SANTA ANA RIVER WATERMASTER

ORANGE COUNTY WATER DISTRICT VS. CITY OF CHINO ET AL.
CASE NO. 117628--COUNTY OF ORANGE

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April 30, 2007

To: Clerk of Superior Court of Orange County and all Parties

Re: Watermaster Report for Water Year October 1, 2005 - September 30, 2006

Ladies and Gentlemen:

We have the honor of submitting herewith the Thirty-sixth Annual Report of the Santa Ana River Watermaster. The supporting basic data Appendices are bound separately.

The principal findings of the Watermaster for the water year 2005-06 are as follows:

		At Prado	
1	Measured Outflow at Prado	247,593	acre-feet
2	Base Flow at Prado	147,736	acre-feet
3	Annual Weighted TDS in Base and Storm Flows	517	mg/L
4	Annual Adjusted Base Flow	170,266	acre-feet
5	Cumulative Adjusted Base Flow	4,387,839	acre-feet
6	Other Credits (Debits)	3,562	acre-feet
7	Cumulative Entitlement of OCWD	1,512,000	acre-feet
8	Cumulative Credit	2,900,672	acre-feet
9	One-Third of Cumulative Debit	0	acre-feet
10	Minimum Required Base Flow in 2006-07	34,000	acre-feet

At Riverside Narrows

1	Base Flow at Riverside Narrows	67,161 acre-feet
2	Annual Weighted TDS in Base Flow	608 mg/L
3	Annual Adjusted Base Flow	67,161 acre-feet
4	Cumulative Adjusted Base Flow	1,604,442 acre-feet
5	Cumulative Entitlement of IEUA and WMWD	549,000 acre-feet
6	Cumulative Credit	1,055,442 acre-feet
7	One-Third of Cumulative Debit	0 acre-feet
8	Minimum Required Base Flow in 2006-07	12,420 acre-feet

Based on these findings, the Watermaster concludes that there was full compliance with the provisions of the Stipulated Judgment in 2005-06.

At the end of the 2005-06 water year, Inland Empire Utilities Agency (formerly Chino Basin Municipal Water District) and Western Municipal Water District have a cumulative credit of 2,900,672 acre-feet to their Base Flow obligation at Prado Dam.
San Bernardino Valley Municipal Water District has a cumulative credit of 1,055,442 acre-feet to its Base Flow obligation at Riverside Narrows.

The Watermaster continued to exercise surveillance over the many active and proposed projects within the watershed for their potential effect on Base Flow.

Sincerely yours,

Santa Ana River Watermaster

By: Richard W. Atwater

Richard W. Atwater

Bill B. Dendy

Virginia Grebbien

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John V. Rossi

SANTA ANA RIVER WATERMASTER

FOR

ORANGE COUNTY WATER DISTRICT

v. CITY OF CHINO, et al.

CASE NO. 117628 - COUNTY OF ORANGE

THIRTY-SIXTH
ANNUAL REPORT
OF THE
SANTA ANA RIVER WATERMASTER

FOR WATER YEAR
OCTOBER 1, 2005 - SEPTEMBER 30, 2006

APRIL 30, 2007

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The following appendices are bound separately and available for review at the office of the Secretary of the Santa Ana River Watermaster.

A USGS Flow Measurements of the Santa Ana River Flows below Prado, at MWD Crossing, and at E Street; and of Temescal Creek above Main Street (at Corona), Cucamonga Creek (near Mira Loma), and Chino Creek at Schaefer Avenue (near Chino); and Water Quality Records for the Santa Ana River at Prado Dam and at MWD Crossing

B Daily Precipitation Data for San Bernardino

C Santa Ana River Watermaster Financial Statements with Report on Examination by Orange County Water District Controller

D Water Quality and Flow of High Groundwater Mitigation Project Water Discharged to the Santa Ana River above Riverside Narrows

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CHAPTER I

WATERMASTER ACTIVITIES AND WATER CONDITIONS

Introduction

This Thirty-Sixth Annual Report of the Santa Ana River Watermaster covers Water Year 2005-06. The annual report is required by the Stipulated Judgment (Judgment) in the case of Orange County Water District v. City of Chino, et al., entered by the court on April 17, 1969 (Case No. 117628-County of Orange). The Judgment became effective on October 1, 1970. It contains a declaration of rights of the water users and other entities in the Lower Area of the Santa Ana River Basin downstream of Prado Dam as against those in the Upper Area tributary to Prado Dam, and provides a physical solution to satisfy those rights. Chapter IV presents a history of the litigation and a summary of the Judgment.

The physical solution accomplishes, in general, a regional intrabasin allocation of the surface flow of the Santa Ana River System. The Judgment leaves to each of the major hydrologic units within the basin the determination and regulation of individual rights therein and the development and implementation of its own water management plan subject only to compliance with the physical solution.

The Judgment designates four public agencies to represent the interests of the Upper and Lower Areas and gives them the responsibility to fulfill the obligations set forth in the Judgment, including the implementation of the physical solution. The Lower Area is represented by Orange County Water District (OCWD). The Upper Area is represented by San Bernardino Valley Municipal Water District (SBVMWD), Western Municipal Water District of Riverside County (WMWD), and Inland Empire Utilities Agency (IEUA), formerly the Chino Basin Municipal Water District (CBMWD). The locations of the districts are shown on Plate 1, "Santa Ana River Watershed".

The court appoints a five-member Watermaster Committee to administer the provisions of the Judgment. The Watermaster's duty is to maintain a continuous accounting of each of the items listed in the letter of transmittal hereof and to report thereon annually for each water year to the court and the parties. The water year begins October 1 and ends the following September 30. The time for submission of the annual report is April 30, seven months after the end of the water year.

For the 2005-06 Water Year the Watermaster Committee consisted of Robert L. Reiter, Bill B. Dendy, Richard W. Atwater, Virginia L. Grebbien, and John V. Rossi. Mr. Reiter served as Chairman/Treasurer and Mr. Dendy served as Secretary. The history of the Watermaster Committee membership is presented in Chapter IV.

Compilation of Basic Data

The Watermaster annually compiles the basic hydrologic and water quality data necessary to determine compliance with the provisions of the Judgment. The data include records of stream flow and quality for the Santa Ana River (River) at Prado Dam and at Riverside Narrows as well as stream flows for most tributaries; flow and quality of nontributary water entering the River; rainfall records at locations in or adjacent to the Watershed; and other data that may be used to support the Watermaster's determinations.

For Water Year 2005-06 the United States Geological Survey (USGS) provided flow and water quality data for the Santa Ana River at two gaging stations, "Santa Ana River Below Prado" (Prado) and "Santa Ana River at Metropolitan Water District (MWD) Crossing" (Riverside Narrows). The flow data at both stations consist of computed mean daily discharges, expressed in cubic feet per second (cfs), based on continuous recordings. The water quality data at Prado consist of daily maximum and minimum values for electrical conductivity (EC), measured as specific conductance and expressed in microsiemens per centimeter (μs/cm) based on a continuous recording, and twice-monthly measured values for total dissolved solids (TDS), expressed in milligrams per liter (mg/L). The water quality data at Riverside Narrows consist of twice-monthly values for both EC and TDS. The USGS also provided discharge data for other gaging stations for streams tributary to Prado, including, among others, the Santa Ana River at E Street in San Bernardino, Chino Creek at Schaefer Avenue, Cucamonga Creek near Mira Loma, and Temescal Creek in the City of Corona (see Appendix A).

The 2005-06 daily mean discharge record at Prado is considered by the USGS to be "fair" for flows below 2,000 cfs and "good" above. Daily mean discharges at the station are controlled at times by storage operations in the reservoir behind Prado Dam just upstream. The maximum and minimum daily mean discharge values during the water year were, respectively, 3,310 cfs on April 5, 2006, and 99 cfs on November 16, 2005. The maximum and minimum daily mean EC values reported by the USGS at Prado were 1240 μs/cm on November 11, 2005, and 376 μs/cm on April 7, 2006. The corresponding calculated TDS concentrations were 765 and 232 mg/L, respectively.

The 2005-06 daily mean discharge record at Riverside Narrows was rated by the USGS to be "poor" for the entire year. The maximum and minimum daily mean discharge values during the year were 4,700 cfs on April 5, 2006, and 49 cfs on July 22, 2006. The maximum and minimum daily mean EC values reported by the USGS were 957 μs/cm on October 12, 2005, and 449 μs/cm on May 22, 2006. The corresponding measured TDS concentrations were 599 and 291 mg/L, respectively.

To assist in making its determinations each year the Watermaster refers to the rainfall records of many precipitation stations located in or near the Santa Ana River watershed. The record for National Weather Service Station 2146, located at the San Bernardino County Hospital, was used to define the hydrologic base period upon which the physical solution in the Judgment was based, and until Water Year 2000-01 the annual reports of

the Watermaster presented the daily and total annual rainfall record at Station 2146 in order to provide a comparison with historical conditions.

During Water Year 2000-01 Station 2146 was destroyed when the hospital buildings were demolished. For many days of that year precipitation data were missing entirely, and for many other days the reported data were clearly inconsistent with data from other nearby stations. The Watermaster decided that the record for Station 2146 for that entire year might be unreliable and decided to replace it with estimated data. Beginning with Water Year 2001-02 OCWD hydrogeologists Roy Herndon and Gwen Sharp have annually obtained the records for three nearby stations (2357 at San Bernardino, California Department of Forestry, 2015 at Del Rosa Ranger Station, and 2001B2 or 2001B3 at San Bernardino County Flood Control District) and, using the method recommended by the U.S. Weather Service, have annually estimated the precipitation at the location of the former Station 2146, and the Watermaster has accepted their estimates.

A new Station 2146-A was established very near the site of the former Station 2146 and the intent of the Watermaster has been to determine, over time, whether or not the quality of the record at the new station is adequate to justify its use in lieu of an estimated record. During the preparation of the report for water year 2004-05 the rainfall total recorded at Station 2146-A was sufficiently close to the estimate prepared by Herndon and Sharp for the Watermaster to accept the record at Station 2146-A in lieu of an estimate.

The USGS established a precipitation gage network during the 2003-04 Water Year to assist local flood control agencies with flood prediction in the area of the “Old Fire” which burned a large portion of the northerly mountains of Santa Ana River Watershed area during October and November 2003. When the local flood control agencies declined to fund the precipitation gage network the Santa Ana River Watermaster Committee recommended that the parties to the Judgment pay the annual operating expense for several of the gages and the parties agreed to do so. The parties also agreed to pay the cost for the USGS to establish and operate a precipitation gage, designated the Gilbert Street Precipitation Gage (USGS No. 340742117161701), at the same location as National Weather Service Station 2146-A. The Gilbert Street Gage was placed into operation in October 2005.

For Water Year 2005-06 Herndon and Sharp compared the record for the Gilbert Street Gage to the record for Station 2146-A and found them to be virtually identical. The Watermaster accepted their recommendation to use the Gilbert Street Gage in its annual report for Water Year 2005-06. For Water Year 2005-06 the total precipitation recorded at the Gilbert Street Gage was 13.23 inches, or 74 % of the average of 17.98 inches that occurred during the 26-year base period (1934-35 through 1959-60) that was used in the formulation of the physical solution. Plate 3 graphically portrays the annual precipitation reported by the Watermaster from 1934-35 through 2005-06.

Watermaster Determinations

Each year the Watermaster uses its long-established procedures to analyze the basic hydrologic and water quality data in order to determine, at Riverside Narrows and at Prado, the Base Flow, the Adjusted Base Flow, the Cumulative Credits or Debits to Upper Area parties, and the Minimum Required Base Flow for the following water year. The procedures include determining, for both locations, the amounts of Nontributary Flow or other non-storm flow to be excluded from Base Flow.

During 2005-06 there was one source of non-storm flow in the river at Riverside Narrows, and two at Prado, that the Watermaster has included in neither Base Flow nor in the calculation of Cumulative Credits: WMWD-OCWD exchange water at both locations and imported water at Prado. A third source, treated municipal wastewater discharged to Temescal Creek from the San Jacinto River Watershed, was also excluded from Base Flow but was partially added to the Cumulative Credit at Prado.

- A total of 727 acre-feet of WMWD-OCWD exchange water was discharged to the River above Riverside Narrows. The estimated average TDS concentration was 302 mg/L.
- A total of 746 acre-feet of Nontributary Flow attributable to imported State Water Project water, purchased by OCWD and released at the OC-59 turnout from MWDSC's Foothill Feeder into San Antonio Creek, was calculated to have reached Prado with an estimated average TDS concentration of 196 mg/L.
- Eastern Municipal Water District (EMWD) reported that it discharged 14,669 acre-feet of municipal wastewater to Temescal Creek, with a flow-weighted average TDS of 725 mg/L, that originated in the San Jacinto River Watershed. Discharges from the San Jacinto Watershed were not taken into account in the settlement discussions and calculations that led to the flow obligations in the Judgment. In the past the Watermaster decided that fifty percent of any portion of such discharges that reach Prado Reservoir and that are subsequently captured by OCWD should be added to the Cumulative Credit at Prado (after the usual water quality adjustment). OCWD Hydrogeologist Gwen Sharp estimated that 12,631 acre-feet of the EMWD wastewater, with an average TDS concentration of 763 mg/L, reached Prado Reservoir and that 7,124 acre-feet of it was captured by OCWD, and recommended that the Cumulative Credit at Prado be increased accordingly, using the previously established fifty percent rule. The Watermaster accepted the estimate and the recommendation.

The Watermaster's determinations for the 2005-06 Water Year are explained in detail for Prado in Chapter II and for Riverside Narrows in Chapter III. A summary of annual determinations by the Watermaster for both locations for the period 1970-71 through 2005-06 is presented in Table 1. Note that the Base Flow obligations set forth in the Judgment at both Prado and Riverside Narrows have been met and cumulative credits have accrued to the Upper Area.

TABLE 1

SUMMARY OF FINDINGS AT PRADO

Water Year	Rainfall (in)[1]	Total Flow (ac-ft)[2]	Base Flow (ac-ft)[3]	Weighted TDS (mg/L)[4]	Adjusted Base Flow (ac-ft)	Cumulative Credit (ac-ft)[5]
1970-71	11.97	51,864	38,402	727	38,402	-3,598
1971-72	9.62	51,743	40,416	707	40,416	-5,182
1972-73	18.46	76,375	48,999	638	51,531	4,349
1973-74	12.72	63,620	43,106	633	45,513	7,862
1974-75	13.49	61,855	50,176	694	51,263	17,125
1975-76	15.86	59,209	45,627	635	48,098	23,223
1976-77	11.95	62,953	48,387	660	50,000	31,223
1977-78	30.47	252,837	58,501	383	73,955	63,178
1978-79	17.51	134,486	71,863	580	79,049	100,227
1979-80	30.93	527,760	82,509	351	106,505	164,732
1980-81	10.45	117,888	74,875	728	74,875	205,652
1981-82	18.34	143,367	81,548	584	89,431	253,083
1982-83	32.36	425,938	111,692	411	138,591	353,036
1983-84	10.81	178,395	109,231	627	115,876	431,514
1984-85	12.86	162,912	125,023	617	133,670	523,184
1985-86	17.86	196,565	127,215	567	141,315	622,499
1986-87	8.08	140,538	119,848	622	127,638	708,137
1987-88	13.78	170,279	124,104	582	136,308	802,445
1988-89	12.64	152,743	119,572	583	131,230	891,675
1989-90	8.53	144,483	119,149	611	127,986	977,611
1990-91	15.48	191,321	111,151	514	128,379	1,064,040
1991-92	16.54	193,225	106,948	499	124,869	1,146,909
1992-93	30.92	568,677	128,068	368	163,499	1,268,408
1993-94	11.62	158,241	111,186	611	119,432	1,345,840
1994-95	25.14	424,017	123,468	415	152,792	1,458,394
1995-96	11.92	194,797	131,861	514	152,299	1,568,693
1996-97	18.64	204,610	136,676	514	157,861	1,684,554
1997-98	33.41	462,633	155,711	392	195,677	1,838,231
1998-99	8.02	182,310	158,637	581	174,369	1,970,600
1999-00	11.09	187,905	148,269	527	169,644	2,098,244
2000-01	16.13	209,168	153,914	525	176,360	2,232,604
2001-02	5.08	156,596	145,981	587	159,728	2,350,332
2002-03	16.22	245,942	146,113	463	174,970	2,484,189
2003-04	10.80	201,967	143,510	508	166,472	2,608,908
2004-05	29.89	637,549	154,307	348	199,570	2,768,844
2005-06	13.23	246,120	147,736	517	170,266	2,900,672

TABLE 1 (Continued)

SUMMARY OF FINDINGS AT RIVERSIDE NARROWS

Water Year	Rainfall (in)[1]	Total Flow (ac-ft)[2]	Base Flow (ac-ft)[3]	Weighted TDS (mg/L)[4]	Adjusted Base Flow (ac-ft)	Cumulative Credit (ac-ft)
1970-71	11.97	24,112	17,061	704	17,021	1,762
1971-72	9.62	22,253	16,157	712	16,017	2,529
1972-73	18.46	32,571	17,105	700	17,105	4,384
1973-74	12.72	24,494	16,203	700	16,203	5,337
1974-75	13.49	19,644	15,445	731	15,100	5,187
1975-76	15.86	26,540	17,263	723	16,977	6,914
1976-77	11.95	23,978	18,581	722	18,286	9,950
1977-78	30.47	181,760	22,360	726	21,941	16,641
1978-79	17.51	47,298	26,590	707	26,456	27,847
1979-80	30.93	253,817	25,549	676	25,549	38,146
1980-81	10.45	34,278	19,764	715	19,550	42,446
1981-82	18.34	82,708	32,778	678	32,778	59,974
1982-83	32.36	279,645	57,128	610	57,128	101,852
1983-84	10.81	82,745	56,948	647	56,948	143,550
1984-85	12.86	78,771	69,772	633	69,772	198,072
1985-86	17.86	99,258	68,220	624	68,220	251,042
1986-87	8.08	77,752	59,808	649	59,808	295,600
1987-88	13.78	79,706	55,324	620	55,324	335,674
1988-89	12.64	62,376	52,259	607	52,259	372,683
1989-90	8.53	58,159	53,199	590	53,583	411,016
1990-91	15.48	73,790	45,041	616	45,041	440,807
1991-92	16.54	71,427	40,306	620	40,306	465,863
1992-93	30.92	267,043	41,434	634	41,434	492,047
1993-94	11.62	45,006	31,278	677	31,278	508,075
1994-95	25.14	243,411	45,562	646	45,562	538,387
1995-96	11.92	81,786	54,548	625	54,548	577,685
1996-97	18.64	104,518	62,618	624	62,618	625,053
1997-98	33.41	214,375	65,013	601	65,013	674,816
1998-99	8.02	76,294	73,094	603	73,094	732,660
1999-00	11.09	75,572	63,499	602	63,499	780,909
2000-01	16.13	75,331	61,872	603	61,872	827,531
2001-02	5.08	59,434	58,705	606	58,705	870,986
2002-03	16.22	92,166	57,747	617	57,747	913,483
2003-04	10.80	77,336	54,788	634	54,788	953,021
2004-05	29.89	355,503	65,760	616	65,760	1,003,531
2005-06	13.23	111,840	67,161	608	67,161	1,055,442

TABLE 1 (Continued)

(1) Measured at National Weather Service Station 2146 (former San Bernardino County Hospital) until Water Year 2000-01. Estimated for that location for Water Years 2000-01 through 2003-04. Measured at NWS Station 2146-A for Water Year 2004-05. Measured at USGS Gilbert Street Precipitation Gage at San Bernardino for Water Year 2005-06.

(2) As determined by the Watermaster, Total Flow at either Prado or Riverside Narrows in any year may be exclusive of any Nontributary Flow, Exchange Water or other "water management" flows and, at Prado, may include discharges from Lake Elsinore or the San Jacinto Watershed that reach the Santa Ana River.

(3) As determined by the Watermaster: (a) Base Flow at Prado in any year is exclusive of Storm Flow and may be exclusive of any Nontributary Flow, Exchange Water or other "water management" flows as well as any discharges from Lake Elsinore or the San Jacinto Watershed that reach the Santa Ana River; (b) Base Flow at Riverside Narrows in any year is exclusive of Storm Flow and may be exclusive of any Nontributary Flow, Exchange Water or other "water management" flows and, beginning in 1979-80, includes wastewater from Rubidoux CSD that is treated at the Riverside Regional WWTP.

(4) For Base and Storm Flow at Prado and Base Flow only at Riverside Narrows.

(5) As determined by the Watermaster, Cumulative Credit at Prado in any year may include credit for a portion of any water discharged from Lake Elsinore or the San Jacinto Watershed that reach the Santa Ana River.

Notable Watershed Programs and Activities

Each year when the Watermaster is compiling and analyzing the information it needs to prepare its report to the Court it also takes notice of programs and activities in the Watershed that, while they do not directly enter into the Watermaster's determinations, do have significant potential to affect River flow or quality. Following are brief descriptions of three such items.

Upper Area Wastewater Discharges

Data on municipal wastewater discharged in the Upper Area are compiled annually because it is a major contributor to Base Flow in the River. The historical data on wastewater discharged are summarized in Table 2. The locations of wastewater treatment plants are shown on Plate 2.

Salt Exports from the Upper Area

High salinity water, mostly from groundwater desalters, is exported from the Upper Area to the ocean through SAWPA's Santa Ana Regional Interceptor (SARI) and IEUA's Non-Reclaimable Wastewater System (NRWS). This salt export helps to protect River water quality and, therefore, helps the Upper Area parties comply with the Judgment. The available historical data on salt export are summarized in Table 3. The SARI first went into service in 1985-86. The NRWS has been in service since prior to 1970, but records of flow data prior to 1981-82 are missing.

The locations of the SARI and NRWS pipelines are shown on Plate 2.

Arundo donax Eradication

Arundo donax is a non-native species of reed that has invaded many waterways in California. It displaces native vegetation, resulting in undesirable habitat for animals. *Arundo* also consumes water at the rate of about 5.6 acre feet per acre per year compared to only about 1.9 for native plants, a net water loss of about 3.7 acre feet per year per acre of *Arundo*. By the early 1990s there were about 10,000 acres of *Arundo* in the Santa Ana River watershed. In 1997 a consortium of local, state and federal agencies launched a long term eradication program in the watershed for reasons of both habitat restoration and water savings. *Arundo* spreads quickly downstream as roots and rhizomes break off during high streamflows. Therefore the eradication program began at the farthest upstream locations and is working toward the River mouth. Each location requires multiyear retreatment. Approximately 3,000 acres have now been removed and are undergoing ongoing treatment to prevent the roots from starting new colonies. Another 100-200 acres will be removed from the river beginning in February 2007.

Chino Groundwater Basin Hydraulic Control

During most of the twentieth century much of the land overlying the Chino Basin was devoted to irrigated agriculture that obtained its water supply directly from the basin. In more recent times the agriculture is being replaced by urban development, but the agricultural water use left behind a legacy of high concentrations of nitrates and other salts in the groundwater, making it unsuitable for urban use unless treated. As agricultural pumping of groundwater in the lower part of the Basin was cut back the, California Regional Water Quality Control Board, Santa Ana Region ("RWQCB"), and Orange County Water District both became concerned about the outlook for increased amounts of poor quality water rising in the Santa Ana River above Prado Dam.

Under historic anti-degradation water quality standards, the recharge of recycled water in the Chino Basin was impossible because the Basin lacked assimilative capacity. In order to allow for the use and recharge of recycled water, the RWQCB amended the Basin Plan for the Santa Ana Watershed to allow for the use of special "maximum benefit" standards. As a condition of approval of the use of the maximum benefit standards, the Regional Board's Water Quality Control Plan requires that the Chino Basin entities develop and implement a Hydraulic Control Program ("HCP") with the dual objectives of minimizing the loss of groundwater to the River and protecting the River against the salts by increasing pumping from wells low in the Basin. Much of the pumped groundwater is treated in desalination facilities, with the product water being served to municipalities and the brine stream being exported to the ocean via the SARI.

The Chino Basin entities will be required to demonstrate compliance with the HCP's objectives of Basin isolation and protection of water quality in the River through a program of monitoring of water chemistry, hydrologic balance and piezometric groundwater surface elevations and through groundwater modeling.

TABLE 2
MUNICIPAL WASTEWATER EFFLUENT DISCHARGED ABOVE PRADO
(acre-feet)

Water Year	Wastewater discharges upstream from Colton that generally do not flow continuously to Santa Ana River above E Street				Wastewater discharges to Santa Ana River and its tributaries that have hydraulic continuity to the Santa Ana River above Riverside Narrows					Wastewater discharges to Santa Ana River between Riverside Narrows and Prado Dam								Wastewater discharges to Temescal Creek or its tributaries which have hydraulic continuity to the Santa Ana River					Total Discharge to Surface Flow of the Santa Ana River	Total Wastewater Discharged in Watershed
	Redlands	Beaumont	Yucaipa	Subtotal (A)	San Bernardino	Colton	Rialto	RIX[1]	Subtotal (B)	Riverside	Corona	IEUA #1[2]	IEUA #2	IEUA #5	IEUA CCWRF[3]	WRCR[4]	Subtotal (C)	Lee Lake WRP	Elsinore Valley MWD[5]	Eastern MWD	Subtotal (D)	Est. Arriving at Prado Subtotal (E)	(B + C +E)	(A + B + C + D)
1970-71	2,650	no record	--	2,650	17,860	2,520	2,270	--	22,650	18,620	3,190	--	--	--	--	--	21,810	--	--	--	--	--	44,460	47,110
1971-72	2,830	no record	--	2,830	16,020	2,230	2,400	--	20,650	19,010	3,230	6,740	--	--	--	--	28,980	--	--	--	--	--	49,630	52,460
1972-73	2,810	450	--	3,260	18,670	2,530	2,260	--	23,460	19,060	3,340	10,380	--	--	--	--	32,780	--	--	--	--	--	56,240	59,500
1973-74	2,770	600	--	3,370	17,680	2,530	2,320	--	22,530	19,560	3,510	11,440	2,320	--	--	--	36,830	--	--	--	--	--	59,360	62,730
1974-75	2,540	570	--	3,110	16,750	1,980	2,320	--	21,050	19,340	4,020	14,960	2,280	--	--	--	40,600	--	--	--	--	--	61,650	64,760
1975-76	2,450	620	--	3,070	17,250	2,540	2,240	--	22,030	19,580	4,700	15,450	2,950	--	--	--	42,680	--	--	--	--	--	64,710	67,780
1976-77	3,170	580	--	3,750	17,650	3,260	2,330	--	23,240	18,770	5,010	14,640	3,380	--	--	--	41,800	--	--	--	--	--	65,040	68,790
1977-78	3,280	620	--	3,900	18,590	3,810	2,380	--	24,780	20,310	5,200	14,650	4,060	--	--	--	44,220	--	--	--	--	--	69,000	72,900
1978-79	3,740	670	--	4,410	19,040	3,850	3,050	--	25,940	21,070	5,390	15,040	5,070	--	--	--	46,570	--	--	--	--	--	72,510	76,920
1979-80	4,190	690	--	4,880	20,360	4,190	2,990	--	27,540	22,910	5,360	14,410	5,520	--	--	--	48,200	--	--	--	--	--	75,740	80,620
1980-81	4,410	690	--	5,100	20,550	3,930	3,370	--	27,850	24,180	5,590	17,270	5,260	--	--	--	52,300	--	--	--	--	--	80,150	85,250
1981-82	4,420	700	--	5,120	23,340	3,780	3,470	--	30,590	25,640	5,410	19,580	5,360	--	--	--	55,990	--	--	--	--	--	86,580	91,700
1982-83	4,530	710	--	5,240	24,160	3,600	3,620	--	31,380	25,020	5,860	20,790	4,290	--	--	--	55,960	--	--	--	--	--	87,340	92,580
1983-84	5,150	800	--	5,950	22,080	3,700	3,830	--	29,610	26,090	6,200	20,950	3,950	--	--	--	57,190	--	--	--	--	--	86,800	92,750
1984-85	4,990	840	--	5,830	23,270	3,830	4,070	--	31,170	27,750	6,250	25,160	4,280	--	--	--	63,440	--	--	--	--	--	94,610	100,440
1985-86	5,200	820	--	6,020	24,720	4,010	4,720	--	33,450	28,820	5,900	28,240	2,660	--	--	--	65,620	--	--	--	--	--	99,070	105,090
1986-87	5,780	880	800	7,460	26,810	4,170	5,350	--	36,330	30,340	6,170	27,160	5,000	--	--	--	68,670	--	--	--	--	--	105,000	112,460
1987-88	6,060	940	1,850	8,850	27,880	5,240	6,040	--	39,160	34,660	6,050	31,290	5,500	--	--	--	77,500	--	--	--	--	--	116,660	125,510
1988-89	5,250	1,030	2,260	8,540	27,640	5,550	6,280	--	39,470	35,490	8,080	35,510	6,180	--	--	--	85,260	--	--	--	--	--	124,730	133,270
1989-90	6,360	1,100	2,370	9,830	28,350	5,810	6,260	--	40,420	33,210	9,140	34,760	5,730	--	--	--	82,840	--	--	--	--	--	123,260	133,090
1990-91	6,690	1,120	2,490	10,300	27,570	5,670	6,290	--	39,530	32,180	9,110	36,840	6,100	--	--	--	84,230	--	--	--	--	--	123,760	134,060
1991-92	6,230	1,150	2,580	9,960	25,060	5,660	6,360	--	37,080	32,660	9,010	40,360	5,780	--	1,550	--	89,360	--	--	--	--	--	126,440	136,400
1992-93	6,880	1,180	2,580	10,640	25,550	6,210	6,460	--	38,220	34,100	9,600	41,510	5,640	--	4,720	--	95,570	--	--	--	--	--	133,790	144,430
1993-94	6,440	1,150	2,710	10,300	23,800	5,830	6,540	--	36,170	32,640	7,790	37,310	5,430	--	7,010	--	90,180	--	--	--	--	--	126,350	136,650
1994-95	6,720	1,180	2,560	10,460	26,330	5,500	6,820	--	38,650	33,950	7,340	39,680	5,360	--	8,690	--	95,020	--	--	--	--	--	133,670	144,130
1995-96	6,550	1,260	2,640	10,450	13,240	2,770	6,890	20,760	43,660	33,960	7,850	39,590	4,810	--	9,060	--	95,270	--	--	--	--	--	138,930	149,380
1996-97	6,510	1,280	2,780	10,570	--	--	7,160	42,800	49,960	34,240	5,040	39,940	4,790	--	9,750	--	93,760	--	--	--	--	--	143,720	154,290
1997-98	7,022	1,356	3,116	11,494	--	--	7,063	49,683	56,746	35,422	8,718	44,940	4,969	--	9,264	1,461	104,774	--	--	--	--	--	161,520	173,014
1998-99	7,379	1,367	3,128	11,874	--	--	6,524	47,587	54,111	34,844	11,629	43,354	5,345	--	9,534	4,594	109,299	--	3,049	--	--	--	163,410	175,284
1999-00	7,670	1,373	3,284	12,327	--	--	7,392	45,012	52,404	35,399	13,152	42,967	4,378	--	9,954	2,371	108,221	--	4,159	--	--	--	160,625	172,952
2000-01	7,379	1,377	3,345	12,101	--	--	8,346	49,407	57,753	35,663	13,100	43,863	4,401	--	11,615	2,210	110,852	--	4,245	--	--	--	168,605	180,706
2001-02	7,395	1,434	3,285	12,114	--	--	7,952	44,513	52,465	35,586	12,378	40,377	4,056	--	10,677	2,380	105,454	352	4,477	--	4,829	--	157,919	174,862
2002-03	7,499	1,593	3,480	12,572	217	4	8,042	45,570	53,833	36,298	12,027	45,838	4,343	--	10,837	2,409	111,752	444	5,012	--	5,456	--	165,585	183,613
2003-04	6,625	1,793	3,898	12,316	124	0	8,158	44,526	52,808	36,664	11,394	39,734	2,307	4,821	9,113	2,818	106,851	549	5,037	4,345	9,931	1,140	160,799	181,906
2004-05	7,632	2,051	3,899	13,582	4,406	346	7,815	42,025	54,592	38,123	12,558	40,644	--	8,777	8,637	3,521	112,260	653	7,025	15,195	22,873	13,746	180,598	203,307
2005-06	5,789	2,246	3,945	11,980	1,184	101	7,883	45,259	54,427	37,358	13,021	35,486	--	9,036	8,389	3,311	106,601	701	6,529	14,669	21,899	12,631	173,659	194,907

1. RIX = Rapid Infiltration and Extraction Facility for San Bernadino and Colton, including over-extraction of groundwater
2. Beginning in 1997-98, includes IEUA Plant #4 flows.
3. CCWRF = Carbon Canyon Water Reclamation Facility
4. WRCR = Western Riverside County Regional Wastewater Treatment Plant
5. Elsinore Valley MWD flow information is not yet available.

