116	312.3	<1@N
	01/80	1450	885	93.0	30.0	163.0	3	196	200	273.0	<1@N
	10/80	1050	591	70.4	21.7	104.0	3.7	140	125	219.6	2.0@N
	05/81	1000	645	72.4	21.7	105.0	3.5	128	123	209.8	<0.5@N
	05/82	1330	811	100.8	35.9	176.0	1.6	269	198	263.5	<0.5@N

* Reported as 27

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-7H2	03/83	890	669	77.2	23.7	95.0	3.4	132	136	209.8	0.65@N
(Bldg 2671)	12/83	1000	610	70.4	23.7	123.0	2.6	136	150	224.0	0.5@N
(Continued)	05/84	1100	671	77.2	24.6	116.0	2.7	133	155	244.0	0.2@N
	09/84	1300	650	6.6	29.0	120.0	2.6	200	170	250.0	12
	11/84	1100	671	81.6	23.4	124.0	2.7	149	175	249.0	1.2@N
	05/86	1592	994	104.7	39.7	167.3	4.4	232	167	301.8	<1@N
	06/89	1137	826	79.1	28.5	85.5	---	157	158	246.0	12.6
	01/90	1290	772	96.3	38.6	116.0	---	184	179	252.0	0.9/1.2
	04/90	1320	817	109.0	42.1	128.0	---	177	167	249.0	5.4
	01/91	401	---	87.3	44.4	103.1	---	205	179	---	1.07
	03/93	1500	824	92.6	33.1	136.0	---	194	154	277.0	1.8
	03/94	1370	827	103.0	36.4	135.0	---	163	145	---	0.9
	08/94	1270	762	91.1	35.5	129.0	---	162	172	---	5.64
	06/95	1260	771	100.0	35.8	127.0	---	197	178	---	2.8
	06/96	1300	751	96.0	36.0	120.0	---	162	174	247.0	1.1
	02/97	1300	830	100.0	41.0	150.0	---	186	161	186.0	<2@N
	06/97	1323	831	94.0	36.0	140.0	<5	158	149	271.0	2@N
	12/97	1200	670	91.0	36.0	120.0	3	150	169	220.0	ND
	12/97	1200	710	87.0	35.0	120.0	2	152	182	220.0	1.5
	03/98	1200	810	89.0	36.0	120.0	3	201	168	240.0	ND
	06/98	1390	830	ND	ND	ND	ND	ND	ND	ND	ND
	09/98	1290	748	87.0	32.0	110.0	2.0	158	160	299	ND
	02/99	1130	663	75.0	31.0	106.0	3.0	150	150	238	5
	05/99	1170	711	75.0	32.0	85.0	4.0	ND	180	268	ND
	08/99	1040	310	74.0	30.0	94.0	2.0	100	400	207	ND
	10/99	1210	757	86.0	35.0	120.0	3.0	154	100	295	3
	08/00	1290	766	83.0	33.0	89.0	2.0	184	150	323	ND
	02/01	1140	707	85.0	35.0	107.0	2.0	152	179	232	ND
	04/01	1190	718	88.0	37.0	112.0	3.0	153	193	210	ND
	09/01	1200	729	89.0	38.0	106.0	3.0	158	192	201	ND
	11/01	1210	693	90.0	38.0	106.0	3.0	168	209	214	ND
	02/02	1190	726	94.0	39.0	106.0	2.7	147	198	208	ND
	04/02	1190	724	91.0	38.0	107.0	2.9	153	204	173	ND
	07/02	1200	755	88.0	37.0	107.0	3.1	162	201	180	ND