The amounts shown in this table were determined from data provided by the agencies.

TABLE 3

HIGH SALINITY WATER EXPORTED
FROM THE SANTA ANA RIVER WATERSHED

Water Year	Inland Empire Utility Agency Non-Reclaimable Wastewater North System (acre-feet)	Santa Ana Watershed Project Authority Santa Ana Regional Interceptor (SARI)[1] SARI Flow[2] (acre-feet)	Average TDS (mg/L)	Total Flow (acre-feet)
1970-71	NA	---	---	---
1971-72	NA	---	---	---
1972-73	NA	---	---	---
1973-74	NA	---	---	---
1974-75	NA	---	---	---
1975-76	NA	---	---	---
1976-77	NA	---	---	---
1977-78	NA	---	---	---
1978-79	NA	---	---	---
1979-80	NA	---	---	---
1980-81	NA	---	---	---
1981-82	4,236	---	---	4,236
1982-83	4,651	---	---	4,651
1983-84	4,142	---	---	4,142
1984-85	2,346	---	---	2,346
1985-86	2,995	2,791 [3]	NA	5,786 [3]
1986-87	4,943	2,869 [3]	NA	7,813 [3]
1987-88	5,177	2,948 [3]	NA	8,125 [3]
1988-89	5,949	3,622 [3]	NA	9,572 [3]
1989-90	5,240	7,393	1,649	12,633
1990-91	2,847	7,340	1,906	10,187
1991-92	3,421	6,457	2,346	9,878
1992-93	3,774	5,277	2,516	9,051
1993-94	3,764	7,860	2,302	11,624
1994-95	4,131	8,656	1,903	12,787
1995-96	3,863	9,597	2,175	13,460
1996-97	4,191	10,225	2,292	14,417
1997-98	4,575	8,210	2,456	12,785
1998-99	3,666	4,305	2,611	7,971
1999-00	4,272	7,711	2,154	11,983
2000-01	5,075	8,205	2,504	13,280
2001-02	4,297	8,385	3,289	12,682
2002-03	3,926	9,331	3,482	13,257
2003-04	3,950	10,505	3,798	14,455
2004-05	4,220	10,971	3,460	15,191
2005-06	5,085	12,847	4,118	17,932

1. Santa Ana Regional Interceptor began operation in 1985-86.
2. IEUA Non-Reclaimable Wastewater from the South System goes into the SARI and is included in SARI F
3. SARI flow and Total Flow for 1985-86 through 1988-89 is partial flow.

NA = Data Not Available

Watermaster Service Expenses

In accordance with Paragraph 7(d) of the Stipulated Judgment, the fees and expenses of each of the members of the Watermaster are borne by the parties by whom they were nominated. All other Watermaster service expenses are shared by the parties, with OCWD paying 40% of the cost and WMWD, SBVMWD, and IEUA each paying 20% of the cost.

The Watermaster annually adopts a budget for the costs of services other than those provided by the USGS. Table 4 shows the budget and actual expenses incurred for such services during the 2005-06 fiscal year as well as the budget adopted for the 2006-07 fiscal year. A financial review was performed by OCWD and is reported in Appendix C.

TABLE 4

WATERMASTER SERVICE BUDGET AND EXPENSES

Budget Item	July 1, 2005 to June 30, 2006 Budget	July 1, 2005 to June 30, 2006 Expenses	July 1, 2006 to June 30, 2007 Budget
Support Services	$13,000.00	$15,818.45	$13,000.00
Reproduction of Annual Report	1,000.00	857.12	1,000.00
TOTAL	$14,000.00	$16,675.57	$14,000.00

Stream flow measurements and water quality data required by the Watermaster are, for the most part, furnished by the USGS through a cooperative monitoring program which also includes some precipitation data to supplement data provided by the National Weather Service. The costs of the cooperative monitoring program for the 2005-06 Water Year, and each party's share of the costs, are set forth in Table 5.

TABLE 5

COSTS TO THE PARTIES AND USGS FOR MEASUREMENTS WHICH PROVIDE DATA USED BY THE SANTA ANA RIVER WATERMASTER

October 1, 2005 to September 30, 2006

	Total Cost	USGS Share	Parties' Share
USGS PRECIPITATION GAGING STATIONS			
Gilbert Street Gage at San Bernardino	$0	$0	$0
"E" Street Gage	6,550	0	6,550
Middle Fork Lytle Creek Gage	6,550	0	6,550
Ridge Top Gage near Devore	6,550	0	6,550
USGS FLOW AND WATER QUALITY GAGING			
Santa Ana River at MWD Crossing (Riverside Narrows)			
Surface Water Gage	26,250	13,125	13,125
Water Quality Monitoring/TDS Sampling	10,850	5,425	5,425
Santa Ana River below Prado Dam			
Surface Water Gage	18,700	9,350	9,350
Remove Temporary Gage and Transfer to Permanent Gage	800	0	800
Continuous Temperature and Conductance	10,850	5,425	5,425
Bi-monthly Sampling for TDS	9,900	4,850	4,950
Water Quality Conductance Program	2,100	0	2,100
Temescal Creek above Mains St., near Corona	18,700	9,350	9,350
Chino Creek at Schaefer	18,700	9,350	9,350
Cucamonga Creek at Mira Loma	18,700	9,350	9,350
TOTAL COST AND SHARES	$155,200	$66,325	$88,875
COST DISTRIBUTION AMONG PARTIES			
Inland Empire Utilities Agency	20%		$17,775
Orange County Water District	40%		$35,550
San Bernardino Valley Municipal Water District	20%		$17,775
Western Municipal Water District	20%		$17,775

CHAPTER II

BASE FLOW AT PRADO

This chapter deals with determinations of 1) the components of flow at Prado, which include Nontributary Flow, Arlington Desalter discharge, water discharged from San Jacinto Watershed, Storm Flow, and Base Flow and 2) the Adjusted Base Flow at Prado credited to IEUA and WMWD.

Flow at Prado

During the 2005-06 Water Year, the flow of the Santa Ana River as measured at the USGS gaging station below Prado Dam amounted to 247,593 acre-feet. Nineteen acre-feet of water was in storage at the beginning of the water year; no water remained in storage at the end of the water year. Inflow to the reservoir included 147,736 acre-feet of Base Flow and 85,734 acre-feet of Storm Flow. Nontributary flows consisted of State Water Project water and WMWD-OCWD Transfer flows. Water discharged from San Jacinto Watershed was also excluded from Base Flow but was partially credited to Cumulative Credit at Prado. Of the nontributary flow due to State Water Project water released to San Antonio Creek at turnout OC-59, 746 acre-feet was calculated to have reached Prado Reservoir during 2005-06. WMWD-OCWD Transfer flow at Prado was 727 acre-feet. Discharge from the San Jacinto Watershed calculated to have reached Prado Reservoir was 12,631 acre-feet. The monthly components of flow of the Santa Ana River at Prado Dam for 2005-06 are listed in Table 6 and are shown graphically on Plate 4. Historical Base and Storm Flows of the Santa Ana River below Prado during the period 1934-35 through 2005-06 are presented on Plate 5.

Nontributary Flow

Nontributary Flow includes water that originated outside the watershed, as well as other water that the Watermaster has determined should be excluded from Base Flow. During the 2005-06 Water Year it included State Water Project water imported by OCWD and released to San Antonio Creek and WMWD-OCWD Transfer flow deliveries made to the Santa Ana River upstream of Riverside Narrows and Prado Dam. Flows from the San Jacinto Watershed were also determined to have reached Prado Reservoir. In the past it has included, and in the future may include, other water discharged to the river pursuant to the water exchanges or other such programs.

High Groundwater Mitigation Project

No High Groundwater Mitigation Project water was discharged to the Santa Ana River during the 2005-06 Water Year.

TABLE 6

COMPONENTS OF FLOW AT PRADO DAM
WATER YEAR 2005-06
(acre-feet)

	USGS Measured Outflow	Storage Change (1)	Computed Inflow	San Jacinto Watershed Flow at Prado (2)	WMWD Transfer Water (3)	San Antonio Creek (4)	Arlington Desalter	Storm Flow	Base Flow
2005									
October	17,429	4,733	22,162	1,282	0	746	0	8,332	11,802
November	17,385	(1,680)	15,705	1,974	0	0	0	0	13,731
December	17,198	(2,172)	15,026	71	0	0	0	654	14,301
2006									
January	20,989	1,858	22,847	1,708	0	0	0	8,120	13,019
February	17,941	9,502	27,443	2,021	0	0	0	14,998	10,424
March	29,558	4,517	34,075	2,366	0	0	0	17,005	14,704
April	46,532	951	47,483	2,368	0	0	0	30,874	14,241
May	27,134	(8,011)	19,123	690	0	0	0	4,613	13,820
June	18,064	(4,863)	13,201	151	0	0	0	1,139	11,911
July	13,997	(4,854)	9,143	0	0	0	0	0	9,143
August	10,820	0	10,820	0	336	0	0	0	10,484
September	10,546	0	10,546	0	391	0	0	0	10,155
Total	247,593	(19)	247,574	12,631	727	746	0	85,734	147,736

(1) The monthly change in storage is included in the monthly components of flow.

(2) Discharge due to overflow of Lake Elsinore and/or discharge of wastewater by EMWD from the San Jacinto Watershed.

(3) WMWD-OCWD Transfer Program water pumped from the Bunker Hill, Riverside, and Colton basins and discharged to the Santa Ana River above the Riverside Narrows delivered this year.

(4) State Water Project water released into San Antonio Creek from turnout OC-59 for OCWD and calculated to have reached Prado Dam in the 2005-06 Water Year.

Releases to San Antonio Creek

Since May 1973, OCWD has from time to time purchased State Water Project water for the replenishment of the groundwater basin in Orange County. The water has been released at two locations: Santa Ana River above Riverside Narrows (1972-73 only) and San Antonio Creek near the City of Upland.

During the 2005-06 Water Year, 715 acre-feet of State Water Project water was released into San Antonio Creek from the Foothill Feeder at turnout OC-59 near Upland for OCWD. Total monthly deliveries and daily flow rates were provided by the MWDSC. Water loss between OC-59 and Prado Dam was calculated per the procedures set forth in the Twelfth Annual Report (1981-82), Appendix C. Because OC-59 water was in transit at the beginning of the water year from the previous year due to the 12-hour delay from the time of release until the water reaches Prado Dam, it was determined that a total of 766 acre-feet was subject to evaporative processes, that 20 acre-feet (2.6%) were lost to evapotranspiration, and that 746 acre-feet of OC-59 water reached Prado Reservoir. A monthly summary of Nontributary Flow released from OC-59 into San Antonio Creek is contained in Appendix E.

Arlington Desalter

No Arlington Desalter flows were discharged to the Arlington drain during the 2005-06 water year.

WMWD-OCWD Transfer Program

In 2001, OCWD and WMWD entered into an agreement that provides for delivery of groundwater pumped primarily from the Bunker Hill Basin via the Riverside Canal and Santa Ana River. During the 2005-06 Water Year, 727 acre-feet of WMWD-OCWD Transfer Program water deliveries were made to the Santa Ana River upstream of Riverside Narrows and Prado Dam. A summary of the WMWD-OCWD Transfer Program discharges is contained in Appendix K.

San Jacinto Watershed Discharge

Prior to the 1997-98 Water Year, discharges from the San Jacinto Watershed reaching Prado Reservoir were due to discharges from Lake Elsinore, and had been accounted for as “Lake Elsinore Discharge.” In 1998 Eastern Municipal Water District (EMWD) completed its Reach 4 discharge pipeline to Wasson Canyon, which is tributary to Temescal Wash. The pipeline discharges tertiary-treated wastewater to Temescal Wash above Lee Lake when flows exceed EMWD’s storage facility capacity. The collective discharges from Lake Elsinore and EMWD to Temescal Wash are referred to herein as San Jacinto Watershed discharges.

During the 2005-06 Water Year, EMWD discharged 14,669 acre-feet of wastewater to Temescal Wash, and 12,631 acre-feet of that discharge was estimated to have reached

Prado Reservoir. The Watermaster previously determined that to the extent such discharges occur and are captured by OCWD, fifty percent of such captured water will be added as Cumulative Credit at Prado. OCWD captured 7,124 acre-feet of the San Jacinto Watershed discharge and 5,507 acre-feet flowed past OCWD's groundwater recharge facilities and was considered as lost to the ocean. A summary of the EMWD Discharges, San Jacinto Watershed Discharge Calculations, and San Jacinto Watershed Discharges is contained in Appendix G. Page G-16, Discharge of Temescal Creek at Main Street in Corona, EMWD Discharge, and Elsinore Precipitation, illustrates the known and estimated components of flow of Temescal Creek.

Storm Flow

Portions of storm flows are retained behind Prado Dam for flow regulation and for water conservation purposes. The ACOE owns the Dam, which has a spillway elevation of 543 feet above mean sea level, and operates it according to a flow release schedule with a buffer pool elevation of 494 feet until March 1 of each year. In 1994 an agreement was signed by OCWD, ACOE, and the U.S. Fish and Wildlife Service, which provides that between March 1 and August 30 the pool would be raised, given sufficient flows, to elevation 497 feet. This elevation would be increased year by year, as additional biological habitat mitigation by OCWD comes on line, to a maximum elevation of 505 feet. On April 12, 1995, the ACOE, the U.S. Fish and Wildlife Service, and OCWD reached an agreement to accelerate immediately the raising of the seasonal water conservation pool to elevation 505 feet, in exchange for a $1 million contribution by OCWD to the U.S. Fish and Wildlife Service to be used to develop least Bell's vireo habitat by the removal of a non-native plant, *Arundo donax*. Storm flows captured within the reservoir for conservation are released following the storm to downstream groundwater recharge facilities. Monthly and annual quantities of Storm Flow are shown in Table 6.

During the 2005-06 Water Year, the maximum volume of water stored in Prado Reservoir reached 24,044 acre-feet on April 5, 2006. The maximum daily mean flow released from Prado Dam to the Santa Ana River was 3,310 cfs on April 5, 2006.

Base Flow

The Base Flow is that portion of the total flow remaining after subtracting Storm Flow, Nontributary Flow, Exchange Water, and certain other flows determined by the Watermaster. Flows affecting the determination of Base Flow in 2005-06 included releases to San Antonio Creek, WMWD-OCWD Transfer Program flows, and discharges from the San Jacinto Watershed. The general procedure used by the Watermaster to separate the 2005-06 flow components was the same as used for previous years and is fully described in the Fifth (1974-75) and the Twelfth (1981-82) Annual Reports. Table 6 shows the monthly and annual quantities of Base Flow.

Water Quality Adjustments

The flow-weighted average TDS for the total flow passing Prado Dam, including Nontributary Flow released to San Antonio Creek, WMWD-OCWD Transfer Program water deliveries, and San Jacinto Watershed discharge, was found to be 528 milligrams per liter (mg/L). This determination was based on records from a continuous monitoring device operated by the USGS for EC of the Santa Ana River flow below Prado Dam. This record was supplemented by twenty-four (24) grab samples for EC collected by the USGS and analyzed for TDS.

A correlation between TDS and EC yields the following best fit equation:

$$TDS = EC \times 0.616614$$

(where the units of TDS and EC are mg/L and μs/cm, respectively)

Using the daily EC data, flow-weighted average daily values for TDS were calculated using the above equation. The plot of TDS on Plate 6 shows the daily average TDS concentration of the Santa Ana River flow passing Prado Dam. A summary of daily TDS and EC of the Santa Ana River below Prado Dam is contained in Appendix H. At Prado Dam, the flow-weighted average annual TDS value of 528 mg/L represents the quality of the total flow including releases to San Antonio Creek, WMWD-OCWD Transfer Program water deliveries, and discharges from the San Jacinto Watershed. The Stipulated Judgment requires that Base Flow shall be subject to adjustment based on the TDS of Base Flow and Storm Flow only. Hence, a determination of the TDS of Base Flow plus Storm Flow only, is detailed in the following paragraphs.

Adjustment for High Groundwater Mitigation Project Discharge

During the 2005-06 Water Year SBVMWD discharged no High Groundwater Mitigation Project water. Therefore, no water quality adjustment was necessary.

Adjustment for Flow to San Antonio Creek

During the 2005-06 Water Year, 746 acre-feet of water released from OC-59 to San Antonio Creek were calculated to have reached Prado Dam. A flow-weighted average TDS of 196 mg/L was calculated for State Water Project water reaching Prado Dam. A summary of these calculations is contained in Appendix E.

Adjustment for Arlington Desalter Discharge

During the 2005-06 Water Year, no Arlington Desalter discharges were made. Therefore, no water quality adjustment was necessary.

Adjustment for WMWD-OCWD Transfer Program Discharge

During the 2005-06 Water Year, 727 acre-feet of WMWD-OCWD Transfer Program water was delivered. A flow-weighted average TDS of 302 mg/L was calculated for WMWD-OCWD Transfer water reaching Prado Dam. A summary of the WMWD-OCWD Transfer Program flows is contained in Appendix K.

Adjustment for San Jacinto Watershed Discharge

Discharge from the San Jacinto Watershed during the 2005-06 Water Year reaching Prado Reservoir was estimated to be 12,631 acre-feet. Using EMWD discharge data, the TDS data for the discharge, and monthly volume of the discharge estimated to have reached Prado reservoir, a flow-weighted average TDS of 763 mg/L was calculated. A summary of these calculations is contained in Appendix G.

Flow Component	Annual Flow (acre-feet)	Average TDS (mg/L)	Annual Flow x Average TDS (acre-feet x mg/L)
1. Measured Outflow	247,593	528	130,729,104
2. Less High Groundwater Mitigation Project	0	---	---
3. Less Nontributary Flow San Antonio Creek	(746)	196	(146,216)
4. Less Arlington Desalter	0	---	---
5. Less WMWD Transfer Program	(727)	302	(219,554)
6. Less San Jacinto Watershed Discharge	(12,631)	763	(9,637,453)
7. Measured Outflow less lines 2 through 6	233,489		120,725,881
Average TDS in total Base and Storm Flow	120,725,881 ÷ 233,489 = 517 mg/L		

After adjusting for Nontributary Flow of OC-59 water to San Antonio Creek, WMWD-OCWD Transfer Program flows, and San Jacinto Watershed discharge, the weighted average annual TDS of Storm Flow and Base Flow for 2005-06 is 517 mg/L, as shown above.

Adjusted Base Flow at Prado

The Stipulated Judgment provides that the amount of Base Flow at Prado received during any year shall be subject to adjustment based on weighted average annual TDS of the Base Flow and Storm Flow at Prado as follows:

If the Weighted Average TDS in Base Flow and Storm Flow at Prado is:	Then the Adjusted Base Flow shall be determined by the formula:
Greater than 800 mg/L	$Q - \frac{35}{42{,}000} Q(TDS-800)$
700 mg/L to 800 mg/L	Q
Less than 700 mg/L	$Q + \frac{35}{42{,}000} Q(700-TDS)$

Where: Q = Base Flow actually received.

The weighted average annual TDS of 517 mg/L is less than 700 mg/L. Therefore, the Base Flow must be adjusted by the above equation for TDS less than 700 mg/L. Thus the Adjusted Base Flow is as follows:

$$(147{,}736 \text{ acre-feet}) + \frac{35}{42{,}000} (147{,}736 \text{ acre-feet}) (700 - 517) = 170{,}266 \text{ acre-feet}$$

Entitlement and Credit or Debit

Paragraph 5(c) of the Stipulated Judgment states that "CBMWD (now IEUA) and WMWD shall be responsible for an average annual Adjusted Base Flow of 42,000 acre-feet at Prado. CBMWD (IEUA) and WMWD each year shall be responsible for not less than 37,000 acre-feet of Base Flow at Prado, plus one-third of any cumulative debit; provided, however, that for any year commencing on or after October 1, 1986, when there is no cumulative debit, or for any year prior to 1986 whenever the cumulative credit exceeds 30,000 acre-feet, said minimum shall be 34,000 acre-feet."

The Watermasters agreed that San Jacinto Watershed outflows were not envisioned during the formulation of the Judgment and because of the occurrence of San Jacinto Watershed flows at Prado, the Watermaster decided, as in previous years, to credit one-half of the amount of any such outflows recharging the groundwater basin in Orange County to CBMWD (IEUA) and WMWD.

Of the 12,631 acre-feet of San Jacinto Watershed outflows reaching Prado Reservoir in 2005-06, 5,507 acre-feet flowed past OCWD's groundwater recharge facilities and was considered as lost to the ocean. Therefore, a net amount of 7,124 acre-feet of San Jacinto Watershed outflow recharged the Orange County groundwater basin in

2005-06. One-half of that amount has been considered a credit against the Upper Area Base Flow obligation at Prado Dam. Thus, an additional 3,562 acre-feet was added to the Cumulative Credit at Prado Dam.

While compiling the 2002-03 Watermaster Report, it came to the attention of the Watermaster that in previous reports one-half the San Jacinto Watershed discharge reaching Prado and recharging Orange County groundwater basin had been included in the Cumulative Adjusted Base Flow as well as in the Cumulative Credit. The Watermaster determined that the San Jacinto Watershed discharge should be included only in the Cumulative Credit and not in the Cumulative Adjusted Base Flow. Therefore, the Watermaster revised the Cumulative Adjusted Base Flow and has included a table of historical Watermaster findings concerning flow at Prado that reflect that revision in the report following the Watermaster's findings.

The Watermaster's findings concerning flow at Prado for 2005-06 required under the Stipulated Judgment are as follows:

1.	Measured Outflow at Prado	247,593 acre-feet
2.	Base Flow at Prado	147,736 acre-feet
3.	Annual Weighted TDS of Base and Storm Flow	517 mg/L
4.	Annual Adjusted Base Flow	170,266 acre-feet
5.	Cumulative Adjusted Base Flow	4,387,839 acre-feet
6.	Other Credits (Debits) [1]	3,562 acre-feet
7.	Cumulative Entitlement of OCWD	1,512,000 acre-feet
8.	Cumulative Credit [2]	2,900,672 acre-feet
9.	One-Third of Cumulative Debit	0 acre-feet
10.	Minimum Required Base Flow in 2005-06	34,000 acre-feet

1. Other Credits (Debits) are comprised of San Jacinto Watershed outflow.
2. Cumulative Credit includes 24,833 acre-feet of San Jacinto Watershed outflow.

Historical Watermaster Findings at Prado Dam
(acre-feet)

Water Year	Base Flow	Annual Adjusted Base Flow	Cumulative Adjusted Base Flow	Other Credits (Debits)[1]	Cumulative Entitlement of OCWD	Cumulative Credit[2]
1970-71	38,402	38,402	38,402	0	42,000	(3,598)
1971-72	40,416	40,416	78,818	0	84,000	(5,182)
1972-73	48,999	51,531	130,349	0	126,000	4,349
1973-74	43,106	45,513	175,862	0	168,000	7,862
1974-75	50,176	51,263	227,125	0	210,000	17,125
1975-76	45,627	48,098	275,223	0	252,000	23,223
1976-77	48,387	50,000	325,223	0	294,000	31,223
1977-78	58,501	73,955	399,178	0	336,000	63,178
1978-79	71,863	79,049	478,227	0	378,000	100,227
1979-80	82,509	106,505	584,732	0	420,000	164,732
1980-81	74,875	74,875	659,607	8,045	462,000	205,652
1981-82	81,548	89,431	749,038	0	504,000	253,083
1982-83	111,692	138,591	887,629	3,362	546,000	353,036
1983-84	109,231	115,876	1,003,505	4,602	588,000	431,514
1984-85	125,023	133,670	1,137,175	0	630,000	523,184
1985-86	127,215	141,315	1,278,490	0	672,000	622,499
1986-87	119,848	127,638	1,406,128	0	714,000	708,137
1987-88	124,104	136,308	1,542,436	0	756,000	802,445
1988-89	119,572	131,230	1,673,666	0	798,000	891,675
1989-90	119,149	127,986	1,801,652	0	840,000	977,661
1990-91	111,515	128,379	1,930,031	0	882,000	1,064,040
1991-92	106,948	124,869	2,054,900	0	924,000	1,146,909
1992-93	128,067	163,499	2,218,399	0	966,000	1,268,408
1993-94	111,186	119,432	2,337,831	0	1,008,000	1,345,840
1994-95	123,468	152,792	2,490,623	1,762	1,050,000	1,458,394
1995-96	131,861	152,299	2,642,922	0	1,092,000	1,568,693
1996-97	136,676	157,861	2,800,783	0	1,134,000	1,684,554
1997-98	155,711	195,677	2,996,460	0	1,176,000	1,838,231
1998-99	158,637	174,369	3,170,829	0	1,218,000	1,970,600
1999-00	148,269	169,644	3,340,473	0	1,260,000	2,098,244
2000-01	153,914	176,360	3,516,833	0	1,302,000	2,232,604
2001-02	145,981	159,728	3,676,561	0	1,344,000	2,350,332
2002-03	146,113	174,970	3,851,531	887	1,386,000	2,484,189
2003-04	143,510	166,472	4,018,003	247	1,428,000	2,608,908
2004-05	154,307	199,570	4,217,573	2,366	1,470,000	2,768,844
2005-06	147,736	170,266	4,387,839	3,562	1,512,000	2,900,672

1. Other Credits (Debits) are comprised of San Jacinto Watershed outflow.
2. Cumulative Credit includes 24,833 acre-feet of San Jacinto Watershed outflow.

CHAPTER III

BASE FLOW AT RIVERSIDE NARROWS

This chapter deals with determinations of 1) the components of flow at Riverside Narrows, which include Storm Flow and Base Flow and 2) the Adjusted Base Flow at Riverside Narrows credited to SBVMWD.

Flow at Riverside Narrows

The flow of the Santa Ana River at Riverside Narrows amounted to 111,840 acre-feet, measured at the USGS gaging station near the MWD Crossing. Separated into its components, Base Flow was 67,161 acre-feet and Storm Flow was 46,270 acre-feet. Included in Base Flow are 2,318 acre-feet of wastewater from Rubidoux Community Services District that now bypasses the USGS gaging station. Also present in the stream flow, but excluded from the Base Flow was 727 acre-feet of WMWD-OCWD Transfer Program flows. The Storm and Base Flow components of the flow of the Santa Ana River at Riverside Narrows for each month in the 2005-06 Water Year are listed in Table 7 and shown graphically on Plate 7. The components of flow of the Santa Ana River at Riverside Narrows during the period 1934-35 through 2005-06 are presented on Plate 8.

Nontributary Flow

Nontributary Flow includes water that originated outside the watershed, as well as other water that the Watermaster has determined should be excluded from Base Flow. During the 2005-06 Water Year WMWD-OCWD Transfer Program flow was delivered to the Santa Ana River upstream of Riverside Narrows and Prado Dam.

High Groundwater Mitigation Project

No High Groundwater Mitigation Project water was discharged to the Santa Ana River during the 2005-06 Water Year.

WMWD-OCWD Transfer Program

In 2001, OCWD and WMWD entered into an agreement that provides for delivery of groundwater pumped primarily from the Bunker Hill Basin to OCWD via the Riverside Canal and Santa Ana River. During the 2005-06 Water Year, WMWD delivered 727 acre-feet to the Santa Ana River via the Tava Lane turnout upstream of Riverside Narrows and Prado Dam. A summary of the WMWD-OCWD Transfer Program flows is contained in Appendix K.

TABLE 7

COMPONENTS OF FLOW AT RIVERSIDE NARROWS
WATER YEAR 2005-06
(acre-feet)

	Month	USGS Measured Flow	Storm Flow	SBVMWD HGMP Water[1]	WMWD Transfer Program[2]	Rubidoux Waste-water	Base Flow[3]
2005	October	8,749	2,908	0	0	175	6,016
	November	5,365	0	0	0	196	5,561
	December	7,234	268	0	0	196	7,162
2006	January	8,743	2,815	0	0	200	6,128
	February	11,857	5,692	0	0	178	6,343
	March	12,292	5,932	0	0	197	6,557
	April	28,064	22,083	0	0	192	6,173
	May	12,042	6,572	0	0	199	5,669
	June	4,505	0	0	0	193	4,698
	July	3,695	0	0	0	202	3,897
	August	5,270	0	0	336	198	5,132
	September	4,024	0	0	391	192	3,825
Total		111,840	46,270	0	727	2,318	67,161

(1) HGMP water pumped from the Bunker Hill groundwater basin and discharged into the Santa Ana River less 1% for evapotranspiration above Riverside Narrows.

(2) WMWD-OCWD Transfer Program water pumped from the Bunker Hill, Riverside, and Colton basins and discharged to the Santa Ana River above the Riverside Narrows.

(3) Base Flow equals USGS measured flow, minus storm flow, minus HGMP, and minus WMWD-OCWD Transfer water, plus Rubidoux Wastewater.

Base Flow

Based on the hydrograph shown on Plate 7 and utilizing in general the procedures reflected in the Work Papers of the engineers (as referenced in Paragraph 2 of the Engineering Appendix of the Stipulated Judgment), a separation was made between Storm Flow and the sum of Base Flow and Nontributary Flow.

In April 1980, Rubidoux Community Services District made the first delivery of wastewater to the regional treatment plant at Riverside. Prior to that time, Rubidoux had discharged to the river upstream of the Riverside Narrows gaging station. Wastewater from Rubidoux during Water Year 2005-06, in the amount of 2,318 acre-feet, has been added to the Base Flow as measured at the gaging station. A summary of Rubidoux discharges is contained in Appendix I.

Water Quality Adjustments

The determination of water quality at the Riverside Narrows Gaging Station was made using periodic grab samples taken and analyzed for TDS by the USGS and the City of Riverside. Water quality data based on samples taken during storm flow periods were not used in the calculations. A summary of TDS and EC data of the Santa Ana River at Riverside Narrows is contained in Appendix J.

Adjustment for High Groundwater Mitigation Project Discharge

Since there was no discharge of High Groundwater Mitigation Project water during Water Year 2005-06, no water quality adjustment was required.

Adjustment for WMWD-OCWD Transfer Program Flows

During the 2005-06 Water Year, WMWD delivered 727 acre-feet to the Santa Ana River upstream of Riverside Narrow and Prado. A TDS of 302 mg/L was calculated for that water. A summary of the WMWD-OCWD Transfer Program flows is contained in Appendix K.

Adjustment for Wastewater Discharges from the Rubidoux Community Services District

The flow-weighted quality of wastewater from Rubidoux was 681 mg/L. A monthly summary of discharges and quality is contained in Appendix I.

The Base Flow quality resulting from exclusion of the Nontributary Flow and inclusion of the Rubidoux wastewater is shown in the following table as 602 mg/L.

Flow Component	Annual Flow (acre-feet)	Average TDS (mg/L)	Annual Flow x Average TDS (acre-feet x mg/L)
1. Base Flow plus Nontributary Flow	65,570	602	39,473,140
2. Less Nontributary Flow HGMP Pumped Water	0	---	---
3. Less WMWD Transfer Flow	(727)	302	(219,554)
4. Plus Rubidoux Wastewater	2,318	681	1,578,558
5. Base Flow (line 1 less lines 2 and 3 plus line 4)	67,161		40,832,144
Average TDS of Base Flow	40,832,144 ÷ 67,161 = 608 mg/L		

Adjusted Base Flow at Riverside Narrows

The Stipulated Judgment provides that the amount of Base Flow at Riverside Narrows received during any year shall be subject to adjustment based on weighted average annual TDS in the Base Flow as follows:

If the Weighted Average TDS in Base Flow at Riverside Narrows is:	Then the Adjusted Base Flow shall be determined by the formula:
Greater than 700 mg/L	$Q - \frac{11}{15,250}Q(TDS-700)$
600 mg/L to 700 mg/L	Q
Less than 600 mg/L	$Q + \frac{11}{15,250}Q(600-TDS)$

Where: Q = Base Flow actually received.

From the previous subsection, the weighted average annual TDS in the Base Flow at Riverside Narrows for Water Year 2005-06 was 608 mg/L. Therefore, no adjustment is necessary, and the Adjusted Base Flow for 2005-06 is 67,161 acre-feet.

Entitlement and Credit or Debit

Paragraph 5(b) of the Stipulated Judgment states that "SBVMWD shall be responsible for an average annual Adjusted Base Flow of 15,250 acre-feet at Riverside Narrows . . . SBVMWD each year shall be responsible for not less than 13,420 acre-feet of Base Flow plus one-third of any cumulative debit, provided, however, that for any year commencing on or after October 1, 1986, when there is no cumulative debit, or for any year prior to 1986 whenever the cumulative credit exceeds 10,000 acre-feet, said minimum shall be 12,420 acre-feet."

The Watermaster's findings concerning flow at Riverside Narrows for 2005-06 required under the Stipulated Judgment are as follows:

1.	Base Flow at Riverside Narrows	67,161 acre-feet
2.	Annual Weighted TDS of Base Flow	608 mg/L
3.	Annual Adjusted Base Flow	67,161 acre-feet
4.	Cumulative Adjusted Base Flow	1,604,442 acre-feet
5.	Cumulative Entitlement of CBMWD and WMWD	549,000 acre-feet
6.	Cumulative Credit	1,055,442 acre-feet
7.	One-Third of Cumulative Debit	0 acre-feet
8.	Minimum Required Base Flow in 2006-07	12,420 acre-feet

CHAPTER IV

HISTORY AND SUMMARY OF THE JUDGMENT in the case of Orange County Water District v. City of Chino, et al. (Case No. 117628-County of Orange)

History of Litigation

The complaint in the case was filed by Orange County Water District on October 18, 1963, seeking an adjudication of water rights against substantially all water users in the area tributary to Prado Dam within the Santa Ana River Watershed, but excluding the area tributary to Lake Elsinore. Thirteen cross-complaints were filed in 1968, extending the adjudication to include substantially all water users in the area downstream from Prado Dam. With some 4,000 parties involved in the case (2,500 from the Upper Area and 1,500 from the Lower Area), it became obvious that every effort should be made to arrive at a settlement and physical solution in order to avoid enormous and unwieldy litigation.

Efforts to arrive at a settlement and physical solution were pursued by public officials, individuals, attorneys, and engineers. Attorneys for the parties organized in order to facilitate settlement discussions and, among other things, provided guidance for the formation and activities of an engineering committee to provide information on the physical facts.

An initial meeting of the engineers representing the parties was held on January 10, 1964. Agreement was reached that it would be beneficial to undertake jointly the compilation of basic data. Liaison was established with the Department of Water Resources, State of California, to expedite the acquisition of data. Engineers representing the parties were divided into subcommittees which were given the responsibility of investigating such things as the boundary of the Santa Ana River Watershed and its subareas, standardization of the terminology, the location and description of wells and diversion facilities, waste disposal and transfer of water between subareas.

In response to a request from the attorneys' committee at a meeting held April 17, 1964, on April 30, 1964, the joint engineering committee prepared a list of preliminary engineering studies directed toward settlement of the Santa Ana River water rights litigation. Special assignments were made to individual engineers on selected items requested by the attorneys' committee.

The attorneys and engineers for the defendants then commenced a series of meetings separate from the representatives of the plaintiffs in order to consolidate their positions and to determine a course of action. On October 7, 1964, engineers for the defendants presented the results of the studies made by the joint engineering committee. The defendants' attorneys requested that additional information be provided on the methods

of measuring flow at Prado Dam, the historical supply and disposal of water passing Prado Dam, segregation of flow into components, and determination of the amount of supply which was usable by the downstream area. On December 11, 1964, the supplemental information was presented to the defendants' attorneys.

During 1965, engineers and attorneys for the defendants held numerous conferences and conducted additional studies in an attempt to determine their respective positions in the case. Early in 1966, the plaintiff and defendants exchanged drafts of possible principles for settlement. Commencing March 22 and ending April 13, 1966, four meetings were held by the engineers to discuss the draft of principles for settlement.

On February 25, 1968, the defendants submitted a request to the Court that the Order of Reference be issued requesting the California Department of Water Resources to determine the physical facts. On May 9, 1968, the plaintiffs' attorney submitted motions opposing the Order of Reference and requested that a preliminary injunction be issued. In the meantime, every effort was being made to come to an agreement on the Stipulated Judgment. Commencing on February 28, 1968 and extending until May 14, 1968, six meetings were held to determine the scope of physical facts on which agreement could be reached so that if an Order of Reference were to be approved by the Court, the work under the proposed reference would not repeat the extensive basic data collection and compilation which had already been completed and on which engineers for both plaintiffs and defendants had reached substantial agreement. Such basic data were compiled and published in two volumes under date of May 14, 1968 entitled "Appendix A, Basic Data."

On May 21, 1968, an outline of a proposal for settlement of the case was prepared and a committee of attorneys and engineers for the parties commenced preparation of the settlement documents. On June 16, 1968, the Court held a hearing on the motions it had received requesting a preliminary injunction and an Order of Reference. The parties requested that the Court delay the preliminary hearings on these motions in view of the efforts toward settlement that were underway. The plaintiff, however, was concerned regarding the necessity of bringing the case to trial within the statutory limitation and, accordingly, on July 15, 1968, submitted a motion to set the complaint in the case for trial. On October 15, 1968, the trial was commenced and was adjourned after one-half day of testimony on behalf of the plaintiff. Thereafter, the parties filed with the Court the necessary Settlement Documents including a Stipulation for Judgment. The Court entered the Judgment on April 17, 1969, along with Stipulations and Orders dismissing all defendants and cross-defendants except for the four major public water districts overlying, in aggregate, substantially all of the major areas of water use in the watershed. The districts, the locations of which are shown on Plate 1, "Santa Ana River Watershed", are as follows:

(1) Orange County Water District (OCWD), representing all lower basin entities located within Orange County downstream of Prado Dam.

(2) Western Municipal Water District (WMWD), representing middle basin entities located within Riverside County on both sides of the Santa Ana River primarily upstream from Prado Dam.

(3) Inland Empire Utilities Agency (IEUA), formerly Chino Basin Municipal Water District (CBMWD), located in the San Bernardino County Chino Basin area, representing middle basin entities within its boundaries and located primarily upstream from Prado Dam.

(4) San Bernardino Valley Municipal Water District (SBVMWD), representing all entities within its boundaries, and embraced within the upper portion of the Riverside Basin area, the Colton Basin area (being an upstream portion of the middle basin) and the San Bernardino Basin area, being essentially the upper basin.

Summary of Judgment

Declaration of Rights. The Judgment sets forth a declaration of rights. Briefly stated, the Judgment provides that the water users in the Lower Area have rights, as against the water users in the Upper Area, to receive certain average and minimum annual amounts of non-storm flow ("base flow") at Prado Dam, together with the right to all storm flow reaching Prado Dam. The amount of the Lower Area entitlement is variable based on the quality of the water received by the Lower Area. Water users in the Upper Area have the right as against the water users in the Lower Area to divert, pump, extract, conserve, store and use all surface and groundwater supplies originating within the Upper Area, so long as the Lower Area receives the water to which it is entitled under the Judgment and there is compliance with all of its provisions.

Physical Solution. The Judgment also sets forth a comprehensive "physical solution" for satisfying the rights of the Lower Area. To understand the physical solution it is necessary to understand the following terms that are used in the Judgment:

Storm Flow – That portion of the total flow which originates from precipitation and runoff and which passes a point of measurement (either Riverside Narrows or Prado Dam) without having first percolated to groundwater storage in the zone of saturation, calculated in accordance with procedures referred to in the Judgment.

Base Flow - That portion of the total surface flow passing a point of measurement (either Riverside Narrows or Prado Dam) which remains after deduction of storm flow, nontributary flows, exchange water purchased by OCWD, and certain other flows as determined by the Watermaster.

Adjusted Base Flow - Actual base flow in each year adjusted for water quality pursuant to formulas specified in the Judgment. The adjustment of Base Flow for water quality is intended to provide an incentive to the Upper Area to maintain a

better quality of water in the river. When the total dissolved solids (TDS) is lower than a specified value at one of the measuring points, the water quantity obligation is lower. When the TDS is higher than a specified value, the water quantity obligation is higher. This is the first comprehensive adjudication in Southern California in which the quality of water is taken into consideration in the quantification of water rights.

Credits and Debits - Under the accounting procedures provided for in the Judgment, credits accrue to SBVMWD in any year when the Adjusted Base Flow exceeds 15,250 acre-feet at Riverside Narrows and jointly to IEUA and WMWD when the Adjusted Base Flow exceeds 42,000 acre-feet at Prado Dam. Debits accrue in any year when the Adjusted Base Flows falls below those levels. Credits or debits accumulate year to year.

Obligation at Riverside Narrows. SBVMWD has an obligation to assure an average annual Adjusted Base Flow of 15,250 acre-feet at Riverside Narrows, subject to the following:

(1) A minimum Base Flow of 13,420 acre-feet plus one-third of any cumulative debit.

(2) After October 1, 1986, if no cumulative debit exists, the minimum Base Flow shall be 12,420 acre-feet.

(3) Prior to 1986, if the cumulative credits exceed 10,000 acre-feet, the minimum Base Flow shall be 12,420 acre-feet.

(4) All cumulative debits shall be removed by the discharge of a sufficient Base Flow at Riverside Narrows at least once in any ten consecutive years following October 1, 1976. Any cumulative credits shall remain on the books of account until used to offset any subsequent debits or until otherwise disposed of by SBVMWD.

(5) The Base Flow at Riverside Narrows shall be adjusted using weighted average annual TDS in such Base Flow in accordance with the formula set forth in the Judgment.

Obligation at Prado Dam. IEUA and WMWD have a joint obligation to assure an average annual Adjusted Base Flow of 42,000 acre-feet at Prado Dam, subject to the following:

(1) Minimum Base Flow at Prado shall not be less than 37,000 acre-feet plus one-third of any cumulative debit.

(2) After October 1, 1986, if no cumulative debit exists, the minimum Base Flow quantity shall be 34,000 acre-feet.

(3) Prior to 1986, if the cumulative credit exceeds 30,000 acre-feet, the minimum Base Flow shall be 34,000 acre-feet.

(4) Sufficient quantities of Base Flow shall be provided at Prado to discharge completely any cumulative debits at least once in any ten consecutive years following October 1, 1976. Any cumulative credits shall remain on the books of account until used to offset any debits, or until otherwise disposed of by IEUA and WMWD.

(5) The Base Flow at Prado during any year shall be adjusted using the weighted average annual TDS in the total flow at Prado (Base Flow plus Storm Flow) in accordance with the formula set forth in the Judgment.

Other Provisions. SBVMWD, IEUA and WMWD are enjoined from exporting water from the Lower Area to the Upper Area, directly or indirectly. OCWD is enjoined from exporting or "directly or indirectly causing water to flow" from the Upper Area to the Lower Area. Any inter-basin acquisition of water rights will have no effect on Lower Area entitlements. OCWD is prohibited from enforcing two prior judgments so long as the Upper Area Districts are in compliance with the physical solution. The composition of the Watermaster and the nomination and appointment process for members are described along with a definition of the Watermaster's duties and a formula for sharing its costs. The court retains continuing jurisdiction over the case. There are provisions for appointment of successor parties and rules for dealing with future actions that might conflict with the physical solution.

History of the Watermaster Committee Membership

The Santa Ana River Watermaster is a committee composed of five members nominated by the parties and appointed by the court. SBVMWD, IEUA (formerly CBMWD), and WMWD nominate one member each and OCWD nominates two. The Watermaster members annually elect a Chairman, Secretary, and Treasurer.

The original five members were appointed at the time of entry of the judgment. They prepared a *pro forma* annual report for the 1969-70 Water Year. The first annual report required by the judgment was prepared for the 1970-71 Water Year and reports have been prepared annually since then.

The membership of the Watermaster has changed over the years. The historical listing of members and officers shown in Table 8 reflects the signatories to each annual report.

TABLE 8

HISTORY OF THE WATERMASTER COMMITTEE MEMBERSHIP

Water Year	SBVMWD	IEUA	WMWD	OCWD	OCWD
1969-70	Clinton O. Henning	William J. Carroll	Albert A. Webb, Secretary	Max Bookman, Chairman	John M. Toups
1970-71 through 1973-74	James C. Hanson	William J. Carroll	Albert A. Webb, Secretary	Max Bookman, Chairman	John M. Toups
1974-75 through 1977-78	James C. Hanson	William J. Carroll	Donald L. Harriger	Max Bookman, Chairman	John M. Toups, Secretary
1978-79 through 1981-82	James C. Hanson	William J. Carroll	Donald L. Harriger	Max Bookman, Chairman	William R. Mills, Jr., Secretary
1982-83 through 1983-84	James C. Hanson	William J. Carroll	Donald L. Harriger	Harvey O. Banks, Chairman	William R. Mills, Jr., Secretary
1984-85 through 1988-89	Robert L. Reiter	William J. Carroll	Donald L. Harriger	Harvey O. Banks, Chairman	William R. Mills, Jr., Secretary
1989-90 through 1994-95	Robert L. Reiter, Secretary/Treasurer	William J. Carroll	Donald L. Harriger	Harvey O. Banks, Chairman	William R. Mills, Jr.
1995-96	Robert L. Reiter, Secretary/Treasurer	William J. Carroll, Chairman	Donald L. Harriger	Bill B. Dendy	William R. Mills, Jr.
1996-97	Robert L. Reiter, Secretary/Treasurer	William J. Carroll	Donald L. Harriger	Bill B. Dendy	William R. Mills, Jr., Chairman
1997-98	Robert L. Reiter, Secretary/Treasurer	Robb D. Quincey	Donald L. Harriger	Bill B. Dendy	William R. Mills, Jr., Chairman
1998-99 through 2000-01	Robert L. Reiter, Secretary/Treasurer	Richard W. Atwater	Donald L. Harriger	Bill B. Dendy	William R. Mills, Jr., Chairman
2001-02 through 2002-03	Robert L. Reiter, Secretary/Treasurer	Richard W. Atwater	Donald L. Harriger, Chairman	Bill B. Dendy	Virginia L. Grebbien
2003-04 through 2005-06	Robert L. Reiter, Chairman/Treasurer	Richard W. Atwater	John V. Rossi	Bill B. Dendy, Secretary	Virginia L. Grebbien

Santa Ana River Watershed

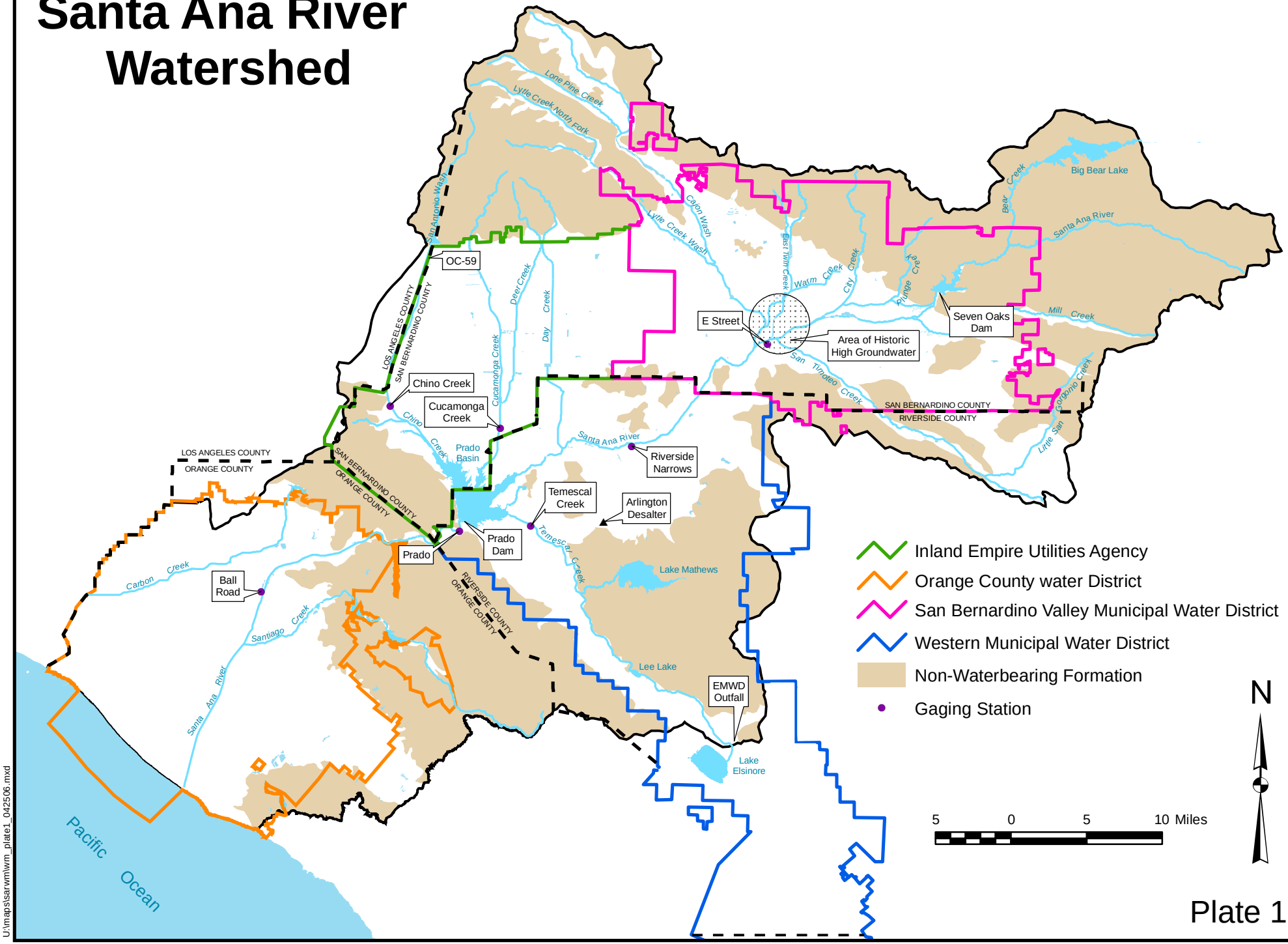


Plate 1

U:\maps\sarwm\wm_plate1_042506.mxd

Santa Ana River Watershed Wastewater Treatment Plants and Salt Export Pipelines

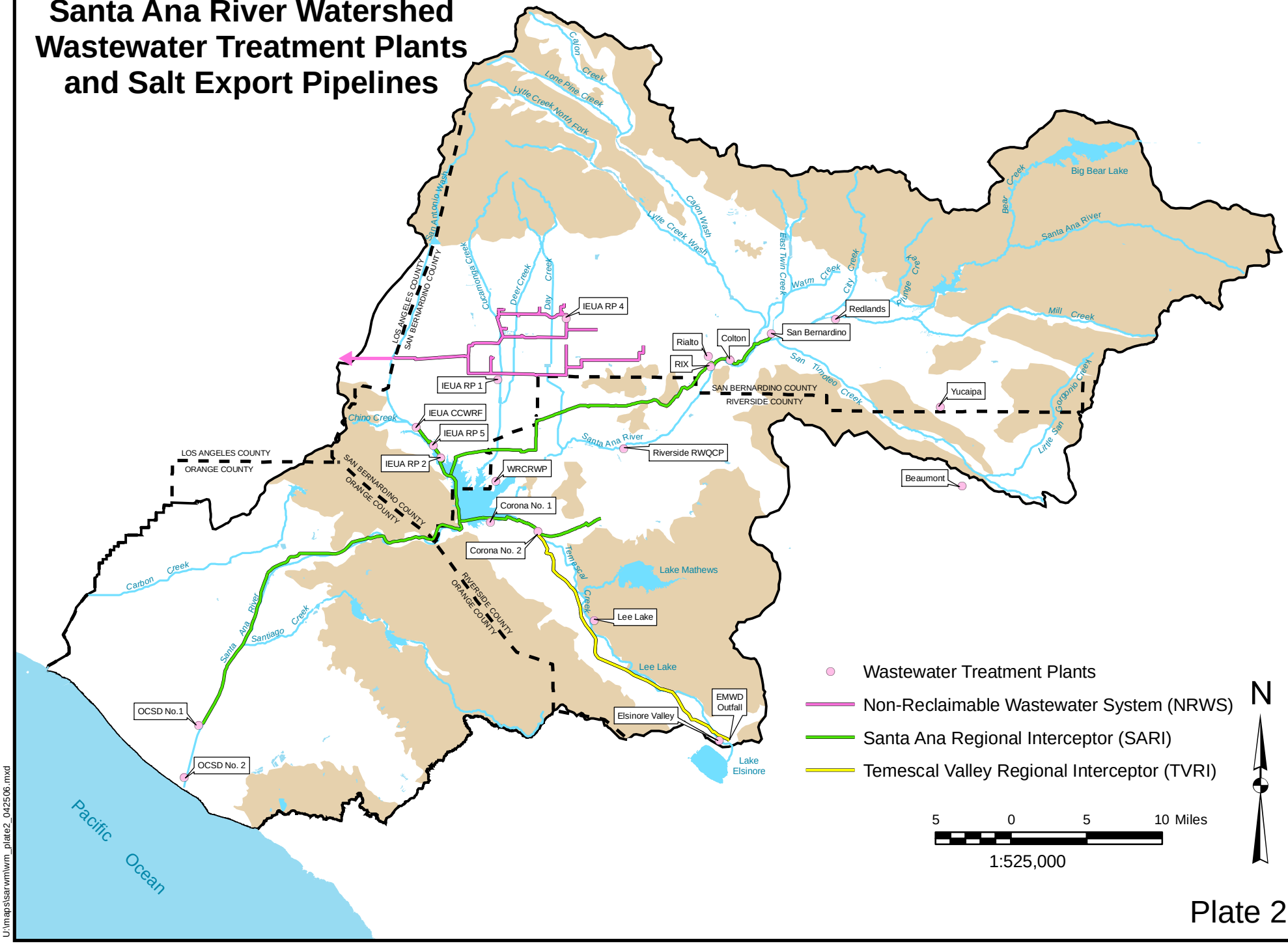


Plate 2

U:\maps\sarwm\wm_plate2_042506.mxd

PRECIPITATION AT SAN BERNARDINO STARTING WITH 1934-35

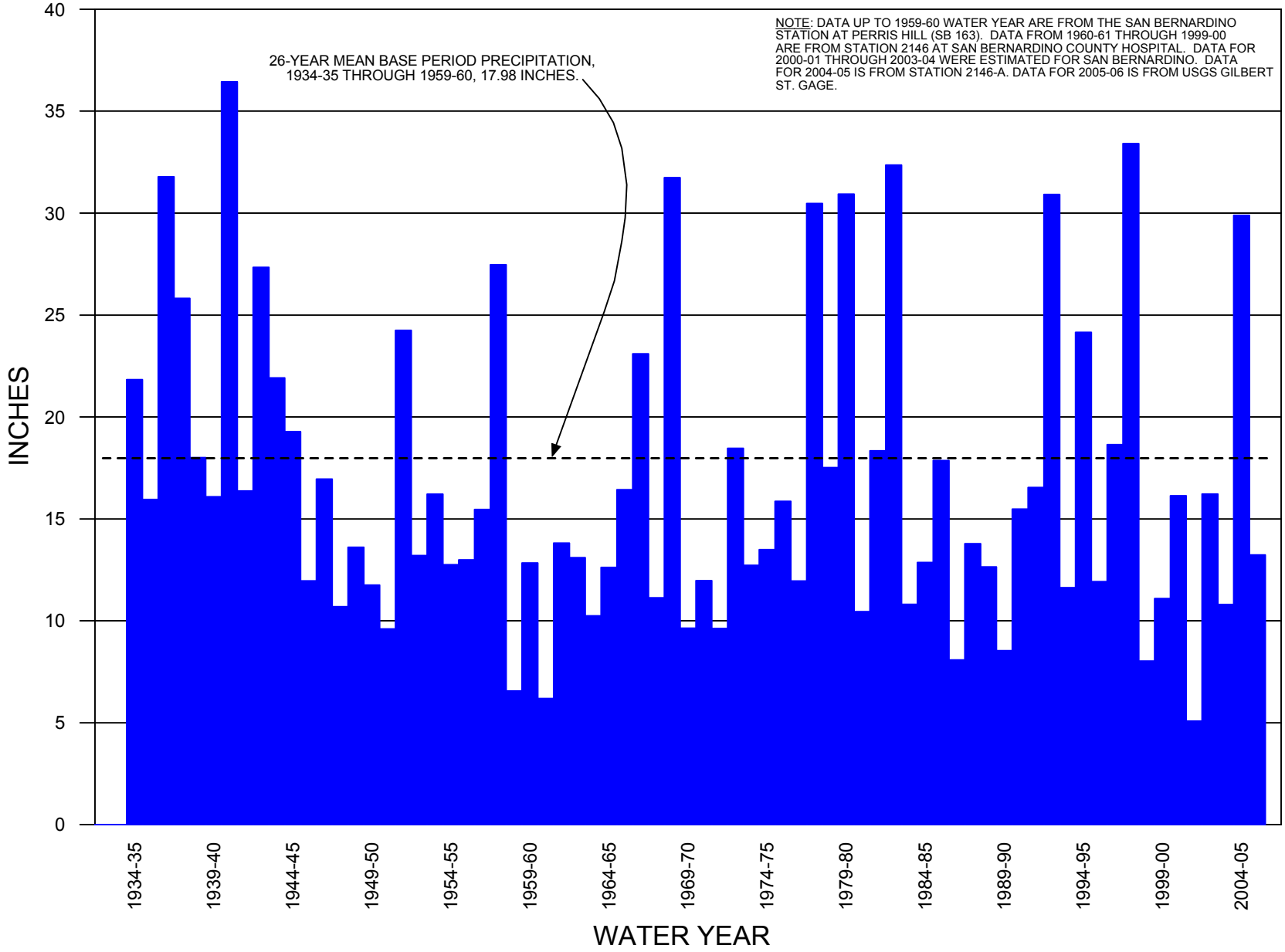
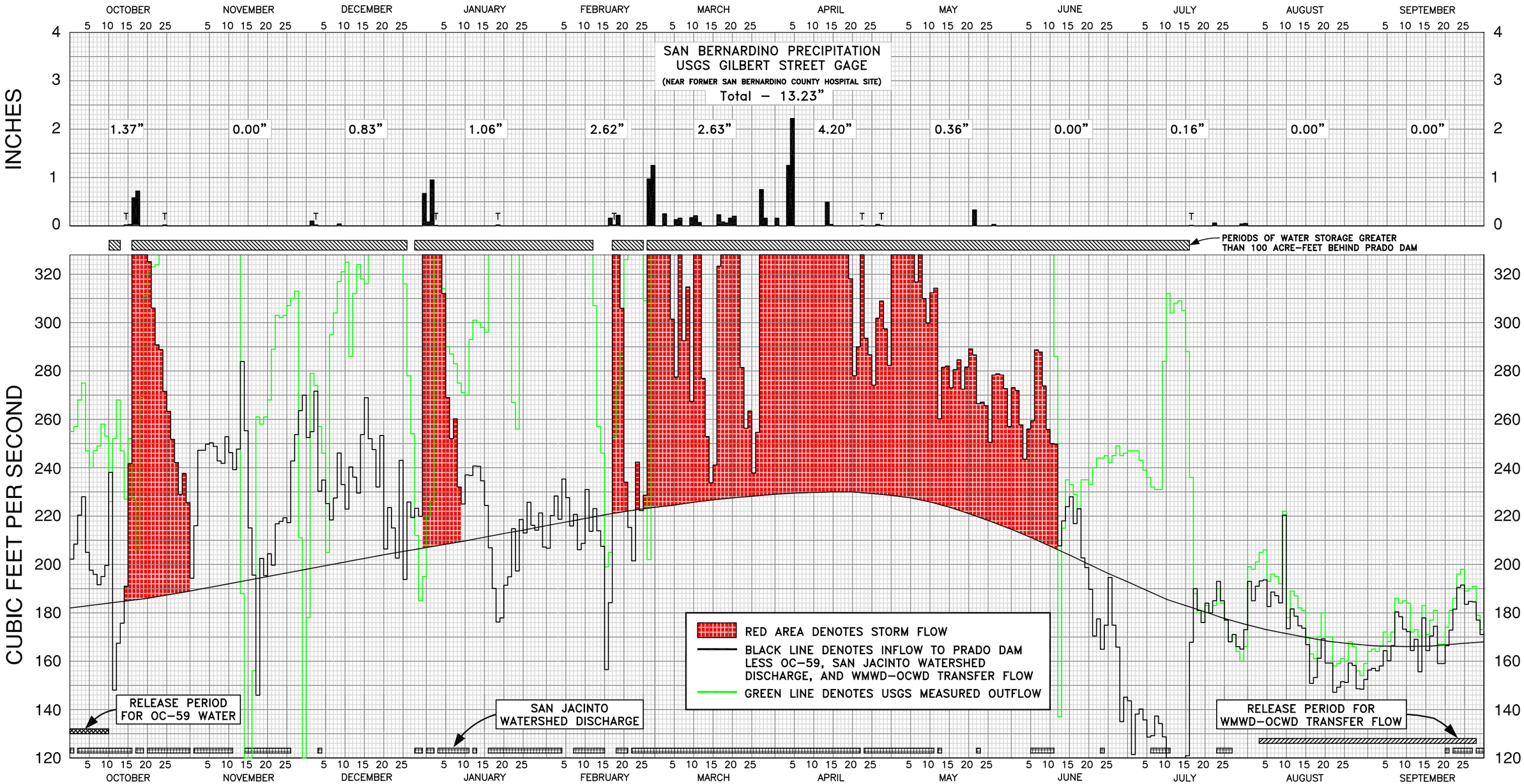