ND - None Detected

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	05/56	920	651	59.0	22.0	100	---	104	94	213.0	---
(Bldg 2673)	05/59	---	745	52.8	16.54	60.26	---	84	41	207.4	---
	01/60	---	840	51.2	17.6	95.0	---	98	92	210.0	---
	10/60	870	566	62.0	23.0	80.0	4.2	110	104	234.0	0
	05/61	1180	710	72.0	34.0	114.0	3.3	104	150	227.0	---
	05/62	797	518	63.2	23.4	75.0	2	100	96	214.7	---
	01/63	1195	730	64.0	24.9	157.0	3.1	162	183	220.0	0
	07/63	574	610	57.6	19.5	85.0	2.7	102	100	244.0	0.3@N
	01/64	760	494	59.2	19.3	82.0	3.3	100	85	253.7	0.5@N
	07/64	980	637	64.0	21.5	94.0	1.4	100	95	241.6	---
	04/65	1230	800	73.3	22.5	106.0	4.5	120	110	248.9	1.3
	01/66	---	448	---	---	86.0	2.5	82	75	190.3	9.7
	06/66	---	540	60.8	21.0	81.0	2.5	102	95	222.0	9.1
	01/67	---	544	60.8	19.5	88.0	2.9	106	69	229.4	6.9
	08/67	---	504	54.4	20.0	79.0	2.1	96	58	214.7	8
	02/68	---	456	60.8	17.6	86.0	2.7	94	78	222.0	0
	09/68	---	600	67.0	18.0	90.0	3	110	96	232.0	0
	04/69	---	428	46.0	18.0	73.0	20	76	90	183.0	3.1
	11/69	---	476	59.0	18.0	88.0	2.7	98	110	198.0	0.9
	05/70	---	416	54.0	18.0	79.0	2.6	92	90	151.0	2.9
	12/70	780	507	64.0	16.0	89.0	2.7	100	90	222.0	10.1
	05/72	990	644	77.0	24.0	86.0	2.8	116	135	207.0	0
	10/72	965	627	77.0	27.0	94.0	2.9	104	145	239.0	5.3
	10/73	960	624	72.0	19.0	105.0	2.8	112	140	195.0	0.9@N
	06/74	950	548	68.0	19.0	101.0	3.1	138	102	207.0	0.35@N
	01/75	840	546	58.0	22.0	87.0	2.7	98	95	217.0	2.2@N
	02/76	820	533	68.8	20.5	76.0	3	106	88	214.7	2.2@N
	09/76	900	585	48.0	45.0	98.0	2.3	116	112	258.6	3.0@N
	03/77	900	585	70.0	23.0	76.0	2.8	123	113	195.0	2.6@N
	01/78	950	618	64.0	24.0	100.0	2.7	124	108	200.0	4.3@N
	10/78	1050	683	74.0	20.0	80.0	3	113	128	205.0	<1@N
	04/79	950	618	65.6	19.5	98.0	3.1	109	118	190.3	<1@N
	01/80	1000	650	67.0	23.0	99.0	3.1	128	111	187.0	<1@N
	10/80	900	546	67.2	20.5	86.0	3.4	108	86	205.0	2.3@N
	05/81	810	585	57.2	14.4	83.0	3.4	92	84	180.6	0.7@N
	11/81	800	451	57.2	16.3	85.0	2	92	110	185.4	0.5@N
	05/82	930	605	68.8	21.5	97.0	1.6	115	96	205.0	<0.5@N
	03/83	900	663	78.8	23.7	95.0	3.4	132	135	209.8	0.7@N