PLATE 3



DISCHARGE OF SANTA ANA RIVER AT PRADO DAM & SAN BERNARDINO PRECIPITATION
WATER YEAR 2005-06

Plate 4

DISCHARGE OF SANTA ANA RIVER AT PRADO STARTING WITH 1934-35

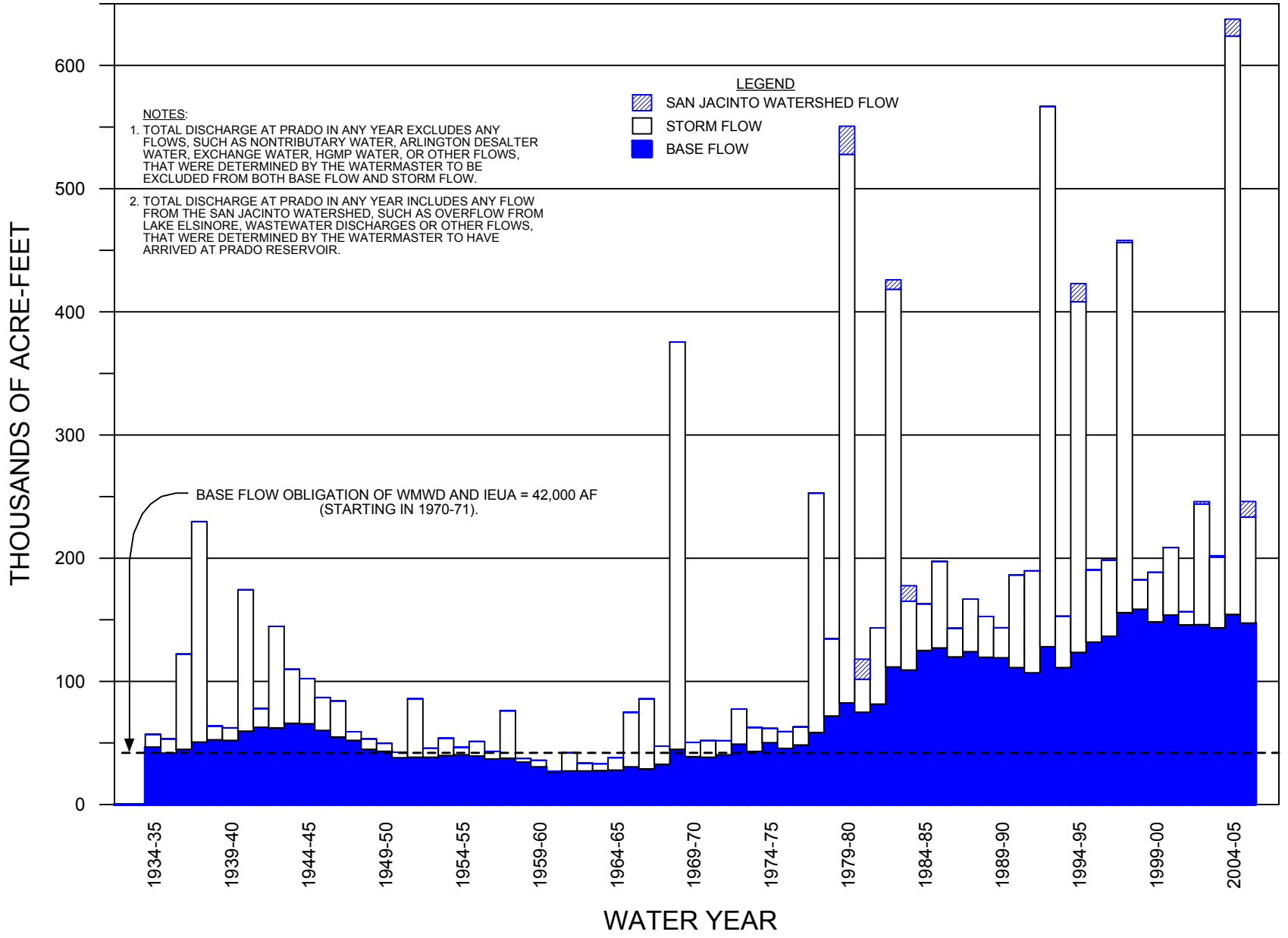
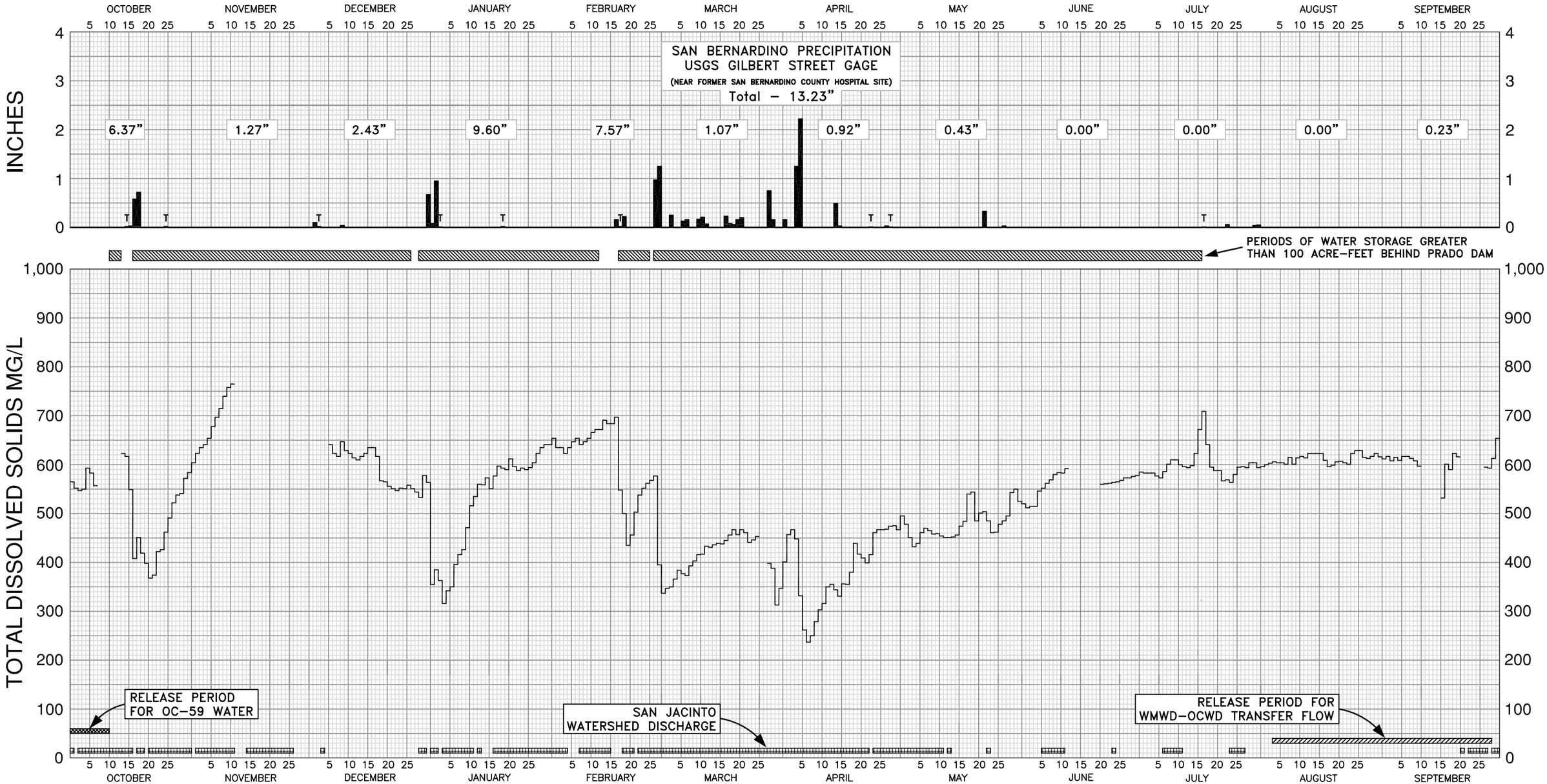
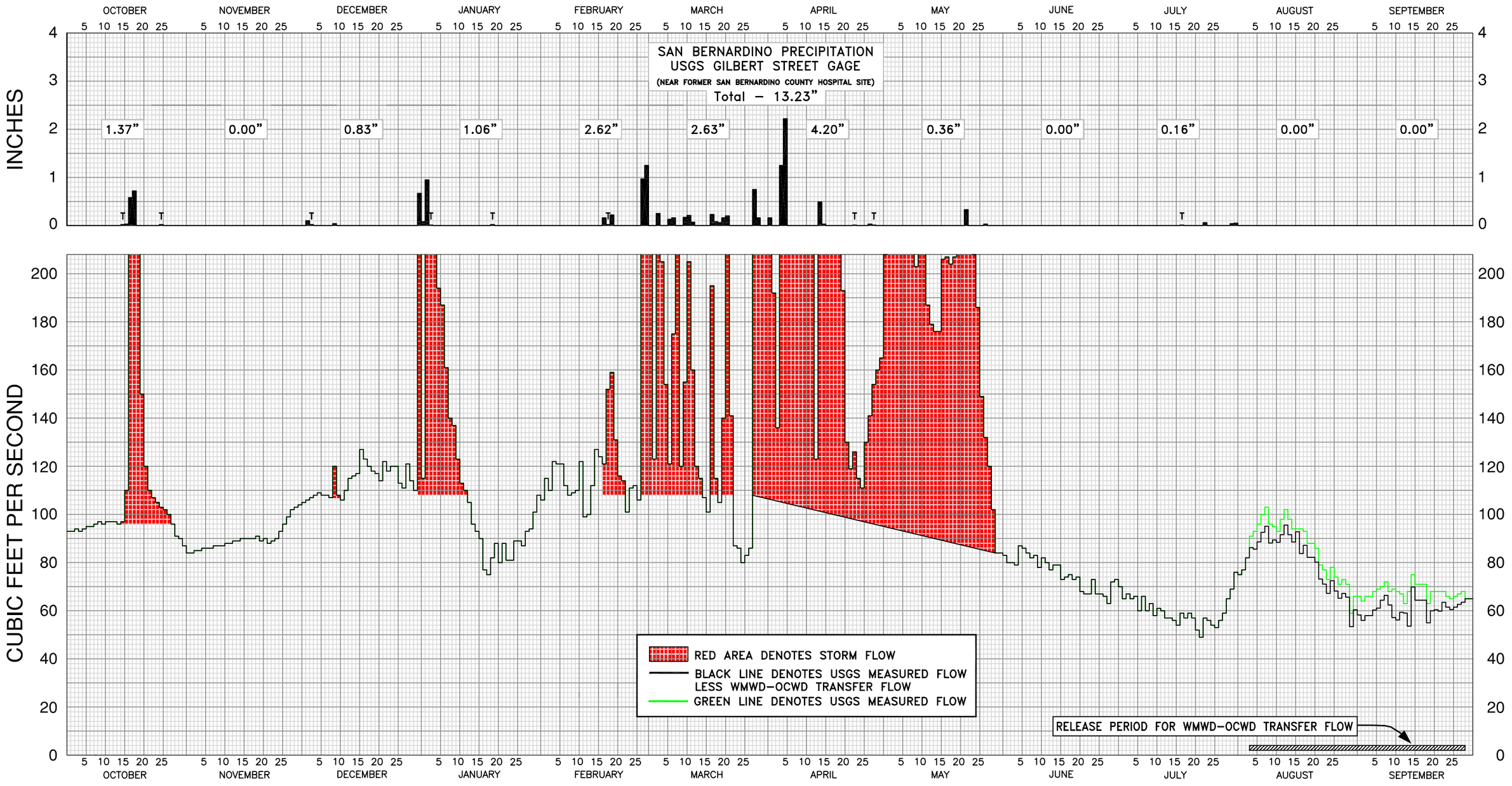


PLATE 5



DISSOLVED SOLIDS IN SANTA ANA RIVER BELOW PRADO DAM
WATER YEAR 2005-06

Plate 6



DISCHARGE OF SANTA ANA RIVER AT RIVERSIDE NARROWS & SAN BERNARDINO PRECIPITATION
WATER YEAR 2005-06

Plate 7

DISCHARGE OF SANTA ANA RIVER AT RIVERSIDE NARROWS STARTING WITH 1934-35

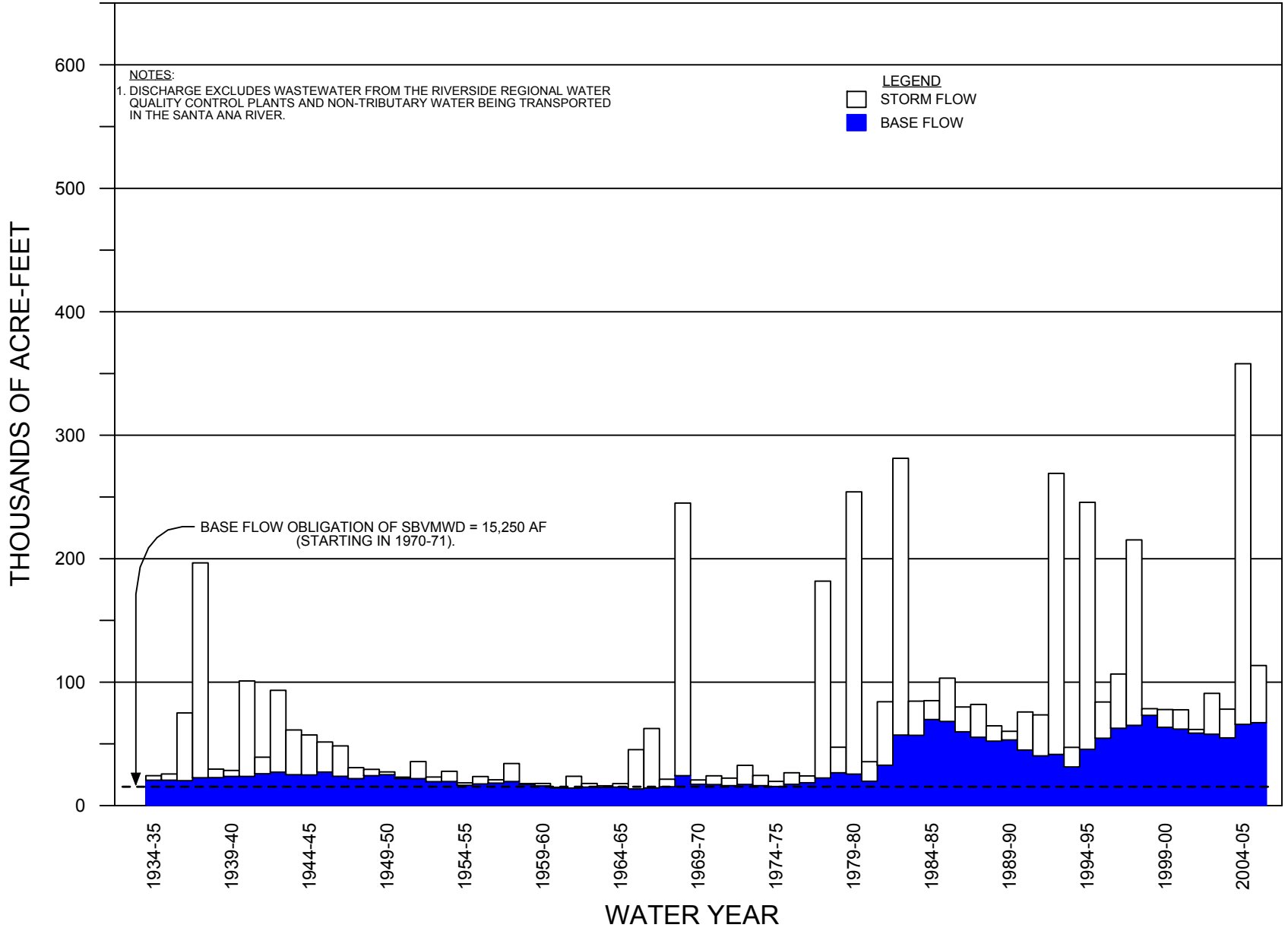


PLATE 8

SANTA ANA RIVER WATERMASTER

FOR

ORANGE COUNTY WATER DISTRICT

v. CITY OF CHINO, et al.

CASE NO. 117628 - COUNTY OF ORANGE

BASIC DATA

FOR THE

THIRTY-SIXTH ANNUAL REPORT

OF THE

SANTA ANA RIVER WATERMASTER

FOR WATER YEAR

OCTOBER 1, 2005 - SEPTEMBER 30, 2006

APRIL 30, 2007

APPENDIX A

USGS FLOW MEASUREMENTS OF THE SANTA ANA RIVER FLOWS BELOW PRADO, AT MWD CROSSING, AND AT E STREET; AND OF TEMESCAL CREEK ABOVE MAIN STREET (AT CORONA), CUCAMONGA CREEK (NEAR MIRA LOMA) AND CHINO CREEK AT SCHAEFER AVENUE (NEAR CHINO); AND WATER QUALITY RECORDS FOR THE SANTA ANA RIVER AT PRADO DAM AND AT MWD CROSSING

WATER YEAR 2005-06

Water-Data Report 2006

11074000 Santa Ana River below Prado Dam, CA

Santa Ana River Basin; Santa Ana River Subbasin

LOCATION.--Lat 33°53′00″, long 117°38′40″ referenced to North American Datum of 1927, Riverside County, Hydrologic Unit 18070203, in La Sierra Grant, on right bank of outlet channel, 2,500 ft downstream from axis of Prado Dam, and 4.5 mi west of Corona.

DRAINAGE AREA.--2,258 mi² of which 768 mi² probably is noncontributing, above Lake Elsinore.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--May 1930 to November 1939 (irrigation seasons only), March 1940 to current year. Published as "at Santa Fe Railroad Bridge, near Prado" May 1930 to November 1931, as "at Atchison, Topeka, and Santa Fe Railroad Bridge, near Prado" May 1932 to November 1939, and as "below Prado Dam, near Prado" March 1940 to September 1950.

GAGE.--Water-stage recorder and concrete control since August 1944 and through Apr. 25, 2005, and again since Nov. 14, 2005. Datum of gage is approximately 449 ft above NGVD of 1929 (levels by U.S. Army Corps of Engineers). Prior to Mar. 18, 1940, at about same site at various datums. From Apr. 26, 2005, to Nov. 13, 2005, gage was located on right bank of a temporary bypass (diversion) channel, in use during the construction of an improved outlet channel from Prado Dam. Temporary gage was at a different datum. Since Nov. 14, 2005, gage is located on right bank of reconstructed outlet channel.

REMARKS.--Records fair below 2,000 ft³/s and good above, except for estimated daily discharges, which are poor. Flow regulated since 1940 by Prado Flood-Control Reservoir, capacity, 196,200 acre-ft. Natural streamflow affected by extensive ground-water withdrawals, diversion for irrigation, discharges of treated effluent, and return flow from irrigated areas. Releases of imported water are made to the basin by the California Water Project at times in some years, via San Antonio Creek from Rialto Pipeline below San Antonio Dam. During the current year, the California Water Project released 361 acre-ft to the basin. See schematic diagram of Santa Ana River Basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,200 ft³/s, Jan. 15, 2005, gage height, 8.73 ft, site and datum then in use, from rating curve extended above 11,600 ft³/s; minimum daily, 2.4 ft³/s, July 29 to Aug. 3, Sept. 20, 1978 (result of gate closure).

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 2, 1938, reached a discharge of 100,000 ft³/s, on basis of slope-area measurement of peak flow at site 2.5 mi downstream.

11074000 Santa Ana River below Prado Dam, CA—Continued

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006
DAILY MEAN VALUES
[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	255	367	178	203	356	572	488	475	383	251	193	164
2	257	367	279	210	371	540	504	462	406	250	185	165
3	268	366	274	816	376	491	527	443	416	249	191	164
4	275	363	257	666	378	489	564	437	425	242	198	166
5	247	359	246	322	382	486	3,310	428	439	234	201	172
6	240	356	202	294	383	503	2,980	426	448	232	190	168
7	247	355	285	291	380	515	1,240	423	441	226	196	172
8	249	362	289	286	345	513	688	449	434	225	195	186
9	258	367	296	278	397	507	685	457	421	225	192	184
10	253	367	294	274	386	502	1,120	455	408	282	226	185
11	e226	367	292	273	371	512	1,200	344	391	309	178	184
12	e120	364	260	297	339	505	648	475	303	306	188	172
13	268	359	283	305	304	498	543	474	e137	318	185	173
14	247	e188	291	305	254	486	577	468	e229	325	181	170
15	227	100	284	302	243	486	1,310	462	e235	328	179	183
16	252	99	284	300	197	460	638	460	e233	312	168	171
17	227	156	378	343	202	453	568	460	e229	249	161	177
18	206	261	365	365	249	462	403	458	e223	190	159	181
19	269	258	352	362	271	482	376	448	e235	181	167	167
20	313	261	339	358	285	496	476	450	e235	176	175	167
21	323	268	342	353	322	482	448	457	230	184	165	174
22	325	289	340	359	332	462	457	455	239	180	165	181
23	325	303	328	276	348	453	454	442	243	185	153	186
24	332	302	314	262	359	452	459	435	242	193	155	195
25	360	303	303	356	339	451	460	434	243	185	157	196
26	364	307	281	357	305	434	456	426	240	177	157	188
27	370	310	255	353	199	406	464	425	243	168	165	189
28	372	313	236	352	372	407	475	424	252	171	164	189
29	372	211	197	354	---	452	469	423	252	166	154	177
30	372	117	169	355	---	468	473	424	252	165	154	171
31	368	---	178	355	---	477	---	381	---	173	158	---
Total	8,787	8,765	8,671	10,582	9,045	14,902	23,460	13,680	9,107	7,057	5,455	5,317
Mean	283	292	280	341	323	481	782	441	304	228	176	177
Max	372	367	378	816	397	572	3,310	475	448	328	226	196
Min	120	99	169	203	197	406	376	344	137	165	153	164
Ac-ft	17,430	17,390	17,200	20,990	17,940	29,560	46,530	27,130	18,060	14,000	10,820	10,550

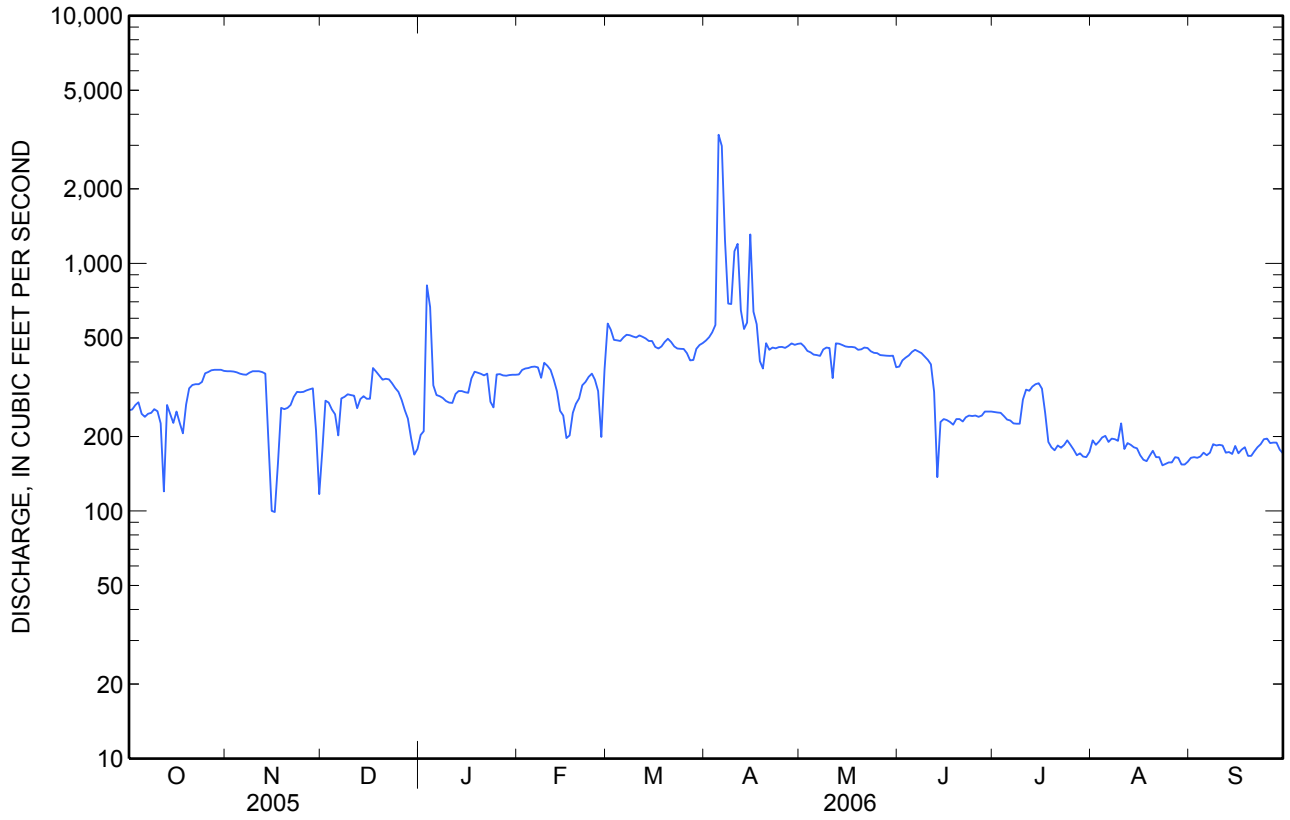
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 2006, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	128	148	214	366	440	404	267	192	156	128	107	101
Max	910	322	709	3,543	2,733	2,556	1,101	915	736	446	402	372
(WY)	(2005)	(1997)	(1967)	(1993)	(1998)	(1980)	(1980)	(1998)	(1983)	(1998)	(2005)	(1997)
Min	22.4	33.5	39.5	49.2	49.8	54.3	43.3	35.2	29.0	17.7	14.8	16.2
(WY)	(1962)	(1963)	(1963)	(1963)	(1961)	(1961)	(1961)	(1961)	(1961)	(1960)	(1960)	(1960)

11074000 Santa Ana River below Prado Dam, CA—Continued

SUMMARY STATISTICS

	Calendar Year 2005		Water Year 2006		Water Years 1941 - 2006	
Annual total	293,681		124,828			
Annual mean	805		342		220	
Highest annual mean					882	2005
Lowest annual mean					36.4	1961
Highest daily mean	11,400	Jan 14	3,310	Apr 5	11,400	Jan 14, 2005
Lowest daily mean	99	Nov 16	99	Nov 16	2.4	Jul 29, 1978
Annual seven-day minimum	189	Nov 14	158	Aug 23	3.0	Sep 24, 1973
Maximum peak flow			5,390	Apr 5	13,200	Jan 15, 2005
Maximum peak stage			7.81	Apr 5	8.73	Jan 15, 2005
Annual runoff (ac-ft)	582,500		247,600		159,400	
10 percent exceeds	1,360		482		385	
50 percent exceeds	383		304		134	
90 percent exceeds	235		172		40	



11074000 Santa Ana River below Prado Dam, CA—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1967 to current year.
CHEMICAL DATA: Water years 1967 to current year.
SPECIFIC CONDUCTANCE: Water years 1968, 1970 to current year.
WATER TEMPERATURE: Water years 1968 (monthly max/min only), 1970 to current year.
BIOLOGICAL DATA: Water years 1975-81.
CHLORIDE: Water year 1971.
SEDIMENT DATA: Water years 1974-94, 1999 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: February 1968 to current year.
WATER TEMPERATURE: October 1969 to current year.
CHLORIDE: October 1970 to September 1971.
SUSPENDED-SEDIMENT DISCHARGE: October 1973 to June 1982.