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	09/84	1000	530	51.0	23.0	80.0	2.9	110	110	200.0	4.2
(Bldg 2673)	11/84	850	553	67.2	28.3	73.0	2.9	111	137	190.0	1.7@N
(Continued)	09/85	1007	593	66.0	26.0	64.0	5.8	124	139	180.6	6
	05/86	1051	623	72.6	26.5	79.5	3.5	131	124	153.6	8.8
	06/89	1073	688	72.1	23.9	59.6	---	120	140	184	15.9
	01/89	1080	572	91.2	34.2	80.2	---	151	178	174	1.4
	04/90	1130	718	111.0	42.1	91.0	---	148	167	175	9.1
	06/91	1190	718	113.0	40.3	93.8	---	173	180	160	7.5
	03/93	1370	708	86.9	32.8	93.3	---	147	93.3	200	4.9
	03/94	1210	783	100.0	37.1	100.0	---	145	167	---	2.2
	08/94	1160	741	87.5	35.5	96.1	---	141	184	---	4.23
	06/95	1200	788	99.4	37.5	101.0	---	173	200	---	2.9
	06/96	1129	739	91.0	37.0	90.0	---	188	312	206	<0.0
	02/97	1100	690	82.0	35.0	140.0	---	127	131	180	<2@N
	03/97	1109	695	91.0	39.0	93.0	---	137	191	166	2.2@N
	06/97	1096	749	89.0	36.0	90.0	<5	138	178	187	2@N
	12/97	1100	690	84.0	36.0	83.0	4	140	181	160	<.2@N
	05/99	1050	648	78.0	32.0	111.0	3	171	192	207	ND
	08/99	1040	696	78.0	33.0	84.0	4	120	390	146	ND
	10/99	1070	663	78.0	34.0	90.0	4	132	120	195	6@N
	02/00	1010	559	83.0	35.0	82.0	4	140	190	220	4@N
	05/00	972	688	80.0	34.0	79.0	4	144	167	190	4@N
	02/01	1200	753	92.0	40.0	100.0	3	164	212	195	ND
	04/01	1210	736	91.0	40.0	103.0	5	159	217	183	ND
	09/01	1200	741	93.0	41.0	98.0	4	153	228	183	ND
	11/01	1220	750	92.0	41.0	106.0	4	170	228	189	ND
	02/02	1230	769	99.0	43.0	101.0	4.2	173	218	195	ND
	04/02	1260	796	101.0	45.0	102.0	4.5	170	229	160	100@N
	07/02	1350	784	98.0	43.0	103.0	4.3	183	239	159	ND
10S/5W-23G3	06/91	1160	684	83.4	28.3	125.0	---	145	124	223	<0.04
(Bldg 33926)	03/92	1060	674	75.9	24.1	127.0	---	139	111	269	<0.4
	03/93	1182	584	67.8	21.1	110.0	---	135	101	274	<0.4
	06/93	1020	623	60.5	22.4	116.0	---	125	107	225	<0.4
	03/94	1120	665	80.0	25.0	122.0	---	129	117	---	1.8
	08/94	1150	699	78.7	26.4	125.0	---	141	118	---	<0.44
	06/95	1060	673	75.9	23.1	118.0	---	158	114	---	<0.04
	01/96	1200	619	71.0	24.0	120.0	---	139	107	262	<0.0
	07/96	---	---	---	---	---	---	---	---	---	<0.0

ND - None Detected

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/5W-23K2	06/89	1207	698	75.6	22.8	84.0	---	138	137	231	<0.4
(Bldg 33924)	04/89	1240	728	100.0	32.9	129.0	---	158	148	245	1.3
	01/91	1193	---	80.6	35.2	131.0	---	21.3	146	---	<0.04
	06/91	1160	676	88.1	29.6	118.0	---	141	129	224	<0.04
	03/92	1130	705	76.7	26.0	126.0	---	149	125	279	<0.4
	06/92	1130	717	66.8	26.7	124.0	---	146	140	232	<0.4
	03/93	1285	331	72.1	23.8	115.0	---	131	122	273	<0.4
	02/97	1200	780	89.0	32.0	130.0	---	166	165	250	<2@N
	03/97	1230	700	94.0	34.0	140.0	---	187	162	264	<2@N
	06/97	1231	778	91.0	31.0	130.0	<2	171	165	264	<2@N
	12/97	1200	710	82.0	30.0	130.0	2	156	162	230	ND
	03/98	1200	710	82.0	30.0	110.0	2	191	146	240	ND
	06/98	1170	658	79.0	28.0	123.0	2	157	ND	293	ND
	02/99	1170	696	75.0	27.0	123.0	3	160	130	259	ND
	04/99	1210	667	76.0	27.0	118.0	3	148	140	268	ND
	08/99	1140	714	79.0	27.0	116.0	3	180	165	268	ND
	10/99	1150	721	80.0	28.0	131.0	3	110	150	281	ND
	02/00	1050	619	82.0	28.0	108.0	3	100	140	293	ND
	05/00	1060	716	80.0	29.0	112.0	3	173	141	268	ND
	08/00	1210	722	82.0	29.0	105.0	3	162	156	268	ND
	04/01	1210	705	85.0	30.0	130.0	3	163	157	281	ND
	09/01	1210	672	85.0	30.0	125.0	3	163	149	281	ND
	10/01	1200	680	81.0	29.0	143.0	3	162	159	281	ND
	02/02	1160	675	80.0	29.0	129.0	3.5	143	152	268	ND
	04/02	1180	682	84.0	31.0	124.0	2.9	151	ND	230	ND
	04/02	1210	706	80.0	29.0	127.0	2.9	156	156	221	ND
10S/5W-13R2	01/90	1030	540	*96	26.6	94.8	---	141	130	200	0.7
(Bldg 2363)	06/91	1150	702	98.7	32.0	109.0	---	149	125	288	1.3
	06/93	1130	705	72.0	28.4	107.0	---	140	139	262	0.9
	03/94	1020	658	69.6	27.8	104.0	---	135	140	---	0.89
	06/95	1140	636	92.5	30.7	115.0	---	149	151	---	14.2
	06/96	1103	680	91.0	31.0	100.0	---	148	251	233	<0.0
	06/97	1082	708	85.0	29.0	110.0	<5	135	145	244	<2@N
	12/97	1000	640	81.0	28.0	100.0	2	119	128	250	ND

* - Reported as .96
ND - None Detected

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/5W-13R2	03/98	1100	620	85.0	31.0	110.0	2	161	144	220	ND
(Bldg 2363)	06/98	1100	680	83.0	30.0	109.0	3	137	140	275	0.68
(Continued)	09/98	1160	662	81.0	28.0	90.0	3	144	90	256	ND
	04/01	1100	612	83.0	29.0	106.0	3	131	146	238	ND
	09/01	1150	679	89.0	31.0	156.0	2	142	156	241	ND
	11/01	1130	658	87.0	30.0	104.0	2	148	169	262	ND
	02/02	1120	674	85.0	30.0	112.0	3.2	140	160	257	ND
	04/02	1130	673	79.0	36.0	113.0	3.9	145	176	200	ND
	04/02	1120	682	89.0	32.0	106.0	2.7	142	167	205	ND
	07/02	1150	676	83.0	30.0	111.0	2.7	145	64	205	ND
10S/4W-7A3	03/99	1280	765	91.0	34.0	127.0	2	190	160	272	ND
	06/99	1080	706	76.0	31.0	88.0	2.2	163	118	220	ND
	08/99	1080	690	76.0	32.0	93.0	3	160	191	244	ND
	10/99	1070	660	76.0	32.0	100.0	3	131	120	232	4
	05/00	1010	702	79.0	34.0	94.0	3	177	164	254	4
	08/00	1170	732	84.0	36.0	89.0	3	155	188	201	5
	02/01	1230	753	89.0	39.0	113.0	2	170	198	220	ND
	04/01	1230	726	89.0	39.0	115.0	4	160	191	243	ND
	09/01	1210	735	89.0	39.0	107.0	4	163	185	217	ND
	11/01	1240	725	89.0	39.0	117.0	3	168	205	220	ND
	02/02	1250	765	97.0	43.0	109.0	3.4	155	184	234	ND
	04/02	1290	790	98.0	44.0	109.0	3.4	158	208	200	ND
	07/02	1320	809	96.0	43.0	117.0	3.7	182	217	200	ND