INSTRUMENTATION.--Water-quality monitor recording specific conductance and water temperature since October 1969.

REMARKS.--Specific conductance records rated fair, except for Nov. 5-11, Mar. 10-27, and July 28 to Sept. 30, which are rated poor, and Apr. 3-20 and June 2 to July 5, which are rated good. Water temperature records rated good, except for May 5 to June 2, June 15 to July 5, and Sept. 2-30, which are rated excellent. Specific conductance and water temperature records are affected by releases from Prado Dam. Interruptions in record at times due to malfunction of recording or sensing equipment. Sediment data and a portion of chemical data collected for the National Water-Quality Assessment (NAWQA) Program.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum recorded, 1,830 microsiemens, Apr. 30, 1971; minimum recorded, 220 microsiemens, Feb. 20, 1978.
WATER TEMPERATURE: Maximum recorded, 36.0°C, Sept. 4, 1972, Sept. 8, 1984; minimum recorded, 2.5°C, Dec. 30, 1969.
SEDIMENT CONCENTRATION: Maximum daily mean, 2,870 mg/L, Mar. 5, 1978; minimum daily mean, 3 mg/L, Apr. 2, 1980, and several days during 1982.
SEDIMENT LOAD: Maximum daily, 18,900 tons, Mar. 5, 1978; minimum daily, 0.58 ton, Sept. 20, 1978.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum recorded, 1,290 microsiemens, Nov. 10; minimum recorded, 299 microsiemens, Oct. 17.
WATER TEMPERATURE: Maximum recorded, 31.0°C, July 22, 25; minimum recorded, 11.0°C, Jan. 23-27.

11074000 Santa Ana River below Prado Dam, CA—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006
Part 1 of 8
[Remark codes: <, less than; E, estimated.]

Date	Time	Instantaneous discharge, cfs (00061)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Alkalinity, wat flt inc tit field, mg/L as CaCO3 (39086)	Bicarbonate, wat flt incrm. titr., field, mg/L (00453)	Carbonate, wat flt incrm. titr., field, mg/L (00452)	Chloride, water, fltrd, mg/L (00940)
Oct													
01...	0905	255	--	--	--	--	950	27.0	20.5	--	--	--	--
11...	1315	E226	750	9.3	104	8.2	1,050	--	20.0	215	253	3	116
21...	0755	328	--	--	--	--	570	16.0	17.0	--	--	--	--
Nov													
01...	1135	371	--	--	--	--	980	27.5	18.0	--	--	--	--
14...	1450	99	--	--	--	--	1,210	24.5	17.5	--	--	--	--
Dec													
05...	1205	264	--	--	--	--	1,090	21.5	13.0	--	--	--	--
15...	0920	140	--	--	--	--	1,010	13.5	13.0	--	--	--	--
15...	1430	140	746	10.0	97	8.1	1,020	17.0	13.0	211	255	2	111
Jan													
06...	1030	294	--	--	--	--	530	25.5	13.5	--	--	--	--
19...	1325	361	--	--	--	--	950	17.5	13.0	--	--	--	--
Feb													
01...	1415	354	--	--	--	--	1,140	21.5	14.5	--	--	--	--
07...	1300	387	750	11.6	119	8.3	1,110	--	15.5	206	248	2	131
17...	0900	202	--	--	--	--	1,150	14.0	13.0	--	--	--	--
Mar													
10...	1110	497	--	--	--	--	678	12.0	14.0	--	--	--	--
27...	1255	426	--	--	--	--	730	21.5	15.5	--	--	--	--
Apr													
03...	0915	531	--	--	--	--	780	19.0	15.5	--	--	--	--
18...	0935	534	--	--	--	--	620	22.0	17.0	--	--	--	--
20...	1430	438	747	10.8	114	7.8	687	28.0	17.0	142	173	--	71.5
May													
05...	0945	430	--	--	--	--	703	17.5	18.5	--	--	--	--
26...	1155	429	--	--	--	--	799	21.5	21.5	--	--	--	--
Jun													
02...	0955	406	--	--	--	--	854	28.5	22.0	--	--	--	--
14...	1105	223	--	--	--	--	975	26.0	23.0	--	--	--	--
21...	1500	230	748	8.6	104	8.3	979	31.5	23.5	212	250	4	110
Jul													
05...	0935	240	--	--	--	--	980	28.5	25.5	--	--	--	--
18...	1045	199	--	--	--	--	1,090	30.5	25.0	--	--	--	--
Aug													
07...	1250	174	--	--	--	--	1,000	32.0	24.5	--	--	--	--
09...	1430	182	748	8.6	109	8.1	1,020	35.5	26.5	213	255	2	110
16...	0955	169	--	--	--	--	1,010	31.5	21.5	--	--	--	--
Sep													
01...	1010	163	--	--	--	--	1,000	32.0	22.0	--	--	--	--
22...	1010	175	--	--	--	--	990	24.0	20.0	--	--	--	--

11074000 Santa Ana River below Prado Dam, CA—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006
Part 2 of 8
[Remark codes: <, less than; E, estimated.]

Date	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 180degC wat flt mg/L (70300)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Total nitro-gen, wat unf by anal ysis, mg/L (62855)	Ortho-phos-phate, water, fltrd, mg/L as P (00671)	Phos-phorus, water, unfltrd mg/L (00665)	1-Naph-thol, water, fltrd 0.7u GF ug/L (49295)	2,6-Di-ethyl-aniline water fltrd 0.7u GF ug/L (82660)	2Chloro -2',6'- diethyl acet-anilide wat flt ug/L (61618)	CIAT, water, fltrd, ug/L (04040)	2-Ethyl -6- methyl-aniline water, fltrd, ug/L (61620)
Oct													
01...	--	578	--	--	--	--	--	--	--	--	--	--	--
11...	113	--	.09	5.93	.036	6.96	.779	1.47	<.09	<.006	<.006	<.006	<.004
21...	--	354	--	--	--	--	--	--	--	--	--	--	--
Nov													
01...	--	589	--	--	--	--	--	--	--	--	--	--	--
14...	--	726	--	--	--	--	--	--	--	--	--	--	--
Dec													
05...	--	664	--	--	--	--	--	--	--	--	--	--	--
15...	--	622	--	--	--	--	--	--	--	--	--	--	--
15...	102	--	.04	6.34	.040	7.01	.837	.92	<.09	<.006	<.005	<.006	<.004
Jan													
06...	--	394	--	--	--	--	--	--	--	--	--	--	--
19...	--	587	--	--	--	--	--	--	--	--	--	--	--
Feb													
01...	--	747	--	--	--	--	--	--	--	--	--	--	--
07...	127	--	<.04	6.69	.041	7.64	.582	.79	<.09	<.006	<.005	<.008	<.004
17...	--	719	--	--	--	--	--	--	--	--	--	--	--
Mar													
10...	--	434	--	--	--	--	--	--	--	--	--	--	--
27...	--	446	--	--	--	--	--	--	--	--	--	--	--
Apr													
03...	--	481	--	--	--	--	--	--	--	--	--	--	--
18...	--	384	--	--	--	--	--	--	--	--	--	--	--
20...	74.7	--	.10	2.62	.068	3.37	.434	.56	<.09	<.006	<.006	<.014	<.010
May													
05...	--	417	--	--	--	--	--	--	--	--	--	--	--
26...	--	488	--	--	--	--	--	--	--	--	--	--	--
Jun													
02...	--	517	--	--	--	--	--	--	--	--	--	--	--
14...	--	594	--	--	--	--	--	--	--	--	--	--	--
21...	102	--	.207	3.02	.095	4.07	.566	.71	<.09	<.006	<.006	<.014	<.010
Jul													
05...	--	598	--	--	--	--	--	--	--	--	--	--	--
18...	--	659	--	--	--	--	--	--	--	--	--	--	--
Aug													
07...	--	615	--	--	--	--	--	--	--	--	--	--	--
09...	108	--	.211	5.74	.087	7.38	.869	.99	<.09	<.006	<.006	<.014	<.010
16...	--	620	--	--	--	--	--	--	--	--	--	--	--
Sep													
01...	--	628	--	--	--	--	--	--	--	--	--	--	--
22...	--	602	--	--	--	--	--	--	--	--	--	--	--

11074000 Santa Ana River below Prado Dam, CA—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006
Part 3 of 8
[Remark codes: <, less than; E, estimated.]

Date	3,4-Dichloroaniline water fltrd, ug/L (61625)	3,5-Dichloroaniline water, fltrd, ug/L (61627)	4Chloro 2methyl phenol, water, fltrd, ug/L (61633)	Acetochlor, water, fltrd, ug/L (49260)	Alachlor, water, fltrd, ug/L (46342)	alpha-Endosulfan, water, fltrd, ug/L (34362)	Atrazine, water, fltrd, ug/L (39632)	Azinphosmethyl oxon, water, fltrd, ug/L (61635)	Azinphosmethyl, water, fltrd 0.7u GF ug/L (82686)	Benfluralin, water, fltrd 0.7u GF ug/L (82673)	Carbaryl, water, fltrd 0.7u GF ug/L (82680)	Carbofuran, water, fltrd 0.7u GF ug/L (82674)	Chlorpyrifos oxon, water, fltrd, ug/L (61636)
Oct													
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	E.011	<.004	<.006	<.006	<.010	<.005	<.009	<.07	<.050	<.010	<.041	<.020	<.06
21...	--	--	--	--	--	--	--	--	--	--	--	--	--
Nov													
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
Dec													
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--	--
15...	E.017	<.004	<.006	<.006	<.005	<.005	.008	<.07	<.050	<.010	<.041	<.020	<.06
Jan													
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--	--	--
Feb													
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
07...	E.013	<.004	<.006	<.006	<.005	<.005	<.007	<.07	<.050	<.010	<.041	<.020	<.06
17...	--	--	--	--	--	--	--	--	--	--	--	--	--
Mar													
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Apr													
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20...	E.026	<.012	<.005	<.006	<.006	<.011	<.007	<.04	<.050	<.010	<.041	<.020	<.06
May													
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
Jun													
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
21...	E.017	<.012	<.005	<.006	<.005	<.011	<.007	<.04	<.050	<.010	<.041	<.020	<.06
Jul													
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
Aug													
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
09...	E.021	<.012	<.005	<.006	<.005	<.011	.009	<.04	<.050	<.010	<.041	<.020	<.06
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
Sep													
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
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11074000 Santa Ana River below Prado Dam, CA—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006
Part 4 of 8
[Remark codes: <, less than; E, estimated.]

Date	Chlorpyrifos water, fltrd, ug/L (38933)	cis-Permethrin water fltrd 0.7u GF ug/L (82687)	cis-Propiconazole, water, fltrd, ug/L (79846)	Cyanazine, water, fltrd, ug/L (04041)	Cyfluthrin, water, fltrd, ug/L (61585)	lambda-Cyhalothrin, water, fltrd, ug/L (61595)	Cypermethrin water, fltrd, ug/L (61586)	DCPA, water fltrd 0.7u GF ug/L (82682)	Desulfinyl fipronil, water, fltrd, ug/L (62170)	Diazinon, water, fltrd, ug/L (39572)	Dicrotophos, water fltrd, ug/L (38454)	Dieldrin, water, fltrd, ug/L (39381)	Dimethoate, water, fltrd 0.7u GF ug/L (82662)
Oct													
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	<.005	<.006	<.008	<.018	<.027	<.009	<.009	<.003	<.012	<.005	<.08	<.009	<.006
21...	--	--	--	--	--	--	--	--	--	--	--	--	--
Nov													
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
Dec													
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--	--
15...	<.005	<.006	<.008	<.018	<.027	<.009	<.009	<.003	<.012	<.005	<.08	<.009	<.006
Jan													
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--	--	--
Feb													
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
07...	<.005	<.006	<.008	<.018	<.027	<.009	<.009	E.004	<.012	<.005	<.08	<.009	<.006
17...	--	--	--	--	--	--	--	--	--	--	--	--	--
Mar													
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Apr													
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
20...	<.005	<.006	<.013	<.018	<.053	<.014	<.046	.044	<.012	<.006	<.08	<.009	<.006
May													
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
Jun													
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
21...	<.005	<.006	<.013	<.018	<.053	<.014	<.046	E.003	<.012	<.005	<.08	<.009	<.006
Jul													
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
Aug													
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
09...	<.005	<.006	<.013	<.018	<.053	<.014	<.046	<.003	<.012	<.005	<.08	<.009	<.006
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
Sep													
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
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11074000 Santa Ana River below Prado Dam, CA—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006
Part 5 of 8
[Remark codes: <, less than; E, estimated.]

Date	Disulfoton sulfone water, fltrd, ug/L (61640)	Disulfoton, water, fltrd 0.7u GF ug/L (82677)	Endosulfan sulfate water, fltrd, ug/L (61590)	EPTC, water, fltrd 0.7u GF ug/L (82668)	Ethion monoxon water, fltrd, ug/L (61644)	Ethion, water, fltrd, ug/L (82346)	Ethoprop, water, fltrd 0.7u GF ug/L (82672)	Fenamiphos sulfone water, fltrd, ug/L (61645)	Fenamiphos sulfoxide, water, fltrd, ug/L (61646)	Fenamiphos, water, fltrd, ug/L (61591)	Desulfinylfipronil amide, wat flt ug/L (62169)	Fipronil sulfide water, fltrd, ug/L (62167)	Fipronil sulfone water, fltrd, ug/L (62168)
Oct													
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	<.01	<.02	<.014	<.004	<.002	<.004	<.005	<.049	<.04	<.03	<.029	<.013	<.024
21...	--	--	--	--	--	--	--	--	--	--	--	--	--
Nov													
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
Dec													
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--	--
15...	<.01	<.02	<.014	<.004	<.002	<.004	<.005	<.049	<.04	<.03	<.029	<.013	<.024
Jan													
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--	--	--
Feb													
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
07...	<.01	<.02	<.014	<.004	<.002	<.004	<.005	<.049	<.04	<.03	<.029	<.013	<.024
17...	--	--	--	--	--	--	--	--	--	--	--	--	--
Mar													
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
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Apr													
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
20...	<.01	<.02	<.022	<.004	<.02	<.016	<.012	<.053	<.04	<.03	<.029	<.013	<.024
May													
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
Jun													
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
21...	<.01	<.02	<.022	<.004	<.02	<.016	<.012	<.053	<.04	<.03	<.029	<.013	<.024
Jul													
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
Aug													
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
09...	<.01	<.02	<.022	<.004	<.02	<.016	<.012	<.053	<.04	<.03	<.029	<.013	<.024
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
Sep													
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11074000 Santa Ana River below Prado Dam, CA—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006
Part 6 of 8
[Remark codes: <, less than; E, estimated.]

Date	Fipronil, water, fltrd, ug/L (62166)	Fonofos water, fltrd, ug/L (04095)	Hexazinone, water, fltrd, ug/L (04025)	Iprodione, water, fltrd, ug/L (61593)	Isofenphos, water, fltrd, ug/L (61594)	Malaoxon, water, fltrd, ug/L (61652)	Malathion, water, fltrd, ug/L (39532)	Metalaxyl, water, fltrd, ug/L (61596)	Methialthion water, fltrd, ug/L (61598)	Methyl paraoxon, water, fltrd, ug/L (61664)	Methyl parathion, water, fltrd 0.7u GF ug/L (82667)	Metolachlor, water, fltrd, ug/L (39415)	Metribuzin, water, fltrd, ug/L (82630)
Oct													
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	<.016	<.003	<.013	<.538	<.003	<.030	<.027	<.029	<.006	<.03	<.015	<.006	<.006
21...	--	--	--	--	--	--	--	--	--	--	--	--	--
Nov													
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
Dec													
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--	--
15...	<.016	<.003	<.013	<.538	<.003	<.030	<.027	<.030	<.006	<.03	<.015	<.006	<.006
Jan													
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--	--	--
Feb													
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
07...	<.016	<.003	<.013	<.538	<.003	<.030	<.027	<.005	<.006	<.03	<.015	.009	<.006
17...	--	--	--	--	--	--	--	--	--	--	--	--	--
Mar													
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--	--	--
Apr													
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
20...	<.016	<.005	<.026	<.026	<.011	<.039	<.027	<.007	<.009	<.02	<.015	E.007	<.028
May													
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
Jun													
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
21...	<.016	<.005	<.026	<.026	<.011	<.039	<.027	<.007	<.009	<.02	<.015	<.006	<.028
Jul													
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
Aug													
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
09...	<.016	<.005	<.026	<.026	<.011	<.039	<.027	<.007	<.009	<.02	<.015	<.006	<.028
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
Sep													
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
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11074000 Santa Ana River below Prado Dam, CA—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006
Part 7 of 8
[Remark codes: <, less than; E, estimated.]

Date	Molinate, water, fltrd 0.7u GF ug/L (82671)	Myclobutanil water, fltrd, ug/L (61599)	Oxyfluorfen, water, fltrd, ug/L (61600)	Pendimethalin, water, fltrd 0.7u GF ug/L (82683)	Phorate oxon, water, fltrd, ug/L (61666)	Phorate water fltrd 0.7u GF ug/L (82664)	Phosmet water, fltrd, ug/L (61601)	Prometon, water, fltrd, ug/L (04037)	Prometryn, water, fltrd, ug/L (04036)	Propyzamide, water, fltrd 0.7u GF ug/L (82676)	Propanil, water, fltrd 0.7u GF ug/L (82679)	Propargite, water, fltrd 0.7u GF ug/L (82685)	Simazine, water, fltrd, ug/L (04035)
Oct													
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	<.003	<.008	<.007	<.022	<.10	<.011	--	.01	<.005	<.007	<.011	<.02	.038
21...	--	--	--	--	--	--	--	--	--	--	--	--	--
Nov													
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
Dec													
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--	--
15...	<.003	<.008	<.007	<.022	<.10	<.011	<.008	.01	<.005	<.004	<.011	<.02	.217
Jan													
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--	--	--
Feb													
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
07...	<.003	<.008	<.007	<.022	<.10	<.011	--	.01	<.005	<.008	<.011	<.02	.127
17...	--	--	--	--	--	--	--	--	--	--	--	--	--
Mar													
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--	--	--
Apr													
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
20...	<.003	<.033	<.017	<.022	<.03	<.055	--	.02	<.006	E.006	<.011	<.02	.730
May													
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
Jun													
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
21...	<.003	<.033	<.017	<.022	<.03	<.055	--	.01	<.006	<.004	<.011	<.02	.077
Jul													
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
Aug													
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
09...	<.003	<.033	<.017	<.022	<.03	<.055	--	.01	<.006	<.004	<.011	<.02	.032
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
Sep													
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--	--	--

11074000 Santa Ana River below Prado Dam, CA—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006
Part 8 of 8
[Remark codes: <, less than; E, estimated.]

Date	Tebu-thiuron water fltrd 0.7u GF ug/L (82670)	Teflu-thrin, water, fltrd, ug/L (61606)	Ter-bufos oxon sulfone water, fltrd, ug/L (61674)	Terbu-fos, water, fltrd 0.7u GF ug/L (82675)	Ter-buthyl-azine, water, fltrd, ug/L (04022)	Thio-bencarb water fltrd 0.7u GF ug/L (82681)	trans-Propi-cona-zole, water, fltrd, ug/L (79847)	Tribu-phos, water, fltrd, ug/L (61610)	Tri-flur-alin, water, fltrd 0.7u GF ug/L (82661)	Di-chlor-vos, water fltrd, ug/L (38775)
Oct										
01...	--	--	--	--	--	--	--	--	--	--
11...	<.02	<.008	<.07	<.02	<.01	<.010	<.01	<.214	<.009	<.01
21...	--	--	--	--	--	--	--	--	--	--
Nov										
01...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
Dec										
05...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	<.02	<.008	<.07	<.02	<.01	<.010	<.01	<.004	<.009	<.01
Jan										
06...	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--
Feb										
01...	--	--	--	--	--	--	--	--	--	--
07...	<.02	<.008	<.07	<.02	<.01	<.010	<.01	--	<.009	<.01
17...	--	--	--	--	--	--	--	--	--	--
Mar										
10...	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--
Apr										
03...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--
20...	<.04	<.006	<.04	<.02	<.01	<.010	<.03	<.035	<.009	<.01
May										
05...	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--
Jun										
02...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
21...	<.02	<.007	<.04	<.02	<.01	<.010	<.03	<.035	<.009	<.01
Jul										
05...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--
Aug										
07...	--	--	--	--	--	--	--	--	--	--
09...	<.02	<.003	<.04	<.02	<.01	<.010	<.03	<.170	<.009	<.01
16...	--	--	--	--	--	--	--	--	--	--
Sep										
01...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--

11074000 Santa Ana River below Prado Dam, CA—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

Day	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min
	October		November		December		January		February		March	
1	943	876	1,020	938	---	---	620	464	1,110	982	579	518
2	928	864	1,060	962	---	---	681	583	1,100	977	577	536
3	912	873	1,080	986	---	---	681	511	1,100	989	576	555
4	922	872	1,060	1,000	---	---	615	455	1,070	986	609	576
5	994	922	1,130	1,010	---	---	593	524	1,090	996	633	609
6	975	897	1,160	1,070	1,050	1,010	666	510	1,090	1,030	638	585
7	934	883	1,180	1,090	1,050	992	753	568	1,080	1,040	627	584
8	---	---	1,230	1,120	1,050	984	756	621	1,060	1,020	645	627
9	---	---	1,230	1,150	1,080	1,010	817	626	1,080	1,020	668	643
10	---	---	1,290	1,190	1,050	983	858	689	1,080	1,040	683	665
11	---	---	1,260	1,220	1,030	979	929	785	1,090	1,080	705	666
12	---	---	---	---	1,030	971	935	818	1,100	1,080	706	699
13	---	---	---	---	1,010	973	984	847	1,120	1,080	707	692
14	1,030	965	---	---	1,090	979	954	867	1,130	1,110	718	701
15	1,020	990	---	---	1,060	981	985	857	1,120	1,090	724	705
16	1,010	505	---	---	1,060	1,010	935	859	1,140	1,090	714	706
17	1,000	299	---	---	1,060	1,010	960	910	1,150	845	724	714
18	772	675	---	---	1,070	921	1,000	944	1,090	702	762	720
19	761	618	---	---	935	902	986	949	916	695	782	734
20	701	598	---	---	943	898	1,040	914	740	679	772	724
21	654	557	---	---	946	873	1,040	952	778	692	770	743
22	668	554	---	---	944	870	1,010	945	845	754	771	731
23	772	658	---	---	904	865	965	945	887	845	731	709
24	761	657	---	---	915	884	985	949	907	884	730	713
25	805	705	---	---	907	879	986	944	922	901	---	---
26	857	745	---	---	935	879	982	954	931	916	---	---
27	896	821	---	---	909	882	992	969	943	916	---	---
28	914	842	---	---	900	865	1,040	977	916	526	752	484
29	940	830	---	---	884	842	1,070	1,010	---	---	762	490
30	983	862	---	---	968	880	1,100	1,020	---	---	578	470
31	1,010	906	---	---	988	571	1,100	1,030	---	---	661	481
Month	---	---	---	---	---	---	1,100	455	1,150	526	---	---

11074000 Santa Ana River below Prado Dam, CA—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

Day	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min
	April		May		June		July		August		September	
1	731	605	820	745	858	831	977	923	981	952	1,010	979
2	777	613	796	750	863	815	971	925	986	962	1,020	985
3	789	718	758	701	850	823	966	921	984	972	996	974
4	769	642	715	682	854	827	962	932	993	976	1,020	982
5	751	406	742	688	928	836	944	920	995	972	992	983
6	486	334	771	722	919	874	945	903	994	969	1,020	986
7	430	336	777	748	944	883	979	914	1,000	958	1,010	996
8	466	352	767	742	942	911	999	946	1,020	970	1,010	987
9	490	419	749	737	952	927	1,020	940	985	950	996	976
10	518	439	764	723	952	942	1,000	966	1,020	950	981	960
11	549	498	770	723	963	924	991	949	1,020	991	---	---
12	633	519	743	724	1,010	936	989	941	1,010	981	---	---
13	614	531	741	723	1,010	963	988	946	1,020	1,010	---	---
14	604	511	741	723	980	940	989	941	1,020	1,000	---	---
15	558	503	747	725	1,000	931	1,060	962	1,020	1,000	---	---
16	655	514	802	738	999	949	1,160	1,040	1,030	992	---	---
17	601	548	804	766	973	934	1,180	1,120	1,020	956	1,020	899
18	698	566	978	787	945	910	1,120	971	971	953	987	932
19	809	655	951	788	946	901	981	954	984	958	1,050	941
20	701	644	795	779	945	901	967	938	991	975	1,090	934
21	696	627	831	780	934	892	975	930	995	976	---	---
22	674	623	838	789	944	897	936	907	986	972	---	---
23	722	639	797	774	933	899	953	906	1,010	928	---	---
24	791	699	774	742	939	903	921	905	1,020	996	---	---
25	786	729	757	742	931	904	958	921	1,030	1,010	---	---
26	791	723	795	756	936	901	988	950	1,030	1,000	---	---
27	779	740	795	783	943	907	976	960	1,010	984	1,020	925
28	789	740	854	780	941	921	989	925	1,010	979	995	924
29	787	757	895	854	954	915	997	963	1,010	997	1,090	921
30	785	739	914	863	967	904	997	965	1,010	998	1,160	982
31	---	---	866	836	---	---	977	953	1,010	993	---	---
Month	809	334	978	682	1,010	815	1,180	903	1,030	928	---	---

11074000 Santa Ana River below Prado Dam, CA—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

Day	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min
	October		November		December		January		February		March	
1	25.0	20.5	18.0	18.0	---	---	14.5	14.0	14.5	14.0	15.5	14.5
2	24.0	20.0	18.0	18.0	---	---	14.5	14.0	15.0	14.0	15.0	14.0
3	23.5	19.5	18.0	18.0	---	---	14.5	14.0	15.5	14.5	15.0	14.0
4	23.5	18.0	18.0	17.5	---	---	14.0	13.5	15.5	14.5	15.0	14.0
5	22.5	17.0	18.0	17.5	---	---	14.0	13.5	16.5	15.5	14.5	13.5
6	23.5	17.0	18.0	17.5	14.0	12.0	14.5	13.5	16.0	15.0	15.0	13.5
7	22.5	17.5	17.5	17.5	12.5	12.0	14.0	13.5	16.0	15.0	14.5	14.0
8	---	---	17.5	17.5	12.5	12.0	14.0	13.5	16.0	14.5	15.0	14.0
9	---	---	17.5	17.5	13.0	12.0	14.0	13.5	15.5	14.0	15.0	14.0
10	---	---	17.5	17.5	12.5	12.0	14.0	13.0	15.5	14.5	14.5	14.0
11	---	---	17.5	17.0	13.0	12.0	14.0	13.0	17.5	15.0	14.5	13.5
12	---	---	17.0	16.5	13.0	12.5	13.5	13.0	18.5	14.5	14.5	13.0
13	---	---	17.0	16.5	13.5	12.5	14.0	13.0	19.0	14.0	14.0	12.5
14	23.5	18.0	---	---	13.0	12.5	13.5	13.0	19.0	13.0	14.0	12.5
15	22.0	17.5	---	---	13.0	12.5	13.5	13.0	19.0	15.0	14.5	13.0
16	20.5	17.0	---	---	13.0	12.5	13.5	12.5	17.0	12.0	14.5	13.0
17	19.0	17.0	---	---	13.0	12.5	13.0	12.5	16.0	13.0	14.5	13.5
18	18.0	17.0	---	---	13.5	13.0	13.0	12.5	15.5	12.5	15.0	13.5
19	17.5	17.0	---	---	13.5	13.0	13.0	12.5	14.0	13.0	15.0	13.5
20	17.0	17.0	---	---	14.0	13.0	13.0	12.0	13.5	12.0	14.5	13.5
21	17.5	17.0	---	---	14.5	13.5	13.0	12.0	13.5	12.5	15.0	13.5
22	17.5	17.5	---	---	15.5	14.5	12.5	12.0	14.5	12.5	15.0	13.5
23	18.0	17.5	---	---	16.0	15.5	12.0	11.0	15.0	13.5	15.0	14.0
24	18.0	17.5	---	---	17.0	16.0	12.0	11.0	16.5	14.0	15.0	14.0
25	18.0	18.0	---	---	17.0	16.0	12.0	11.0	18.5	14.5	15.0	14.0
26	18.5	18.0	---	---	17.5	16.0	12.0	11.0	19.0	16.0	15.0	14.5
27	18.5	18.0	---	---	17.5	15.5	12.0	11.0	17.5	15.5	15.5	14.5
28	18.5	18.0	---	---	17.0	14.5	12.5	11.5	15.5	13.5	15.5	15.0
29	18.0	18.0	---	---	17.5	15.0	13.0	12.0	---	---	16.0	14.5
30	18.5	18.0	---	---	17.0	14.5	13.5	12.5	---	---	15.0	14.5
31	18.5	18.0	---	---	16.0	14.5	14.0	13.0	---	---	15.0	15.0
Month	---	---	---	---	---	---	14.5	11.0	19.0	12.0	16.0	12.5