ND - None Detected

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/5W-23G4	06/99	1070	668	69.0	23.0	106.0	1.7	163	144	305	ND
	08/99	1090	657	72.0	25.0	115.0	2	180	153	317	ND
	10/99	1150	716	79.0	27.0	140.0	2	120	140	305	ND
	02/00	956	622	78.0	23.0	117.0	2	90	120	268	ND
	05/00	1040	686	77.0	27.0	116.0	2	181	141	307	ND
	08/00	1180	722	80.0	28.0	105.0	2	155	143	232	ND
	02/01	1100	706	73.0	25.0	125.0	2	149	164	268	ND
	04/01	1170	701	61.0	29.0	126.0	2	154	149	282	ND
	09/01	1180	671	80.0	28.0	125.0	2	149	142	271	ND
	10/01	1180	678	81.0	28.0	132.0	2	161	156	281	ND
	02/02	1170	685	80.0	28.0	134.0	2.8	143	144	279	ND
	04/02	1200	711	87.0	31.0	127.0	2.3	150	204	235	ND
	07/02	1180	730	83.0	29.0	130.0	2.5	158	151	230	ND
10S/5W-23K3	06/99	1150	700	75.0	27.0	106.0	2.2	163	155	317	ND
(Bldg 330923	08/99	1170	722	79.0	28.0	114.0	3	120	140	293	ND
	10/99	1170	723	78.0	28.0	140.0	3	120	140	293	ND
	02/00	1120	712	83.0	30.0	117.0	3	120	157	293	ND
	02/01	1240	758	85.0	61.0	136.0	3	167	152	305	ND
	04/01	1220	726	85.0	61.0	135.0	3	162	154	293	ND
	09/01	1240	682	81.0	29.0	132.0	3	162	144	281	ND
	10/01	1330	746	87.0	32.0	134.0	3	166	156	293	ND
	02/02	1190	720	83.0	29.0	140.0	3.5	150	155	280	ND
	04/02	1210	691	82.0	29.0	127.0	2.7	145	142	231	ND
	07/02	1230	738	81.0	29.0	134.0	3.1	167	151	240	ND
10S/5W-26C3	09/01	1410	804	101.0	38.0	138.0	3	173	175	296	ND
(Bldg 2202	10/01	1370	814	104.0	38.0	131.0	3	199	198	317	ND
	02/02	1380	834	99.0	36.0	128.0	3	172	183	318	ND
	04/02	1370	808	104.0	39.0	124.0	3.2	180	184	258	ND
	07/02	1450	829	187.0	37.0	137.0	3.3	187	193	260	ND

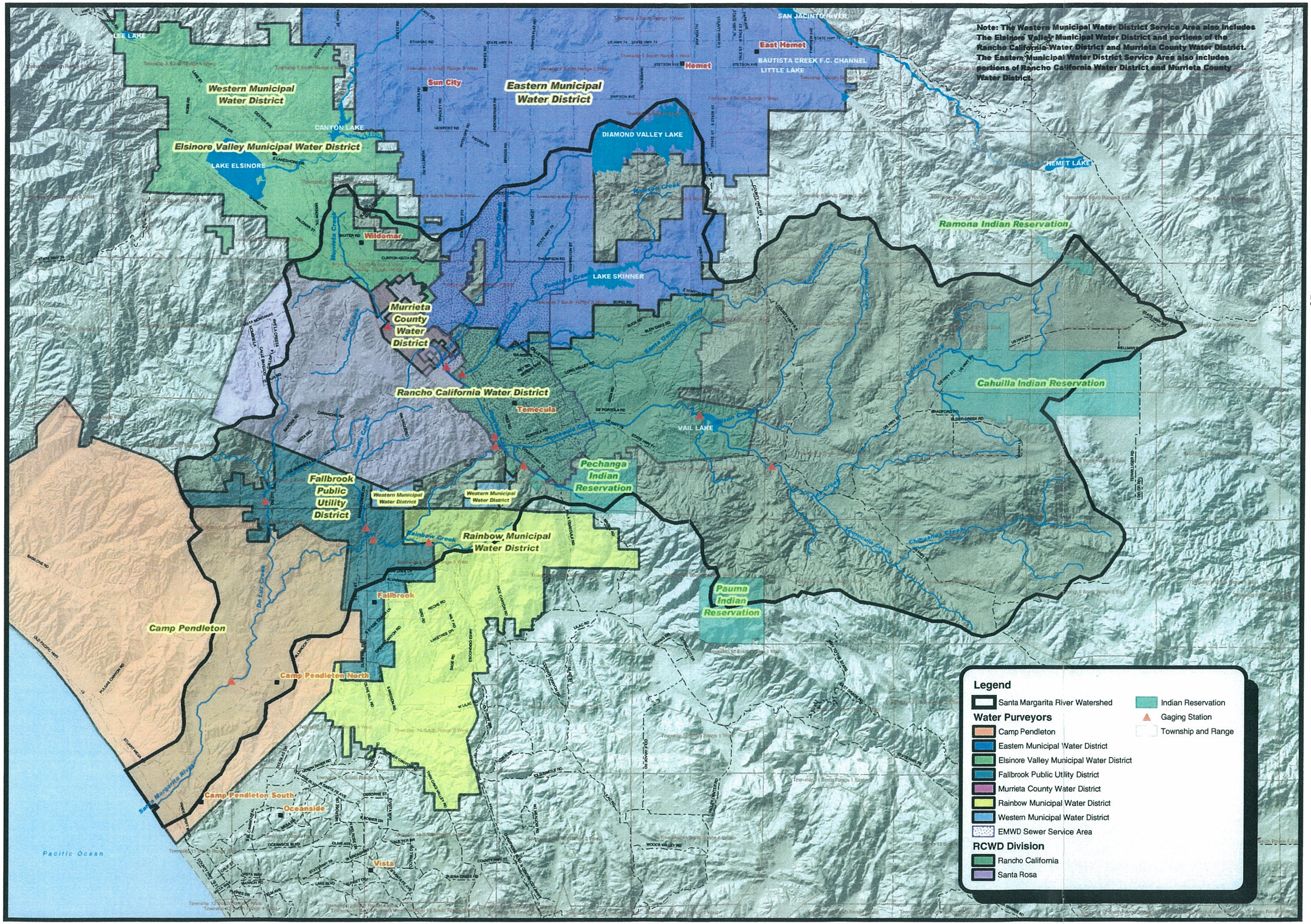
ND - None Detected

Major Water Purveyors

Santa Margarita River Watershed Watermaster

Map Produced by:
Rancho California Water District
Planning and Capital Projects
Geographic Information Services
August 2003

1 inch equals 4 miles



Note: The Western Municipal Water District Service Area also includes The Elsinore Valley Municipal Water District and portions of the Rancho California Water District and Murrieta County Water District. The Eastern Municipal Water District Service Area also includes portions of Rancho California Water District and Murrieta County Water District.
Western Municipal Water District
Eastern Municipal Water District
Elsinore Valley Municipal Water District
Murrieta County Water District
Rancho California Water District
Fallbrook Public Utility District
Rainbow Municipal Water District
Camp Pendleton
Ramona Indian Reservation
Cahuilla Indian Reservation
Pechanga Indian Reservation
Pauma Indian Reservation
Western Municipal Water District
LEE LAKE
CANYON LAKE
LAKE ELSINORE
DIAMOND VALLEY LAKE
LAKE SKINNER
VAIL LAKE
HEMET LAKE
SAN JACINTO RIVER
BAUTISTA CREEK F.C. CHANNEL
LITTLE LAKE
Sun City
Hemet
East Hemet
Wildomar
Temecula
Fallbrook
Camp Pendleton North
Camp Pendleton South
Oceanside
Vista
Pacific Ocean
Santa Margarita River
Rainbow Creek
Legend
Santa Margarita River Watershed
Water Purveyors
Camp Pendleton
Eastern Municipal Water District
Elsinore Valley Municipal Water District
Fallbrook Public Utility District
Murrieta County Water District
Rainbow Municipal Water District
Western Municipal Water District
EMWD Sewer Service Area
RCWD Division
Rancho California
Santa Rosa
Indian Reservation
Gaging Station
Township and Range