11074000 Santa Ana River below Prado Dam, CA—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

Day	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min
	April		May		June		July		August		September	
1	16.0	15.0	18.5	17.5	22.0	21.0	25.0	24.0	28.0	23.0	27.0	21.5
2	16.0	15.5	18.5	18.0	22.0	21.0	25.0	24.5	28.0	23.0	27.0	22.0
3	16.0	15.5	18.5	18.0	22.5	21.5	25.5	24.5	26.0	23.0	28.0	22.0
4	16.0	15.5	18.5	18.0	23.0	21.5	25.5	25.0	27.5	23.0	27.5	22.5
5	16.0	15.0	18.5	18.0	23.0	21.5	26.0	25.0	27.0	21.5	28.0	22.5
6	15.0	13.0	19.0	18.0	23.0	22.0	26.0	25.0	27.0	22.0	27.5	23.5
7	14.0	13.0	19.0	18.5	23.5	22.5	25.5	25.0	26.5	22.5	26.5	22.5
8	14.0	13.0	19.0	18.5	23.5	22.5	25.5	25.0	27.0	21.0	25.5	21.5
9	14.5	14.0	19.0	18.5	23.5	22.5	26.0	25.0	27.5	22.0	25.5	21.5
10	15.5	14.5	19.5	19.0	23.5	22.5	26.0	25.0	27.0	22.5	25.0	20.0
11	16.0	15.0	20.0	19.0	23.5	22.5	26.0	25.0	27.5	22.5	25.5	20.5
12	16.0	15.0	20.0	19.5	23.5	22.0	26.0	25.0	27.0	22.0	25.5	21.0
13	16.0	15.5	20.0	19.5	24.5	22.0	25.5	25.0	27.0	21.5	25.5	21.0
14	16.0	15.5	20.0	19.5	23.0	22.0	26.5	25.0	26.5	21.5	23.5	21.5
15	16.5	16.0	20.5	20.0	23.0	22.0	27.0	25.5	26.0	21.0	24.0	20.5
16	16.5	16.0	21.0	20.0	23.5	22.0	28.0	27.0	25.5	20.5	24.0	19.0
17	17.0	16.5	21.0	20.5	23.0	22.0	28.0	25.0	26.0	20.5	23.5	18.0
18	17.5	16.0	21.5	20.5	23.5	22.5	28.5	24.0	26.0	21.0	24.0	18.5
19	17.0	16.0	21.5	21.0	23.5	22.5	28.5	24.0	26.0	21.5	23.5	18.0
20	17.0	17.0	22.0	21.0	23.5	22.5	29.0	23.5	26.0	21.0	23.5	18.5
21	17.5	17.0	21.5	21.5	24.0	22.5	30.0	23.5	26.5	21.0	23.0	19.0
22	17.5	17.0	22.0	21.0	24.0	22.5	31.0	25.0	27.5	22.0	22.5	19.5
23	17.5	17.0	21.0	20.0	24.0	23.0	29.5	26.0	27.5	22.5	23.0	18.5
24	18.0	17.5	21.0	20.0	24.5	23.0	30.5	25.0	27.0	22.0	24.0	18.5
25	18.0	17.5	21.5	20.5	24.0	23.5	31.0	26.0	26.0	21.0	24.0	19.5
26	18.0	17.5	21.5	20.5	24.5	23.5	29.5	25.0	26.0	21.0	24.0	20.0
27	18.0	17.5	22.0	20.5	24.0	23.5	29.5	25.5	26.5	20.5	24.0	19.5
28	18.0	17.5	22.0	20.5	24.5	23.5	30.0	24.5	26.0	20.5	24.0	19.0
29	18.0	17.5	22.0	20.5	25.0	23.5	29.0	25.5	26.5	21.0	23.5	18.5
30	18.0	17.5	22.0	20.5	25.0	24.0	28.5	24.5	27.0	22.0	23.0	19.0
31	---	---	22.0	20.5	---	---	26.5	24.0	26.5	21.5	---	---
Month	18.0	13.0	22.0	17.5	25.0	21.0	31.0	23.5	28.0	20.5	28.0	18.0

11074000 Santa Ana River below Prado Dam, CA—Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

[Remark codes: E, estimated.]

Date	Time	Instantaneous discharge, cfs (00061)	Temperature, water, deg C (00010)	Suspnd. sediment, sieve diametr percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
Oct						
11...SS	1315	E226	20.0	91	377	E230
Dec						
15...SS	1430	140	13.0	98	22	8.3
Feb						
07...SS	1300	387	15.5	96	42	44
Apr						
20...SS	1430	438	17.0	92	7	8.3
Jun						
21...SS	1500	230	23.5	94	63	39
Aug						
09...SS	1430	182	26.5	79	1,060	520

SS Suspended-sediment data determined from a sample collected and processed according to National Water-Quality Assessment (NAWQA) Program protocol.

11074000 Santa Ana River below Prado Dam, CA—Continued

CROSS SECTION ANALYSES
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

Date	Time	Dis-solved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conduc-tance, wat unf uS/cm 25 degC (00095)	Temper-ature, water, deg C (00010)	Loca-tion in X-sect. looking dwnstrm ft from l bank (00009)
Mar						
10...	1036	--	--	678	14.0	31.0
10...	1037	--	--	676	14.0	41.0
10...	1038	--	--	674	14.0	52.0
10...	1039	--	--	673	14.0	61.0
10...	1040	--	--	671	14.0	71.0
10...	1041	--	--	669	14.0	81.0
10...	1042	--	--	668	14.0	91.0
10...	1043	--	--	668	14.0	101
10...	1044	--	--	668	14.0	111
Jun						
21...	1512	9.3	8.3	977	23.5	67.0
21...	1513	9.0	8.3	976	23.5	67.0
21...	1514	8.8	8.3	976	23.5	52.0
21...	1515	8.7	8.3	975	23.5	52.0
21...	1516	8.6	8.3	976	23.5	37.0
21...	1517	8.6	8.3	976	23.0	37.0
21...	1518	8.6	8.3	982	23.5	22.0
21...	1519	8.6	8.2	986	23.5	22.0
21...	1520	8.9	8.3	994	23.5	7.00
21...	1521	8.8	8.2	992	23.5	7.00
Aug						
16...	1057	--	--	990	22.0	60.0
16...	1059	--	--	1,000	22.0	48.0
16...	1101	--	--	1,010	22.0	40.0
16...	1103	--	--	1,010	22.0	34.0
16...	1105	--	--	1,020	22.0	26.0
16...	1107	--	--	1,020	22.0	18.0
16...	1109	--	--	1,020	22.0	10.0

Note: Instantaneous discharge at the time of cross-sectional measurements: Mar. 10, 502 ft^3/s; June 21, 232 ft^3/s; Aug. 16, 166 ft^3/s.

Water-Data Report 2006

11066460 Santa Ana River at Metropolitan Water District Crossing, near Arlington, CA

Santa Ana River Basin

LOCATION.--Lat 33°58′07″, long 117°26′51″ referenced to North American Datum of 1927, in NE ¼ SW ¼ sec.30, T.2 S., R.5 W., Riverside County, Hydrologic Unit 18070203, near center of Metropolitan Water District pipeline crossing, 0.8 mi downstream from Union Pacific Railroad Bridge, 1.1 mi upstream from bridge on Van Buren Boulevard, and 3.3 mi north of Arlington.

DRAINAGE AREA.--852 mi².

SURFACE-WATER RECORDS

PERIOD OF RECORD.--March 1970 to current year.

REVISED RECORDS.--WDR CA-83-1: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 685 ft above NGVD of 1929, from topographic map. Prior to Apr. 15, 1985, water-stage recorder at site 300 ft upstream on left bank at different datum. From Apr. 15 to Sept. 30, 1985, water-stage recorder near right bank (atop pier 9 of Metropolitan Water District pipeline crossing), at same site and datum. From Oct. 1, 1985, to June 16, 1993, water-stage recorder and crest-stage gage on right bank at same site and datum. From June 17, 1993, to Sept. 30, 2003, water-stage recorder and crest-stage gage on left bank at same site and datum.

REMARKS.--Records poor. Flow partly regulated by Big Bear Lake (station 11049000) and, since November 1999, by Seven Oaks Flood-Control Reservoir, capacity, 145,600 acre-ft. Natural streamflow affected by ground-water withdrawals, diversions for irrigation, return flows from irrigated areas, and discharges of treated effluent. The records at this station are equivalent to those collected at "Santa Ana River at Riverside Narrows, near Arlington" minus the flow at "Riverside Water-Quality Control Plant at Riverside Narrows, near Arlington". See schematic diagram of Santa Ana River Basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 47,800 ft³/s, Jan. 11, 2005, gage height, 14.64 ft, from rating curve extended above 21,900 ft³/s on basis of area-velocity studies; maximum gage height, 20.23 ft, site and datum then in use, Mar. 4, 1978; minimum daily, 15 ft³/s, Sept. 7, 8, 1980.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since at least 1927, 100,000 ft³/s, Mar. 2, 1938, on basis of slope-area measurement, at site 1.1 mi downstream. Flood of Jan. 22, 1862, 320,000 ft³/s, on basis of slope-conveyance study, at site 8.2 mi upstream. Stage at that site was 5 ft higher than that of Mar. 2, 1938.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft³/s and (or) maximum (*), from rating curve extended as explained above:

Date	Time	Discharge (ft³/s)	Gage height (ft)
Oct 18	0615	4,160	9.29
Jan 02	1745	4,520	9.43
Feb 28	0900	6,970	10.23
Mar 29	0015	4,090	9.26
Apr 05	2130	*10,800	*10.78
Apr 15	0015	3,220	8.71

11066460 Santa Ana River at Metropolitan Water District Crossing, near Arlington, CA—Continued

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006
DAILY MEAN VALUES
[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	e93	e84	e105	115	106	240	245	208	e83	70	75	66
2	e93	e84	e106	875	115	123	192	219	e80	65	77	64
3	e94	e85	e107	327	110	350	136	225	e80	67	82	66
4	e93	e85	e108	229	122	205	607	251	79	65	91	66
5	e94	e86	e109	194	121	154	e4,700	241	87	66	93	68
6	e95	e86	e108	187	121	121	1,320	209	86	60	96	69
7	e95	e86	e108	161	112	e175	927	219	84	66	100	70
8	e96	e87	e107	140	108	e280	453	214	82	60	103	72
9	e97	e87	e120	137	109	e120	456	203	83	63	96	68
10	e96	e87	e108	123	110	e155	495	213	78	58	95	69
11	e97	e88	e106	113	122	e205	329	216	82	61	93	68
12	e97	e88	e110	110	99	e160	230	187	e80	60	98	67
13	e97	e89	e115	105	100	e120	123	179	e77	57	102	63
14	e96	e89	e116	96	112	e115	370	176	e79	57	98	68
15	e97	e90	e117	93	127	e107	707	176	79	56	94	75
16	e110	e90	127	90	124	e101	336	206	73	54	94	71
17	e360	e90	123	77	121	e195	343	207	74	59	94	71
18	e1,000	e90	120	75	152	e115	e335	204	75	57	93	71
19	e250	e91	118	82	159	e105	301	207	73	59	88	63
20	e150	e89	117	88	131	e140	193	210	74	57	88	68
21	e120	e90	114	80	116	374	130	242	68	52	86	68
22	e110	e88	122	88	114	141	119	344	67	49	79	68
23	e107	e89	118	81	101	87	126	250	67	57	77	68
24	e105	e90	120	81	111	86	115	208	73	56	73	66
25	e103	e93	120	89	112	80	111	186	67	54	78	65
26	e102	e96	113	89	106	83	130	149	67	53	74	66
27	e100	e99	111	87	257	86	141	132	66	56	71	67
28	e96	e102	121	93	2,680	276	154	120	63	59	73	68
29	e91	e103	114	94	---	974	160	102	72	65	71	65
30	e90	e104	110	101	---	423	165	84	73	69	59	65
31	e87	---	229	108	---	301	---	e84	---	76	66	---
Total	4,411	2,705	3,647	4,408	5,978	6,197	14,149	6,071	2,271	1,863	2,657	2,029
Mean	142	90.2	118	142	214	200	472	196	75.7	60.1	85.7	67.6
Max	1,000	104	229	875	2,680	974	4,700	344	87	76	103	75
Min	87	84	105	75	99	80	111	84	63	49	59	63
Ac-ft	8,750	5,370	7,230	8,740	11,860	12,290	28,060	12,040	4,500	3,700	5,270	4,020

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1970 - 2006, BY WATER YEAR (WY)

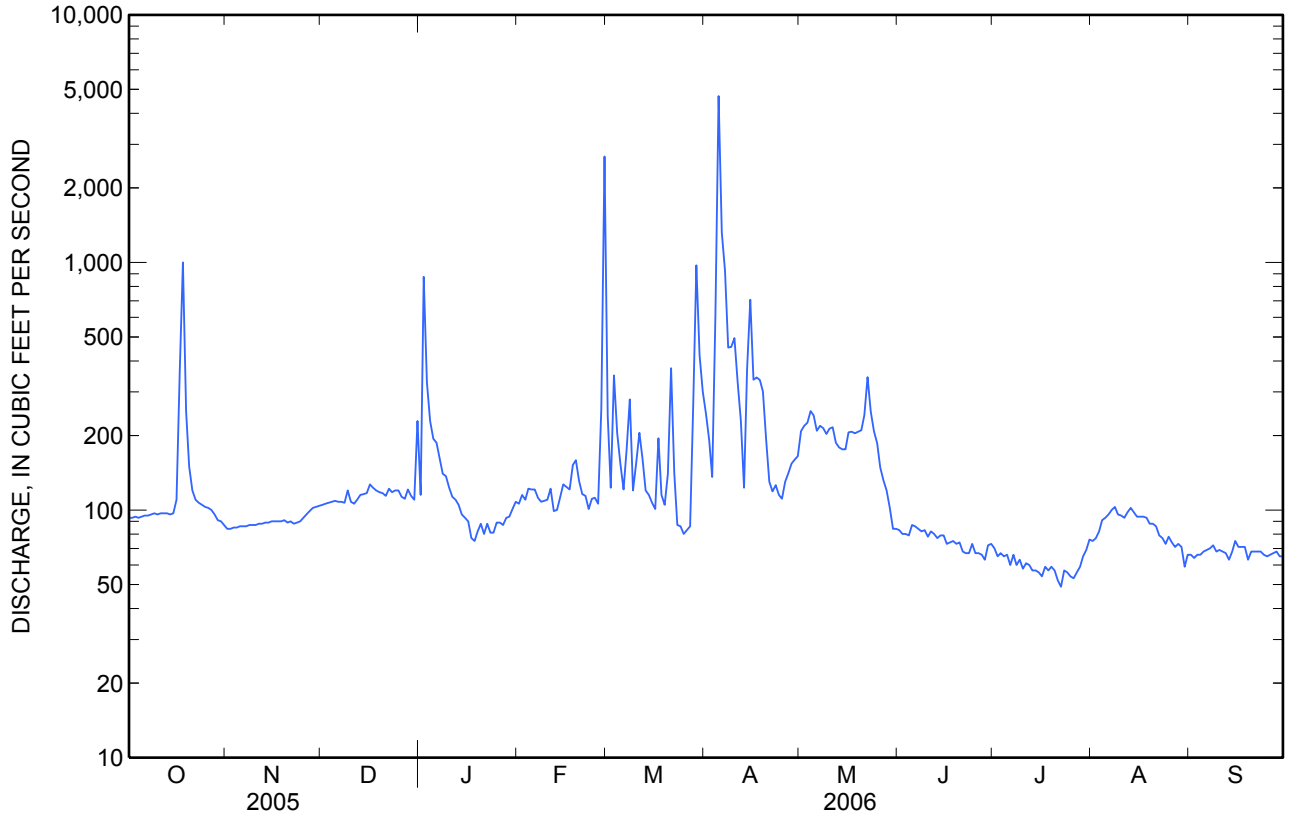
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	76.9	83.2	110	277	294	304	161	123	82.3	58.3	60.1	57.7
Max	498	259	292	2,350	1,411	1,806	604	666	351	145	233	129
(WY)	(2005)	(1984)	(1984)	(2005)	(1980)	(1995)	(1983)	(1983)	(1983)	(1983)	(1983)	(1976)
Min	20.5	21.2	23.3	24.7	23.1	23.7	23.1	22.3	20.2	16.8	17.9	18.0
(WY)	(1974)	(1975)	(1974)	(1972)	(1972)	(1972)	(1971)	(1972)	(1981)	(1981)	(1981)	(1974)

11066460 Santa Ana River at Metropolitan Water District Crossing, near Arlington, CA—Continued

SUMMARY STATISTICS

	Calendar Year 2005		Water Year 2006		Water Years 1970 - 2006	
Annual total	163,796		56,386			
Annual mean	449		154		141	
Highest annual mean					491	2005
Lowest annual mean					29.0	1975
Highest daily mean	22,000	Jan 11	e4,700	Apr 5	e22,000	Jan 11, 2005
Lowest daily mean	80	Sep 25	49	Jul 22	15	Sep 7, 1980
Annual seven-day minimum	82	Sep 22	54	Jul 21	16	Jul 1, 1981
Maximum peak flow			10,800	Apr 5	47,800	Jan 11, 2005
Maximum peak stage			10.78	Apr 5	20.23	Mar 4, 1978
Annual runoff (ac-ft)	324,900		111,800		102,100	
10 percent exceeds	622		229		209	
50 percent exceeds	130		97		73	
90 percent exceeds	88		66		24	

e Estimated.



11066460 Santa Ana River at Metropolitan Water District Crossing, near Arlington, CA—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1970 to current year.
CHEMICAL DATA: Water years 1970 to current year.
SPECIFIC CONDUCTANCE: Water years 1970-78, 1999-2000.
WATER TEMPERATURE: Water years 1999-2000.
SEDIMENT DATA: Water years 1999-2000.

11066460 Santa Ana River at Metropolitan Water District Crossing, near Arlington, CA—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006
[e, estimated]

Date	Time	Instantaneous discharge, cfs (00061)	Specif. conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Residue on evap. at 180degC wat flt mg/L (70300)
Oct					
12...	1315	97	957	24.0	599
26...	1140	102	930	20.0	585
Nov					
01...	1115	84	925	22.0	597
18...	1100	90	922	16.5	577
Dec					
05...	1015	109	896	11.5	580
15...	1305	e117	944	17.5	576
22...	1000	106	923	15.0	580
Jan					
03...	1235	281	538	16.0	333
18...	1220	75	921	17.5	575
Feb					
01...	1000	103	933	14.0	588
22...	1110	121	909	17.0	577
Mar					
06...	1035	117	887	15.5	574
23...	1000	89	898	16.5	586
Apr					
04...	1040	100	904	17.5	572
24...	1050	118	772	19.5	476
May					
05...	1035	237	553	17.0	341
22...	1035	383	449	17.0	291
Jun					
01...	1105	83	920	27.5	569
28...	1030	69	912	28.5	551
Jul					
12...	0945	64	938	24.5	590
26...	1145	58	941	26.5	574
Aug					
08...	1010	100	859	23.0	518
28...	1010	73	905	23.0	567
Sep					
11...	1035	70	953	26.5	586
25...	1025	65	905	20.5	561

Water-Data Report 2006

11059300 Santa Ana River at E Street, near San Bernardino, CA

Santa Ana River Basin

LOCATION.--Lat 34°03′54″, long 117°17′58″ referenced to North American Datum of 1927, San Bernardino County, Hydrologic Unit 18070203, in San Bernardino Grant, on left bank, 0.4 mi downstream from E Street Bridge, 0.4 mi upstream from Warm Creek, 1.2 mi downstream from San Timoteo Creek, 2.8 mi south of San Bernardino, and 26 mi downstream from Big Bear Lake.

DRAINAGE AREA.--541 mi².

SURFACE-WATER RECORDS

PERIOD OF RECORD.--March 1939 to September 1954, October 1966 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 940 ft above NGVD of 1929, from topographic map. Prior to Nov. 10, 1950, water-stage recorder on right bank 0.4 mi upstream at datum 24.50 ft higher. Nov. 11, 1950, to September 1954, water-stage recorder on both banks 0.4 mi upstream at datum 24.50 ft higher. October 1966 to September 1976, water-stage recorder on right bank 0.4 mi upstream at datum 14.50 ft higher. October 1976 to September 1977, gage was removed for channel construction. October 1977 to Jan. 28, 1981, water-stage recorder on right bank, 0.5 mi upstream at elevation 10 ft higher, from topographic map.

REMARKS.--Records poor. Flow partly regulated by Big Bear Lake (station 11049000) and, since November 1999, by Seven Oaks Flood-Control Reservoir, capacity, 145,600 acre-ft. Natural flow of stream affected by ground-water withdrawals and diversion for domestic use and irrigation upstream from station. Effluent from sewage reclamation plant 1.0 mi upstream caused sustained flow past gage from 1967 to Mar. 21, 1996. See schematic diagram of Santa Ana River Basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 35,700 ft³/s, Jan. 11, 2005, gage height, 9.04 ft, current site and datum, from rating curve extended above 5,930 ft³/s on basis of critical-depth computations; maximum gage height, 11.9 ft, Feb. 25, 1969, site and datum then in use; no flow for many days many years prior to 1967 and since Mar. 21, 1996.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft³/s and (or) maximum (*), from rating curve extended as explained above:

Date	Time	Discharge (ft³/s)	Gage height (ft)
Oct 18	0345	2,360	5.40
Jan 02	1430	2,150	5.30
Feb 28	1000	3,150	5.55
Mar 28	2200	1,020	4.62
Apr 04	2345	*4,460	*5.74
Apr 14	1900	1,440	4.92

11059300 Santa Ana River at E Street, near San Bernardino, CA—Continued

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006
DAILY MEAN VALUES
[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	23	e1.9	4.8	35	e4.8	80	136	151	0.00	0.00	24	0.00
2	21	e1.8	5.3	450	e4.3	64	122	170	0.00	0.00	9.9	0.00
3	21	e1.7	6.7	199	e3.9	216	98	163	0.00	0.00	5.0	0.00
4	15	2.7	4.1	36	e3.3	59	433	174	0.00	0.00	4.6	4.3
5	21	2.5	4.6	34	e3.5	56	1,590	143	0.00	0.00	1.7	5.9
6	23	1.8	4.8	e24	e4.4	48	825	132	0.00	0.00	4.0	3.7
7	23	1.4	3.9	e20	e3.9	66	602	132	0.00	0.00	7.0	6.2
8	24	2.4	4.4	e18	e4.0	e150	423	131	0.00	13	5.2	0.00
9	23	2.7	6.4	e17	e3.6	22	402	120	0.00	20	1.2	2.3
10	20	3.1	6.9	e16	5.8	22	313	141	0.00	11	0.00	5.2
11	11	3.8	6.3	e15	5.8	69	185	133	0.00	0.00	1.4	7.6
12	12	4.7	6.2	e14	6.1	57	149	118	0.00	0.00	2.4	8.2
13	15	3.9	6.1	9.9	5.9	33	96	101	0.00	0.00	2.9	9.2
14	5.9	4.7	4.0	7.4	5.0	22	296	93	0.00	0.00	0.35	9.9
15	1.3	3.7	4.7	7.4	e4.3	20	215	119	0.00	0.00	4.1	11
16	1.7	3.5	5.2	6.1	e3.8	18	172	151	0.00	0.00	4.3	9.8
17	243	2.7	4.6	5.7	e3.3	64	171	136	0.00	0.00	1.6	6.2
18	383	2.7	3.5	8.4	23	64	177	124	0.00	0.00	0.65	6.0
19	130	3.8	2.6	6.6	55	49	117	114	0.00	0.00	0.00	6.3
20	91	2.3	4.8	6.4	e4.6	39	85	110	0.00	0.00	0.00	3.4
21	88	1.8	4.7	e5.4	e4.1	172	60	113	0.00	0.00	0.00	3.9
22	66	2.6	4.3	e4.1	e3.9	53	59	140	0.00	0.00	0.00	5.3
23	54	1.9	e2.2	e3.7	e3.7	26	89	107	0.00	0.00	0.00	5.6
24	e25	2.6	e2.0	e3.1	e11	18	58	84	0.00	0.00	0.74	6.6
25	e11	4.2	e2.7	e2.7	18	18	41	70	0.00	0.00	1.4	8.5
26	e5.5	4.6	e3.0	e6.7	19	21	72	9.6	0.00	0.00	0.74	8.4
27	e3.0	4.1	e2.3	e7.6	136	17	93	2.0	0.00	0.00	0.79	5.7
28	e2.4	4.3	e2.5	e5.5	1,050	118	78	0.00	0.00	0.00	0.00	4.4
29	e2.0	5.1	e3.3	e4.9	---	e300	82	0.00	0.00	0.00	0.00	1.8
30	e2.0	4.8	e2.6	e10	---	127	119	0.00	0.00	0.00	0.00	0.54
31	e1.9	---	91	e6.1	---	117	---	0.00	---	7.3	0.00	---
Total	1,368.7	93.8	220.5	995.7	1,404.0	2,205	7,358	3,181.60	0.00	51.30	83.97	155.94
Mean	44.2	3.13	7.11	32.1	50.1	71.1	245	103	0.00	1.65	2.71	5.20
Max	383	5.1	91	450	1,050	300	1,590	174	0.00	20	24	11
Min	1.3	1.4	2.0	2.7	3.3	17	41	0.00	0.00	0.00	0.00	0.00
Ac-ft	2,710	186	437	1,970	2,780	4,370	14,590	6,310	0.00	102	167	309

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 1954, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	.88	3.47	20.9	23.7	20.6	37.4	27.2	11.3	2.39	.93	.87	.63
Max	3.35	21.3	117	109	72.2	183	237	145	31.2	9.87	8.37	6.32
(WY)	(1942)	(1945)	(1946)	(1943)	(1945)	(1943)	(1941)	(1941)	(1941)	(1940)	(1940)	(1939)
Min	.000	.007	.000	1.90	2.41	1.70	1.14	.14	.000	.000	.000	.000
(WY)	(1951)	(1952)	(1951)	(1948)	(1942)	(1951)	(1951)	(1942)	(1950)	(1950)	(1942)	(1948)

11059300 Santa Ana River at E Street, near San Bernardino, CA—Continued

SUMMARY STATISTICS

	Water Years 1939 - 1954	
Annual mean	12.7	
Highest annual mean	56.6	1941
Lowest annual mean	.78	1951
Highest daily mean	2,350	Jan 23, 1943
Lowest daily mean	.00	Jun 19, 1940
Annual seven-day minimum	.00	Sep 10, 1940
Annual runoff (ac-ft)	9,190	
10 percent exceeds	16	
50 percent exceeds	1.0	
90 percent exceeds	.00	

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 1995, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	33.9	43.3	77.4	158	232	253	132	103	63.9	40.8	36.8	34.6
Max	117	191	469	1,327	2,096	1,279	742	707	339	162	160	75.0
(WY)	(1984)	(1984)	(1967)	(1993)	(1980)	(1980)	(1980)	(1983)	(1983)	(1969)	(1983)	(1983)
Min	12.4	13.2	14.8	13.2	11.6	10.6	12.5	9.35	13.0	9.08	9.97	9.93
(WY)	(1968)	(1972)	(1970)	(1972)	(1968)	(1972)	(1972)	(1967)	(1971)	(1967)	(1967)	(1967)

SUMMARY STATISTICS

	Water Years 1967 - 1995	
Annual mean	100	
Highest annual mean	441	1980
Lowest annual mean	17.2	1968
Highest daily mean	14,800	Feb 25, 1969
Lowest daily mean	6.4	Jul 13, 1967
Annual seven-day minimum	8.1	Sep 16, 1967
Maximum peak flow	28,000	Feb 25, 1969
Maximum peak stage	11.90	Feb 25, 1969
Annual runoff (ac-ft)	72,490	
10 percent exceeds	165	
50 percent exceeds	35	
90 percent exceeds	14	

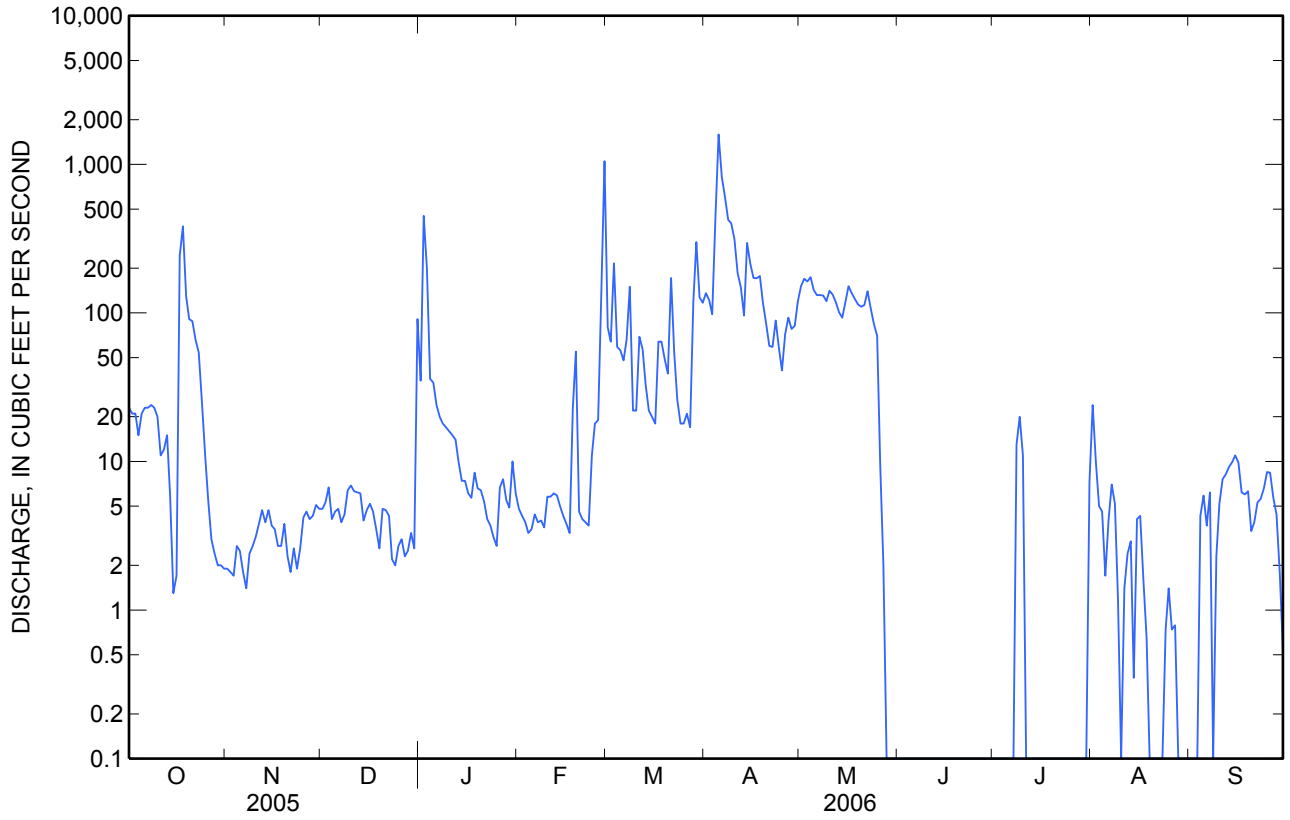
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 2006, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	29.4	18.4	28.4	152	164	74.3	83.3	72.2	21.7	8.45	16.4	12.4
Max	200	56.2	96.9	1,185	729	398	351	430	116	52.9	102	75.8
(WY)	(2005)	(1997)	(2005)	(2005)	(1998)	(2005)	(2005)	(1998)	(1998)	(2005)	(2005)	(1998)
Min	0.00	0.67	1.16	0.00	0.82	0.10	0.00	0.00	0.00	0.00	0.00	0.00
(WY)	(2003)	(2001)	(2001)	(2003)	(2002)	(1997)	(1997)	(1996)	(1996)	(1996)	(1996)	(1996)

11059300 Santa Ana River at E Street, near San Bernardino, CA—Continued

SUMMARY STATISTICS

	Calendar Year 2005		Water Year 2006		Water Years 1996 - 2006	
Annual total	88,823.9		17,118.51			
Annual mean	243		46.9		56.2	
Highest annual mean					265	2005
Lowest annual mean					1.70	2002
Highest daily mean	12,500	Jan 11	1,590	Apr 5	12,500	Jan 11, 2005
Lowest daily mean	1.3	Oct 15	0.00	May 28	0.00	Mar 22, 1996
Annual seven-day minimum	2.0	Oct 28	0.00	May 28	0.00	Mar 22, 1996
Maximum peak flow			4,460	Apr 4	35,700	Jan 11, 2005
Maximum peak stage			5.74	Apr 4	9.04	Jan 11, 2005
Annual runoff (ac-ft)	176,200		33,950		40,740	
10 percent exceeds	472		132		117	
50 percent exceeds	66		5.2		1.8	
90 percent exceeds	3.2		0.00		0.00	



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Water-Data Report 2006

11059300 Santa Ana River at E Street, near San Bernardino, CA

Santa Ana River Basin

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1968-72, 1983-86, 1988 to current year.
CHEMICAL ANALYSES: Water years 1969 (partial-record station), 1970-72.
SPECIFIC CONDUCTANCE: Water years 1968-72.
WATER TEMPERATURE: Water years 1968, 1983.
SEDIMENT DATA: Water years 1983-86, 1988 to current year.

PERIOD OF DAILY RECORD.--October 1982 to September 1983.
WATER TEMPERATURE: November 1982 to September 1983.
SUSPENDED-SEDIMENT DISCHARGE: October 1982 to September 1983.

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

Part 1 of 2

Date	Time	Instan-taneous dis-charge, cfs (00061)	Temper-ature, water, deg C (00010)	Suspnd. sedi-ment, falldia dst wat percent <.002mm (70337)	Suspnd. sedi-ment, falldia dst wat percent <.004mm (70338)	Suspnd. sedi-ment, falldia dst wat percent <.008mm (70339)	Suspnd. sedi-ment, falldia dst wat percent <.016mm (70340)	Suspnd. sedi-ment, falldia dst wat percent <.031mm (70341)	Suspnd. sedi-ment, sieve diametr percent <.063mm (70331)	Suspnd. sedi-ment, sieve diametr percent <.125mm (70332)	Suspnd. sedi-ment, sieve diametr percent <.25mm (70333)	Suspnd. sedi-ment, sieve diametr percent <.5 mm (70334)	Suspnd. sedi-ment, sieve diametr percent <1 mm (70335)
Oct													
05...	1735	24	22.5	--	--	--	--	--	89	--	--	--	--
18...	1050	287	19.5	24	27	34	55	74	82	89	97	100	--
Nov													
03...	0850	1.7	15.5	--	--	--	--	--	98	--	--	--	--
Dec													
07...	1205	3.7	13.0	--	--	--	--	--	78	--	--	--	--
Jan													
02...	1150	184	13.5	--	--	--	--	--	34	49	77	98	100
03...	1050	216	13.5	31	39	47	56	62	67	75	90	99	100
30...	1305	5.3	18.5	--	--	--	--	--	90	93	98	100	--
Feb													
28...	1030	1,740	14.5	7	11	14	25	38	49	66	88	98	99
Mar													
08...	0825	78	9.5	--	--	--	--	--	54	70	88	98	100
11...	1455	81	13.0	--	--	--	--	--	15	31	62	83	95
29...	0820	373	12.0	8	14	20	24	35	42	59	83	98	100
Apr													
05...	1125	1,430	13.0	--	--	--	--	--	37	51	84	97	100
27...	1225	88	14.5	--	--	--	--	--	34	51	87	99	100
Aug													
01...	1210	27	27.5	--	--	--	--	--	65	72	88	99	100

11059300 Santa Ana River at E Street, near San Bernardino, CA—Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

Part 2 of 2

Date	Suspnd. sedi-ment, sieve diametr percent <2 mm (70336)	Sus-pended sedi-ment concen-tration mg/L (80154)	Sus-pended sedi-ment dis-charge, tons/d (80155)
Oct			
05...	--	33	2.1
18...	--	3,600	2,790
Nov			
03...	--	124	.57
Dec			
07...	--	53	.53
Jan			
02...	--	1,130	561
03...	--	2,520	1,470
30...	--	95	1.4
Feb			
28...	100	25,400	119,000
Mar			
08...	--	891	188
11...	100	1,630	356
29...	--	2,210	2,230
Apr			
05...	--	1,880	7,260
27...	--	330	78
Aug			
01...	--	127	9.3

Water-Data Report 2006

11072100 Temescal Creek above Main Street, at Corona, CA

Santa Ana River Basin

LOCATION.--Lat 33°53′21″, long 117°33′43″ referenced to North American Datum of 1927, Riverside County, Hydrologic Unit 18070203, in La Sierra Grant, on right bank, 500 ft upstream from Main Street Bridge in Corona, and 1.5 mi upstream from topographic boundary of Prado Flood-Control Basin.

DRAINAGE AREA.--224 mi², excludes 768 mi² above Lake Elsinore.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1980 to July 1983, February 1984 to current year.

GAGE.--Water-stage recorder and concrete-lined flood-control channel. Elevation of gage is 600 ft above NGVD of 1929, from topographic map. December 1967 to September 1974, water-stage recorder at site 1.2 mi downstream at different datum (published as station 11072200, "Temescal Creek at Corona"). October 1980 to July 1983 at site 500 ft downstream at different datum.

REMARKS.--Records fair above 500 ft³/s and poor below. Flow regulated by several small storage reservoirs. Many diversions upstream from station for irrigation. Water discharged to channel from Arlington Desalter at times since September 1990; records for water years 1981 to 1990 and 1991 to current year are not equivalent. See schematic diagram of Santa Ana River Basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,720 ft³/s, Mar. 1, 1983, gage height, 11.67 ft, site and datum then in use, on basis of slope-conveyance study; minimum daily, 0.27 ft³/s, Sept. 25, 1981.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, 8,850 ft³/s, Feb. 25, 1969, gage height, 8.17 ft, from floodmark, at old site (station 11072200) 1.2 mi downstream on basis of slope-area measurement of peak flow.

11072100 Temescal Creek above Main Street, at Corona, CA—Continued

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006
DAILY MEAN VALUES

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	32	57	33	43	77	142	72	72	12	6.7	6.5	5.0
2	24	59	32	235	78	104	55	76	11	7.6	5.6	6.2
3	23	50	31	99	79	123	70	71	11	6.4	7.1	6.1
4	23	40	28	51	83	85	341	62	11	6.0	6.1	5.7
5	33	40	24	47	83	81	641	52	10	6.5	6.0	6.4
6	39	47	23	51	72	81	184	44	11	8.6	6.2	7.5
7	43	53	24	60	55	91	101	43	12	9.0	6.8	6.5
8	46	57	22	64	44	76	85	39	12	5.9	6.3	5.3
9	49	61	26	65	39	68	83	30	18	6.8	5.2	6.2
10	49	53	22	66	36	64	81	29	24	7.3	5.2	6.9
11	53	46	22	64	40	72	80	20	28	6.7	5.3	8.9
12	58	49	21	57	49	58	69	16	29	6.0	4.3	7.5
13	58	43	20	47	51	60	55	15	26	6.9	5.0	9.9
14	59	35	20	36	52	63	89	16	19	6.2	4.9	10
15	59	30	18	31	56	68	83	14	15	8.7	6.0	7.1
16	61	37	20	20	61	72	82	13	13	8.8	4.6	8.8
17	84	58	20	16	68	93	93	12	12	7.2	5.3	6.1
18	208	67	19	23	74	64	96	10	11	6.4	4.4	5.7
19	47	75	19	46	88	49	96	11	11	5.9	4.7	6.4
20	44	74	17	60	51	44	89	10	11	5.9	4.9	8.3
21	43	72	16	50	51	96	82	8.8	9.7	6.0	5.9	5.6
22	40	81	14	43	53	50	78	140	8.5	6.6	5.2	6.6
23	39	89	14	55	53	66	77	24	7.2	6.9	5.0	5.0
24	44	90	15	60	53	74	66	17	6.9	6.6	4.7	4.7
25	49	89	14	50	48	76	45	14	6.8	6.1	7.9	6.5
26	46	90	13	41	54	82	39	12	7.5	6.0	5.3	5.1
27	44	72	13	45	289	85	46	11	7.9	4.5	5.5	4.4
28	42	53	13	54	567	347	58	10	6.7	5.1	5.0	4.3
29	46	43	12	65	---	268	63	10	5.5	5.7	4.4	4.3
30	50	37	12	71	---	99	63	13	6.6	6.6	5.1	4.0
31	53	---	69	75	---	90	---	12	---	7.3	6.6	---
Total	1,588	1,747	666	1,790	2,404	2,891	3,162	926.8	380.3	206.9	171.0	191.0
Mean	51.2	58.2	21.5	57.7	85.9	93.3	105	29.9	12.7	6.67	5.52	6.37
Max	208	90	69	235	567	347	641	140	29	9.0	7.9	10
Min	23	30	12	16	36	44	39	8.8	5.5	4.5	4.3	4.0
Ac-ft	3,150	3,470	1,320	3,550	4,770	5,730	6,270	1,840	754	410	339	379

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1981 - 1990, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	7.62	15.1	23.8	23.0	14.5	40.9	13.1	12.0	9.35	7.15	6.45	6.99
Max	16.1	55.9	126	116	25.5	237	39.3	43.7	30.0	10.9	13.4	11.3
(WY)	(1986)	(1981)	(1981)	(1981)	(1981)	(1983)	(1983)	(1983)	(1983)	(1985)	(1990)	(1985)
Min	2.36	4.67	2.53	7.01	7.42	6.26	4.02	3.77	1.12	1.20	1.79	1.09
(WY)	(1985)	(1987)	(1982)	(1989)	(1982)	(1990)	(1989)	(1982)	(1982)	(1982)	(1982)	(1981)

11072100 Temescal Creek above Main Street, at Corona, CA—Continued

SUMMARY STATISTICS

	Water Years 1981 - 1990	
Annual mean	12.4	
Highest annual mean	33.7	1981
Lowest annual mean	6.10	1987
Highest daily mean	1,720	Mar 1, 1983
Lowest daily mean	.27	Sep 25, 1981
Annual seven-day minimum	.56	Sep 23, 1981
Maximum peak flow	4,720	Mar 1, 1983
Maximum peak stage	11.67	Mar 1, 1983
Annual runoff (ac-ft)	8,990	
10 percent exceeds	27	
50 percent exceeds	6.1	
90 percent exceeds	2.7	

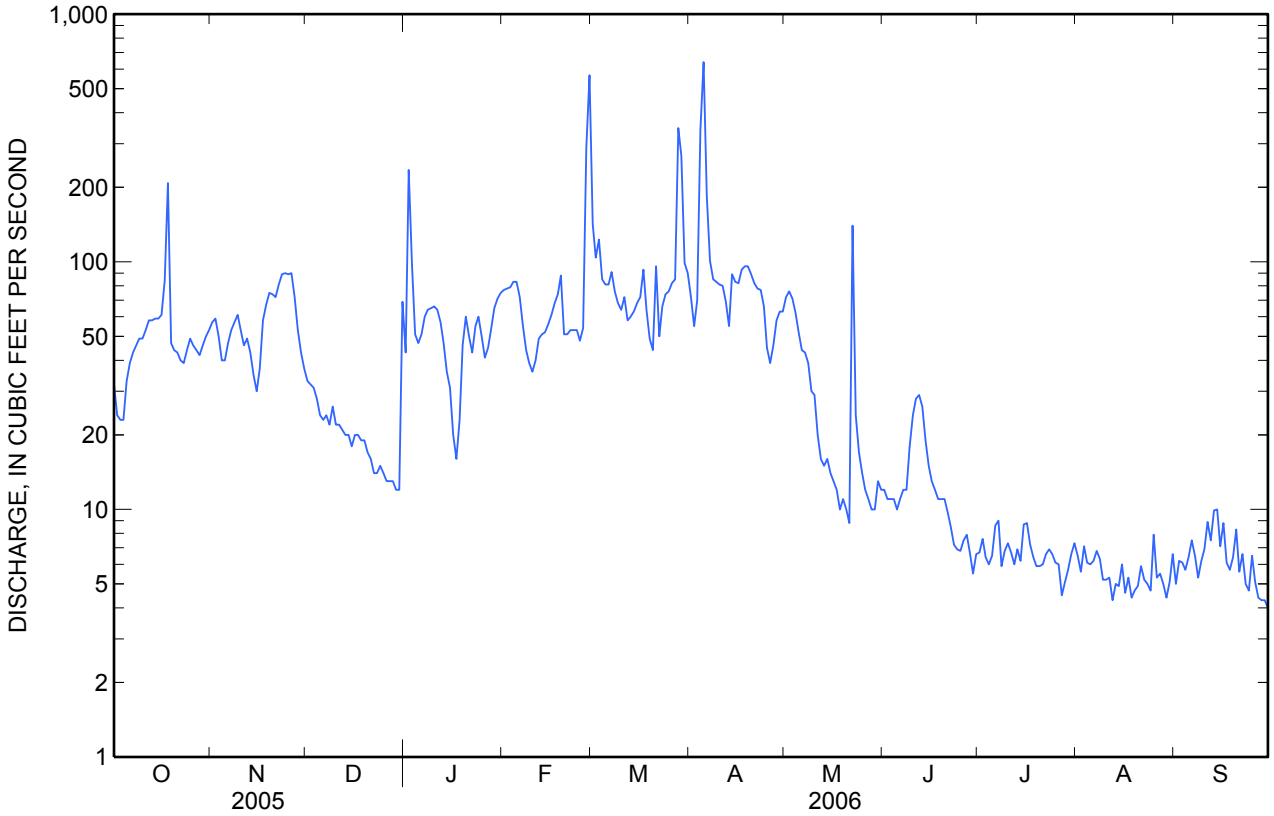
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1991 - 2006, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	17.2	17.1	20.5	57.6	101	67.4	42.9	24.6	14.4	12.4	12.0	12.8
Max	52.5	58.2	66.5	335	400	349	190	100	34.3	24.9	20.7	30.4
(WY)	(2005)	(2006)	(2005)	(2005)	(2005)	(1995)	(1995)	(1995)	(1995)	(1993)	(2005)	(2005)
Min	6.22	5.55	9.35	10.7	10.5	5.19	2.89	3.24	3.25	3.56	4.20	3.04
(WY)	(1996)	(1996)	(1999)	(2003)	(2002)	(2001)	(1991)	(1992)	(2003)	(1994)	(2004)	(2004)

SUMMARY STATISTICS

	Calendar Year 2005		Water Year 2006		Water Years 1991 - 2006	
Annual total	38,117		16,124.0			
Annual mean	104		44.2		32.9	
Highest annual mean					104	2005
Lowest annual mean					12.5	2004
Highest daily mean	1,930	Jan 11	641	Apr 5	2,090	Feb 24, 1998
Lowest daily mean	12	Dec 29	4.0	Sep 30	0.34	Jul 3, 1992
Annual seven-day minimum	13	Dec 24	4.8	Sep 24	0.89	Jan 13, 1992
Maximum peak flow			1,510	Mar 28	4,030	Jan 9, 2005
Maximum peak stage			5.17	Mar 28	6.72	Jan 9, 2005
Annual runoff (ac-ft)	75,610		31,980		23,850	
10 percent exceeds	188		83		61	
50 percent exceeds	49		33		13	
90 percent exceeds	18		5.8		4.6	

11072100 Temescal Creek above Main Street, at Corona, CA—Continued



Water-Data Report 2006

11073495 Cucamonga Creek near Mira Loma, CA

Santa Ana River Basin

LOCATION.--Lat 33°58′58″, long 117°35′55″ referenced to North American Datum of 1927, in SW ¼ NE ¼ sec.22, T.2 S., R.7 W., San Bernardino County, Hydrologic Unit 18070203, on right bank, 300 ft upstream from Merrill Avenue Bridge, and 4.6 mi west of Mira Loma.

DRAINAGE AREA.--75.8 mi².

SURFACE-WATER RECORDS

PERIOD OF RECORD.--January 1968 to July 1977, December 1978 to current year.
CHEMICAL DATA: Water years 1999-2000.
SPECIFIC CONDUCTANCE: Water years 1999-2000.
WATER TEMPERATURE: Water years 1999-2000.
SEDIMENT DATA: Water years 1999-2000.

GAGE.--Water-stage recorder, crest-stage gage, and concrete-lined flood-control channel. Elevation of gage is 660 ft above NGVD of 1929, from topographic map. Prior to July 1977 at site 100 ft downstream at different datum.

REMARKS.--Records fair above 200 ft³/s and poor below. Channel is a trapezoidal concrete floodway; records for low and medium flows prior to July 31, 1977, are not equivalent (channel concrete lined since July 31, 1977). Inland Empire Utilities Agency Tertiary Plant No. 1 began discharging effluent 3.3 mi upstream from station on May 8, 1985. See schematic diagram of Santa Ana River Basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,300 ft³/s, Oct. 20, 2004, gage height, 6.58 ft, from rating curve extended above 617 ft³/s on basis of step-backwater computations; maximum gage height, 7.85 ft, Feb. 27, 1983. Prior to operation of Plant No. 1, no flow for most of some years. Minimum daily since 1985, 2.5 ft³/s, June 6, 1987.

11073495 Cucamonga Creek near Mira Loma, CA—Continued

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006
DAILY MEAN VALUES

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	51	46	48	72	46	68	63	52	44	56	35	43
2	51	44	52	593	46	55	50	52	45	59	36	41
3	51	45	54	103	46	187	51	52	43	56	37	45
4	52	44	54	59	48	52	705	53	42	49	36	42
5	49	46	51	47	51	49	815	54	41	49	42	46
6	46	47	45	41	51	53	133	55	43	53	41	35
7	45	45	44	41	50	46	58	57	43	48	39	32
8	48	44	46	52	52	51	45	59	46	50	37	41
9	49	44	49	46	56	45	47	57	49	57	35	38
10	46	44	49	41	55	70	49	59	48	56	33	45
11	48	43	47	41	56	105	50	66	50	40	32	40
12	46	46	45	43	59	55	49	65	49	37	33	33
13	47	48	44	47	57	56	49	60	51	44	38	32
14	42	47	43	49	55	60	355	64	51	35	34	40
15	44	46	43	52	55	60	164	64	51	38	35	41
16	100	43	45	51	56	56	59	66	51	31	29	38
17	402	44	44	49	106	88	48	57	52	27	29	47
18	316	45	44	50	76	105	43	54	55	37	30	51
19	56	44	43	48	141	96	44	53	55	30	31	41
20	50	46	44	47	65	132	47	53	57	34	37	48
21	52	45	43	57	53	309	49	53	55	48	36	46
22	48	45	43	55	43	69	53	239	53	45	35	46
23	45	46	43	53	54	87	58	59	53	47	27	43
24	46	47	44	51	57	81	49	49	55	39	28	50
25	41	46	44	46	58	79	46	49	57	49	21	50
26	43	46	42	45	62	84	47	47	56	40	23	48
27	45	50	44	43	433	86	52	46	55	39	27	48
28	44	49	44	44	903	767	51	46	55	32	22	46
29	45	49	44	46	---	295	50	47	50	22	24	41
30	47	49	44	46	---	102	51	46	48	20	37	38
31	47	---	301	46	---	62	---	44	---	31	45	---
Total	2,142	1,373	1,670	2,104	2,890	3,510	3,430	1,877	1,503	1,298	1,024	1,275
Mean	69.1	45.8	53.9	67.9	103	113	114	60.5	50.1	41.9	33.0	42.5
Max	402	50	301	593	903	767	815	239	57	59	45	51
Min	41	43	42	41	43	45	43	44	41	20	21	32
Ac-ft	4,250	2,720	3,310	4,170	5,730	6,960	6,800	3,720	2,980	2,570	2,030	2,530

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 1977, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	.021	1.15	1.55	18.2	4.65	1.91	1.35	.065	.001	.000	.000	.11
Max	.19	6.07	7.91	149	30.7	7.94	13.1	.54	.007	.000	.000	1.03
(WY)	(1972)	(1971)	(1972)	(1969)	(1969)	(1969)	(1969)	(1977)	(1969)	(1968)	(1968)	(1976)
Min	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	(1969)	(1969)	(1970)	(1975)	(1972)	(1972)	(1968)	(1968)	(1968)	(1968)	(1968)	(1968)

11073495 Cucamonga Creek near Mira Loma, CA—Continued

SUMMARY STATISTICS

	Water Years 1968 - 1977	
Annual mean	2.73	
Highest annual mean	16.8	1969
Lowest annual mean	.16	1976
Highest daily mean	2,600	Jan 25, 1969
Lowest daily mean	.00	Feb 1, 1968
Annual seven-day minimum	.00	Feb 1, 1968
Maximum peak flow	9,100	Jan 25, 1969
Maximum peak stage	7.08	Jan 25, 1969
Annual runoff (ac-ft)	1,980	
10 percent exceeds	.10	
50 percent exceeds	.00	
90 percent exceeds	.00	

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1979 - 1984, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	3.49	11.3	7.69	34.1	65.0	46.3	12.1	3.43	.48	.37	1.47	1.08
Max	11.1	27.9	24.7	149	216	205	63.4	19.8	2.30	1.22	6.99	3.45
(WY)	(1984)	(1983)	(1984)	(1983)	(1980)	(1983)	(1983)	(1983)	(1983)	(1983)	(1983)	(1983)
Min	.091	.002	.006	1.67	1.29	2.44	.056	.063	.008	.019	.009	.011
(WY)	(1981)	(1980)	(1980)	(1984)	(1984)	(1984)	(1981)	(1979)	(1979)	(1981)	(1979)	(1979)

SUMMARY STATISTICS

	Water Years 1979 - 1984	
Annual mean	17.5	
Highest annual mean	53.4	1983
Lowest annual mean	1.51	1981
Highest daily mean	2,530	Mar 1, 1983
Lowest daily mean	.00	Feb 6, 1979
Annual seven-day minimum	.00	Feb 6, 1979
Maximum peak flow	16,100	Feb 27, 1983
Maximum peak stage	7.85	Feb 27, 1983
Annual runoff (ac-ft)	12,700	
10 percent exceeds	10	
50 percent exceeds	.13	
90 percent exceeds	.01	

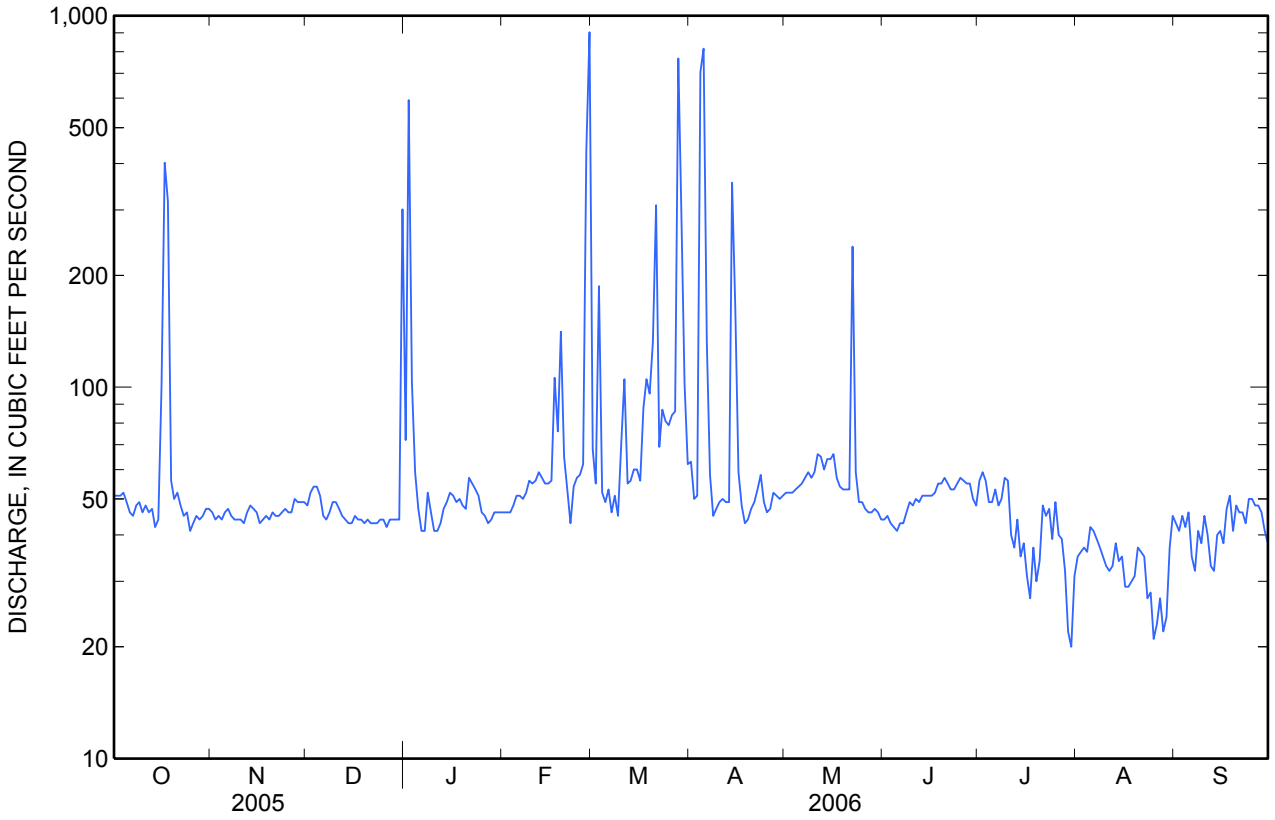
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 2006, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	48.0	45.3	53.0	92.3	113	71.0	50.4	38.6	36.9	35.1	34.5	38.4
Max	223	102	113	442	350	198	114	69.4	57.1	53.4	51.8	52.0
(WY)	(2005)	(2003)	(2005)	(2005)	(2005)	(1995)	(2006)	(2003)	(1992)	(2004)	(1992)	(1986)
Min	20.4	23.4	21.0	26.1	34.9	25.3	20.5	18.5	18.1	19.3	18.5	16.4
(WY)	(1987)	(1989)	(1987)	(1989)	(1989)	(1988)	(1987)	(1988)	(1988)	(1987)	(1987)	(1988)

11073495 Cucamonga Creek near Mira Loma, CA—Continued

SUMMARY STATISTICS

	Calendar Year 2005		Water Year 2006		Water Years 1986 - 2006	
Annual total	42,889		24,096			
Annual mean	118		66.0		54.4	
Highest annual mean					137	2005
Lowest annual mean					26.6	1987
Highest daily mean	5,200	Jan 9	903	Feb 28	5,200	Jan 9, 2005
Lowest daily mean	38	Aug 7	20	Jul 30	2.5	Jun 6, 1987
Annual seven-day minimum	39	Aug 6	25	Aug 23	12	Aug 25, 1988
Maximum peak flow			6,630	Mar 28	17,300	Oct 20, 2004
Maximum peak stage			4.60	Mar 28	6.58	Oct 20, 2004
Annual runoff (ac-ft)	85,070		47,790		39,400	
10 percent exceeds	116		67		62	
50 percent exceeds	51		48		37	
90 percent exceeds	44		37		21	



Water-Data Report 2006

11073360 Chino Creek at Schaefer Avenue, near Chino, CA

Santa Ana River Basin

LOCATION.--Lat 34°00′14″, long 117°43′34″ referenced to North American Datum of 1927, San Bernardino County, Hydrologic Unit 18070203, in Santa Ana del Chino Grant, on right bank, 300 ft downstream from old Schaefer Avenue Bridge, 0.8 mi downstream from San Antonio Creek, and 1.5 mi southwest of Chino.

DRAINAGE AREA.--48.9 mi².

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1969 to current year.
CHEMICAL DATA: Water year 1998.
SEDIMENT DATA: Water year 1998.

REVISED RECORDS.--WDR CA-84-1: 1983(M). WDR CA-95-1: 1992, 1993.

GAGE.--Water-stage recorder and concrete-lined flood-control channel. Concrete dikes formed low-water control from October 1975 to Apr. 16, 1991. Elevation of gage is 685 ft above NGVD of 1929, from topographic map.

REMARKS.--Records fair. Since 1997, due to construction in area of gage, Schaefer Avenue no longer extends to the Chino Creek crossing. The Schaefer Avenue Bridge, however, remains. Flow mostly regulated by San Antonio Flood-Control Reservoir, capacity, 7,700 acre-ft. Natural streamflow affected by extensive ground-water withdrawals, diversions for power, domestic use, irrigation, and return flow from irrigated areas. Releases of imported water are made to the basin by the California Water Project at times in some years, via San Antonio Creek from Rialto Pipeline below San Antonio Dam, at a site approximately 11 mi upstream. During the current year, 716 acre-ft was released. See schematic diagram of Santa Ana River Basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,700 ft³/s, Feb. 27, 1983, gage height, 10.32 ft, from rating curve extended above 560 ft³/s, on basis of slope-conveyance study; no flow May 21, June 30, July 1, Oct. 30, Nov. 3, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Jan. 25, 1969, reached a stage of 9.23 ft, present datum, discharge, 9,200 ft³/s, on basis of contracted-opening measurement at site 6.1 mi downstream.

11073360 Chino Creek at Schaefer Avenue, near Chino, CA—Continued

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006
DAILY MEAN VALUES

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	48	1.8	1.9	12	2.1	2.5	31	2.0	1.4	1.3	3.2	2.0
2	49	1.9	3.9	207	2.1	2.1	3.5	1.9	1.4	1.3	1.5	2.1
3	49	1.8	4.0	5.1	2.0	59	3.1	1.8	1.4	1.2	1.6	2.5
4	34	1.9	1.7	3.4	2.0	2.4	310	1.8	1.3	1.2	1.7	3.2
5	27	1.7	1.8	3.1	2.0	2.1	153	1.7	1.4	1.2	1.6	2.2
6	34	1.7	1.8	2.7	2.0	15	3.6	1.7	1.5	1.5	1.5	2.3
7	36	1.9	1.8	2.5	2.0	7.1	2.6	1.7	1.6	1.2	1.5	2.2
8	41	1.9	1.9	2.7	2.0	1.7	2.4	2.0	1.7	1.2	2.3	2.1
9	42	1.8	5.4	2.6	2.0	1.9	2.3	1.7	1.6	1.2	4.7	2.1
10	20	1.8	1.8	2.1	2.0	11	2.5	1.8	1.6	1.2	2.1	1.9
11	2.3	1.8	1.9	2.5	2.1	62	2.0	1.7	1.6	1.3	1.8	2.2
12	2.9	2.2	1.9	2.4	2.1	3.5	2.1	2.0	1.8	1.4	1.8	2.0
13	2.7	1.8	1.9	2.4	2.3	3.1	2.0	1.8	1.8	1.3	1.7	2.0
14	3.0	1.9	1.9	7.9	2.2	1.8	160	2.3	2.0	1.8	1.7	2.2
15	2.4	2.0	1.9	2.6	2.3	1.9	9.0	2.4	1.6	1.5	1.8	2.0
16	2.6	1.8	2.0	2.5	2.3	2.0	3.0	1.7	1.5	1.6	2.1	2.0
17	199	1.9	1.9	2.5	32	19	7.7	1.9	1.7	2.0	2.0	1.8
18	78	2.0	1.9	2.9	8.7	20	2.5	1.9	1.7	1.9	1.7	1.9
19	3.0	1.9	1.9	2.4	43	9.8	2.4	2.0	1.6	1.9	1.8	2.1
20	3.4	2.0	2.0	2.1	2.0	28	2.5	1.9	1.6	1.6	1.6	1.9
21	2.4	2.1	2.1	2.1	2.0	42	2.8	1.9	1.6	1.8	2.4	1.8
22	2.1	2.0	2.1	2.0	1.7	1.8	2.7	38	1.4	1.9	2.3	1.9
23	2.0	1.9	2.1	2.0	1.8	2.4	5.4	2.5	1.4	3.5	2.5	1.9
24	2.1	1.9	2.0	2.4	1.7	2.5	2.2	2.3	1.4	1.5	2.1	1.7
25	2.1	1.9	2.1	2.5	1.8	2.6	2.2	2.2	1.5	1.5	2.1	1.9
26	2.1	1.9	2.7	2.2	1.6	3.1	2.2	2.1	1.5	1.6	2.9	2.1
27	2.3	1.7	2.3	2.0	218	2.9	2.3	2.0	1.3	1.5	2.0	2.0
28	2.9	1.8	2.1	1.8	228	337	2.0	1.7	1.7	1.7	1.9	1.9
29	1.8	1.9	2.1	1.8	---	64	1.9	1.7	1.2	1.6	2.1	1.8
30	1.7	2.0	2.0	2.2	---	2.5	2.0	1.5	1.3	1.7	2.1	2.0
31	1.8	---	135	1.9	---	2.2	---	1.5	---	1.8	2.0	---
Total	702.6	56.6	201.8	296.3	575.8	718.9	732.9	95.1	46.1	48.9	64.1	61.7
Mean	22.7	1.89	6.51	9.56	20.6	23.2	24.4	3.07	1.54	1.58	2.07	2.06
Max	199	2.2	135	207	228	337	310	38	2.0	3.5	4.7	3.2
Min	1.7	1.7	1.7	1.8	1.6	1.7	1.9	1.5	1.2	1.2	1.5	1.7
Ac-ft	1,390	112	400	588	1,140	1,430	1,450	189	91	97	127	122

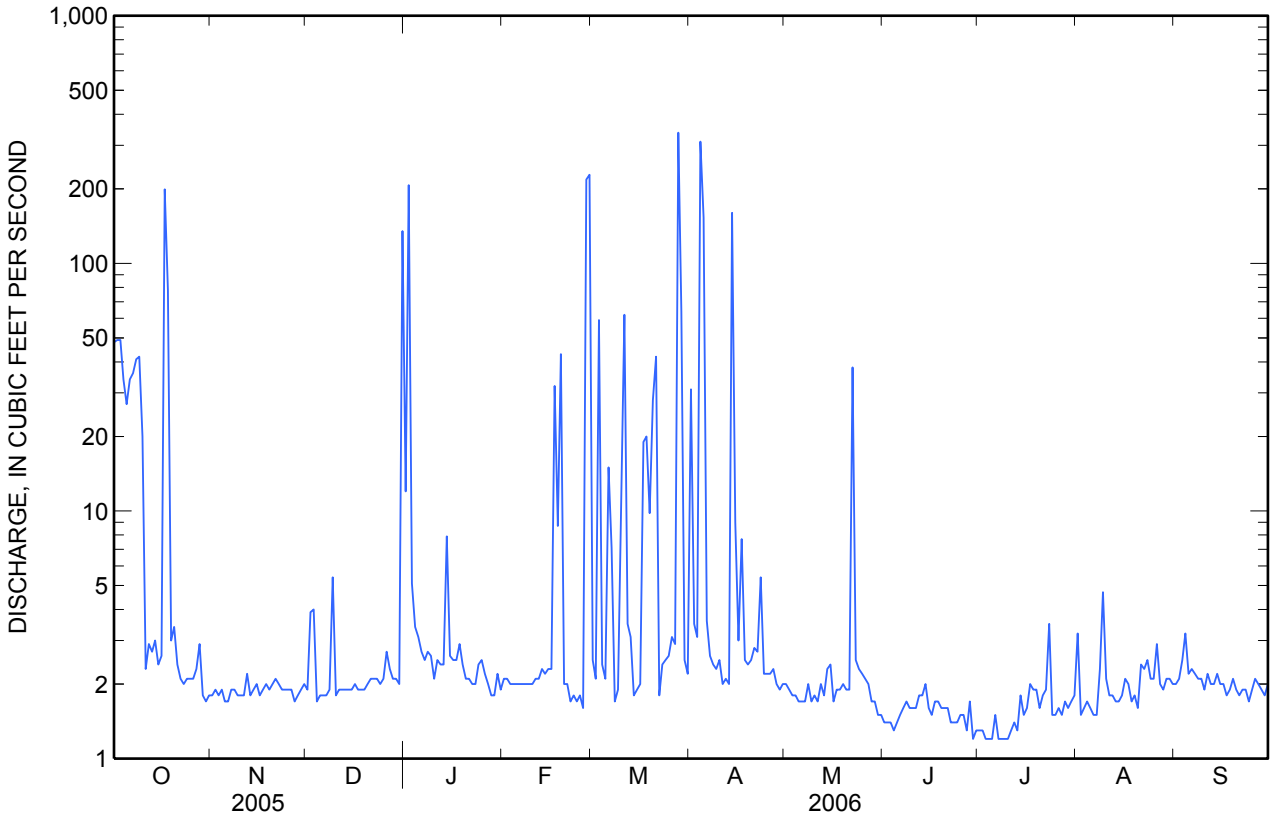
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1970 - 2006, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	18.2	16.5	25.5	36.6	40.4	28.2	10.1	13.0	17.6	17.9	15.8	14.1
Max	126	113	189	221	193	257	68.6	104	184	176	191	198
(WY)	(1979)	(1976)	(1976)	(2005)	(1980)	(1978)	(1974)	(1997)	(1976)	(1974)	(1974)	(1997)
Min	0.06	0.23	0.53	0.55	0.33	0.30	0.14	0.22	0.06	0.07	0.14	0.13
(WY)	(1978)	(1978)	(1970)	(1972)	(1972)	(1972)	(1977)	(1973)	(1977)	(1977)	(1976)	(1977)

11073360 Chino Creek at Schaefer Avenue, near Chino, CA—Continued

SUMMARY STATISTICS

	Calendar Year 2005		Water Year 2006		Water Years 1970 - 2006	
Annual total	13,742.3		3,600.8			
Annual mean	37.7		9.87		21.1	
Highest annual mean					92.4	1974
Lowest annual mean					3.24	1970
Highest daily mean	1,560	Jan 9	337	Mar 28	2,060	Mar 1, 1978
Lowest daily mean	1.3	Jul 13	1.2	Jun 29	0.00	May 21, 1977
Annual seven-day minimum	1.5	Aug 31	1.2	Jun 29	0.02	Oct 28, 1977
Maximum peak flow			2,840	Mar 28	12,700	Feb 27, 1983
Maximum peak stage			6.75	Mar 28	10.32	Feb 27, 1983
Annual runoff (ac-ft)	27,260		7,140		15,280	
10 percent exceeds	51		8.8		73	
50 percent exceeds	2.4		2.0		1.3	
90 percent exceeds	1.7		1.5		0.40	



APPENDIX B

DAILY PRECIPITATION DATA
FOR SAN BERNARDINO

WATER YEAR 2005-06

TABLE B-1

DAILY PRECIPITATION
USGS GILBERT STREET PRECIPITATION GAGE AT SAN BERNARDINO
(NEAR FORMER SAN BERNARDINO COUNTY HOSPITAL SITE)
(inches)

	2005			2006								
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	0	0	0.08	0	0	0.16	0	0	0	0	0
2	0	0	0.10	0.95	0	0	0	0	0	0	0	0
3	0	0	0.02	0.01	0	0.25	0	0	0	0	0	0
4	0	0	0	0	0	0.00	1.25	0	0	0	0	0
5	0	0	0	0	0	0	2.22	0	0	0	0	0
6	0	0	0	0	0	0.13	0	0	0	0	0	0
7	0	0	0	0	0	0.16	0	0	0	0	0	0
8	0	0	0	0	0	0.00	0	0	0	0	0	0
9	0	0	0.04	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0.17	0	0	0	0	0	0
11	0	0	0	0	0	0.21	0	0	0	0	0	0
12	0	0	0	0	0	0.07	0	0	0	0	0	0
13	0	0	0	0	0	0.00	0	0	0	0	0	0
14	0	0	0	0	0	0	0.49	0	0	0	0	0
15	0.02	0	0	0	0	0	0.03	0	0	0	0	0
16	0.03	0	0	0	0	0	0	0	0	0	0	0
17	0.58	0	0	0	0.16	0.23	0	0	0	0.01	0	0
18	0.72	0	0	0	0.02	0.08	0	0	0	0	0	0
19	0	0	0	0.02	0.22	0.06	0	0	0	0	0	0
20	0	0	0	0	0.00	0.16	0	0	0	0	0	0
21	0	0	0	0	0	0.20	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0.33	0	0	0	0
23	0	0	0	0	0	0	0.01	0	0	0.06	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0
25	0.02	0	0	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	0	0	0
27	0	0	0	0	0.97	0	0.03	0.03	0	0	0	0
28	0	0	0	0	1.25	0.75	0.01	0	0	0	0	0
29	0	0	0	0		0.16	0	0	0	0	0	0
30	0	0	0	0		0	0	0	0	0.04	0	0
31	0		0.67	0		0		0		0.05	0	
Total	1.37	0.00	0.83	1.06	2.62	2.63	4.20	0.36	0.00	0.16	0.00	0.00

Total Rainfall = 13.23 Inches

74% of average of 17.98 inches per year

APPENDIX C

SANTA ANA RIVER WATERMASTER
FINANCIAL STATEMENTS WITH REPORT
ON EXAMINATION BY
ORANGE COUNTY WATER DISTRICT CONTROLLER

WATER YEAR 2005-06

SANTA ANA RIVER WATERMASTER

FINANCIAL STATEMENTS

JUNE 30, 2006

SANTA ANA RIVER WATERMASTER

STATEMENT OF ASSETS AND LIABILITIES ARISING FROM CASH TRANSACTIONS

JUNE 30, 2006

ASSETS

Cash in savings account	$ 21,571

FUND BALANCE

Fund Balance	$ 21,571

SANTA ANA RIVER WATERMASTER

STATEMENT OF REVENUE AND EXPENSES ARISING FROM CASH TRANSACTIONS

FOR THE PERIOD JULY 1, 2005 - JUNE 30, 2006

	Actual	Budget	Variance - Favorable (Unfavorable)
REVENUE COLLECTED:			
Water District Contributions			
Orange County Water District	$ 4,800	$ 4,800	0
Inland Empire Utilities Agency	2,400	2,400	0
Western Municipal Water District	2,400	2,400	0
San Bernardino Valley Municipal Water District	2,400	2,400	0
Interest From Savings Account	63	0	63
TOTAL REVENUE COLLECTED	$ 12,063	$ 12,000	$ 63
EXPENSES PAID:			
Professional Engineering Services	$ -	$ 9,000	9,000
Administrative Expenses:			0
Auditing Services			0
Reproduction of Annual Report	-	3,000	3,000
	$ -	$ 12,000	$ 12,000
EXCESS OF REVENUE COLLECTED OVER (UNDER) EXPENSES PAID	12,063		
FUND BALANCE AT JUNE 30, 2005	9,508		
FUND BALANCE AT JUNE 30, 2006	21,571		

APPENDIX D

SAN BERNARDINO
HIGH GROUNDWATER MITIGATION PROJECT WATER
DISCHARGED TO THE SANTA ANA RIVER
ABOVE RIVERSIDE NARROWS

WATER YEAR 2005-06

There was no discharge of HGMP water to Santa Ana River in the Bunker Hill area during the 2005-06 water year.

APPENDIX E

WATER QUALITY AND DISCHARGE OF WATER RELEASED BY MWDSC TO SAN ANTONIO CREEK NEAR UPLAND (CONNECTION OC-59)

WATER YEAR 2005-06

TABLE E-1

NONTRIBUTARY WATER FROM OC-59
MONTHLY TOTALS
WATER YEAR 2005-06
(acre-feet)

Month	Released at OC-59 for OCWD	12-Hour Delay [1]	Evapotranspiration Losses [2]	Calculated Flow at Prado
2005				
October	715	766	20	746
November	0	0	0	0
December	0	0	0	0
2006				
January	0	0	0	0
February	0	0	0	0
March	0	0	0	0
April	0	0	0	0
May	0	0	0	0
June	0	0	0	0
July	0	0	0	0
August	0	0	0	0
September	0	0	0	0
Total	715	766	20	746

(1) Released nontributary water is delayed 12 hours to reflect the estimated travel time between OC-59 and Prado Dam.

(2) Monthly evapotranspiration losses calculated per the procedures referenced in the Twelfth Annual Watermaster Report, Appendix C and shown in Table E-3.

TABLE E-2

NONTRIBUTARY WATER FROM OC-59
OCTOBER 2005
(cfs)

Day	Released at OC-59 for OCWD	12-Hour Delay	Calculated Flow At Prado Dam [1]
1	53	52	50
2	46	49	48
3	47	46	45
4	31	39	38
5	24	28	27
6	31	28	27
7	34	32	32
8	38	36	35
9	39	39	38
10	18	29	28
11	0	9	9
12	0	0	0
13	0	0	0
14	0	0	0
15	0	0	0
16	0	0	0
17	0	0	0
18	0	0	0
19	0	0	0
20	0	0	0
21	0	0	0
22	0	0	0
23	0	0	0
24	0	0	0
25	0	0	0
26	0	0	0
27	0	0	0
28	0	0	0
29	0	0	0
30	0	0	0
31	0	0	0
Total (cfs-days)	361	386	376
(AF)	715	766	746

(1) Reflects the monthly evapotranspiration loss listed in Table E-3.

TABLE E-3
EVAPOTRANSPIRATION LOSSES OF STATE PROJECT WATER FROM OC-59
WATER YEAR 2005-06
SUM OF ALL CHANNEL REACHES
(acre-feet)

Month	State Water Released with 12-hour delay	Rialto Pipeline to Los Serranos Road	Los Serranos to Prado Dam w/o vegetation	Los Serranos to Prado Dam w/ vegetation	Total Evapo-transpiration	Percent of Monthly Release
2005						
October	766	6	12	2	20	2.6%
November	0	0	0	0	0	0%
December	0	0	0	0	0	0%
2006						
January	0	0	0	0	0	0%
February	0	0	0	0	0	0%
March	0	0	0	0	0	0%
April	0	0	0	0	0	0%
May	0	0	0	0	0	0%
June	0	0	0	0	0	0%
July	0	0	0	0	0	0%
August	0	0	0	0	0	0%
September	0	0	0	0	0	0%
Total	766	6	12	2	20	

Percent of Annual Releases = 2.61%

TABLE E-3.1
EVAPOTRANSPIRATION LOSSES OF STATE PROJECT WATER FROM OC-59
WATER YEAR 2005-06
RIALTO PIPELINE TO LOS SERRANOS ROAD

Month	State Water Released with 12-hour delay (AF)	Days of Evaporation	Evapo-transpiration (in) [a]	Computed Evaporation Losses [b]	
				(AF)	(% of release)
[1]	[2]	[3]	[4]	[5]	[6]
2005					
October	766	11	3.65	6	0.8%
November	0	0	---	0	0%
December	0	0	---	0	0%
2006					
January	0	0	---	0	0%
February	0	0	---	0	0%
March	0	0	---	0	0%
April	0	0	---	0	0%
May	0	0	---	0	0%
June	0	0	---	0	0%
July	0	0	---	0	0%
August	0	0	---	0	0%
September	0	0	---	0	0%

(a) At UCR Evapotranspiration Station #44
(b) Evaporation losses=[4]/(days/month)x[3]x(Pan Factor of 1.0)x(area of 56.1 acres)x(1 foot/12 inches)

TABLE E-3.2
EVAPOTRANSPIRATION LOSSES OF STATE PROJECT WATER FROM OC-59
WATER YEAR 2005-06
LOS SERRANOS ROAD TO PRADO DAM (WITHOUT VEGETATION COVER)

Month	State Water Released with 12-hour delay (AF)	Days of Evaporation (+7 days)[a]	Evapo-transpiration (in)[b]	Average Wetted Area (acre)[c]	Computed Evaporation Losses[d]	
					(AF)	(% of release)
[1]	[2]	[3]	[4]	[5]	[6]	[7]
2005						
October	766	17	3.65	72	12	1.6%
November	0	0	---	0	0	0%
December	0	0	---	0	0	0%
2006						
January	0	0	---	0	0	0%
February	0	0	---	0	0	0%
March	0	0	---	0	0	0%
April	0	0	---	0	0	0%
May	0	0	---	0	0	0%
June	0	0	---	0	0	0%
July	0	0	---	0	0	0%
August	0	0	---	0	0	0%
September	0	0	---	0	0	0%

(a) Period of delivery plus 7 days after stoppage of delivery.
(b) At UCR Evapotranspiration Station #44.
(c) Equals 1/2 of 144 acres if the maximum flow rate of the month is less than 200 cfs and 1/2 of 369 acres if the maximum flow rate is greater or equal to 200 cfs.
(d) Evaporation losses=[3]x[4]/(days/month)x[5]x(1 foot/12 inches)

TABLE E-3.3
EVAPOTRANSPIRATION LOSSES OF STATE PROJECT WATER FROM OC-59
WATER YEAR 2005-06
LOS SERRANOS ROAD TO PRADO DAM (WITH VEGETATION COVER)

Month	State Water Released with 12-hour delay (AF)	Days of Evaporation[a]	Evapo-transpiration (in)[b]	Normal Evaporation (in)[c]	Average Wetted Area (acre)[d]	Computed Evaporation Losses[e]	
						(AF)	(% of release)
[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
2005							
October	766	17	3.65	3.5	72	2	0.2%
November	0	0	---	2.8	0	0	0%
December	0	0	---	2.8	0	0	0%
2006							
January	0	0	---	2.8	0	0	0%
February	0	0	---	1.6	0	0	0%
March	0	0	---	3.6	0	0	0%
April	0	0	---	4.1	0	0	0%
May	0	0	---	4.9	0	0	0%
June	0	0	---	5.7	0	0	0%
July	0	0	---	6.4	0	0	0%
August	0	0	---	6.2	0	0	0%
September	0	0	---	4.8	0	0	0%

(a) Period of delivery plus 7 days after stoppage of delivery.
(b) At UCR Evapotranspiration Station #44.
(c) Referenced in the 1983 report "Nontributary Losses of State Water Released at OC-59 and Final Adjustments to Base Flows".
(d) Equals 1/2 of 144 acres if the maximum flow rate of the month is less than 200 cfs and 1/2 of 369 acres if the maximum flow rate is greater or equal to 200 cfs.
(e) Evaporation losses=[3]x([4]-[5])/(days/month)x[6]x(1 foot/12 inches)

TABLE E-4

CALCULATION OF WEIGHTED TDS OF
OC-59 RELEASES

WATER YEAR 2005-06

Month	Released at OC-59 for OCWD[1] (acre-feet)	TDS at Release[2] (mg/L)	Flow X TDS at Release	Calculated OC-59 Flow at Prado (acre-feet)
2005				
October	766	191	146,306	746
November	0	-	0	0
December	0	-	0	0
2006				
January	0	-	0	0
February	0	-	0	0
March	0	-	0	0
April	0	-	0	0
May	0	-	0	0
June	0	-	0	0
July	0	-	0	0
August	0	-	0	0
September	0	-	0	0
Total	766		146,306	746

At Discharge: Flow-weighted TDS = $\frac{146,306}{766}$ = 191 mg/L

At Prado: Flow-weighted TDS = $\frac{146,306}{746}$ = 196 mg/L

(1) Volume includes half of the volume for September 30, 2005, which was determined to have reached Prado reservoir during October 2005.

(2) TDS values from monthly analyses of State Water Project water for Devil Canyon.

APPENDIX F

WATER QUALITY AND DISCHARGE FROM THE ARLINGTON DESALTER TO THE ARLINGTON VALLEY DRAIN

WATER YEAR 2005-06

There was no discharge of Arlington Desalter water to the Arlington Valley Drain during the 2005-06 water year.

APPENDIX G

WATER QUALITY AND DISCHARGE FROM THE SAN JACINTO WATERSHED

WATER YEAR 2005-06

TABLE G-1

SAN JACINTO WATERSHED DISCHARGE CALCULATIONS
WATER YEAR 2005-06
OCTOBER 2005

Day	[1] Temescal Creek Flow	[2] Temescal Creek Base Flow	[3] Scalped Storm Flow	[4] EMWD Discharge to Temescal Creek	[5] San Jacinto Watershed Outflow At Prado	[6] Santa Ana River Flow Lost to the Ocean	[7] San Jacinto Outflow Recharged by OCWD
1	32	23	0	4	9	0	9
2	24	23	0	0	1	0	1
3	23	23	0	59	0	0	0
4	23	23	0	35	0	0	0
5	33	23	0	38	10	0	10
6	39	24	0	37	16	0	16
7	43	24	0	34	20	0	20
8	46	24	0	34	23	0	23
9	49	24	0	37	26	0	26
10	49	24	0	45	26	0	26
11	53	24	0	41	29	8	21
12	58	24	0	44	34	0	34
13	58	24	0	53	34	0	34
14	59	24	0	47	35	0	35
15	59	24	0	38	35	0	35
16	61	25	2	26	35	0	35
17	84	25	25	0	35	222	0
18	208	25	158	32	26	72	0
19	47	25	3	38	20	0	20
20	44	25	0	0	20	0	20
21	43	25	0	11	18	0	18
22	40	25	0	37	15	0	15
23	39	25	0	63	14	0	14
24	44	25	0	69	19	0	19
25	49	25	0	12	24	0	24
26	46	26	0	9	21	0	21
27	44	26	0	40	19	0	19
28	42	26	0	41	17	0	17
29	46	26	0	53	21	0	21
30	50	26	0	54	25	0	25
31	53	26	0	62	27	0	27
Total (cfs)	1,588	754	188	1,093	647	302	579
(acre-feet)	3,150	1,495	373	2,167	1,282	599	1,147

TABLE G-1

SAN JACINTO WATERSHED DISCHARGE CALCULATIONS
WATER YEAR 2005-06
NOVEMBER 2005

Day	[1] 0 Temescal Creek Flow	[2] Temescal Creek Base Flow	[3] Scalped Storm Flow	[4] EMWD Discharge to Temescal Creek	[5] San Jacinto Watershed Outflow At Prado	[6] Santa Ana River Flow Lost to the Ocean	[7] San Jacinto Outflow Recharged by OCWD
1	57	26	0	0	31	0	31
2	59	26	0	44	33	0	33
3	50	26	0	38	24	0	24
4	40	26	0	29	14	0	14
5	40	26	0	50	15	0	15
6	47	26	0	65	22	0	22
7	53	26	0	48	28	0	28
8	57	26	0	51	32	0	32
9	61	26	0	4	36	0	36
10	53	25	0	39	28	0	28
11	46	25	0	15	21	0	21
12	49	25	0	0	24	0	24
13	43	25	0	0	18	0	18
14	35	25	0	0	10	0	10
15	30	25	0	57	5	0	5
16	37	25	0	41	12	0	12
17	58	25	0	57	33	0	33
18	67	25	0	41	42	0	42
19	75	25	0	28	50	0	50
20	74	25	0	53	49	0	49
21	72	25	0	47	47	0	47
22	81	25	0	65	56	0	56
23	89	25	0	65	64	0	64
24	90	25	0	39	65	0	65
25	89	25	0	52	64	0	64
26	90	25	0	11	65	0	65
27	72	25	0	0	48	0	48
28	53	24	0	0	29	0	29
29	43	24	0	0	20	0	20
30	37	24	0	0	14	0	14
Total (cfs)	1,747	752	0	937	995	0	995
(acre-feet)	3,465	1,492	0	1,859	1,974	0	1,974

TABLE G-1

SAN JACINTO WATERSHED DISCHARGE CALCULATIONS
WATER YEAR 2005-06
DECEMBER 2005

Day	[1] 0 Temescal Creek Flow	[2] Temescal Creek Base Flow	[3] Scalped Storm Flow	[4] EMWD Discharge to Temescal Creek	[5] San Jacinto Watershed Outflow At Prado	[6] Santa Ana River Flow Lost to the Ocean	[7] San Jacinto Outflow Recharged by OCWD
1	33	23	0	0	10	0	10
2	32	23	0	0	9	0	9
3	31	23	0	0	9	0	9
4	28	23	0	0	6	0	6
5	24	22	0	0	2	0	2
6	23	22	0	0	1	0	1
7	24	24	0	0	0	0	0
8	22	22	0	0	0	0	0
9	26	22	4	0	0	0	0
10	22	22	0	0	0	0	0
11	22	22	0	0	0	0	0
12	21	21	0	0	0	0	0
13	20	20	0	0	0	0	0
14	20	20	0	0	0	0	0
15	18	18	0	0	0	0	0
16	20	20	0	0	0	0	0
17	20	20	0	0	0	0	0
18	19	19	0	0	0	0	0
19	19	19	0	0	0	0	0
20	17	17	0	0	0	0	0
21	16	16	0	0	0	0	0
22	14	14	0	0	0	0	0
23	14	14	0	0	0	0	0
24	15	15	0	0	0	0	0
25	14	14	0	0	0	0	0
26	13	13	0	0	0	0	0
27	13	13	0	0	0	0	0
28	13	13	0	0	0	0	0
29	12	12	0	1	0	0	0
30	12	12	0	2	0	0	0
31	69	12	57	0	0	232	0
Total (cfs)	666	569	61	2	36	232	36
(acre-feet)	1,321	1,129	121	5	71	460	71

TABLE G-1

SAN JACINTO WATERSHED DISCHARGE CALCULATIONS
WATER YEAR 2005-06
JANUARY 2006

Day	[1] Jan-00 Temescal Creek Flow	[2] Temescal Creek Base Flow	[3] Scalped Storm Flow	[4] EMWD Discharge to Temescal Creek	[5] San Jacinto Watershed Outflow At Prado	[6] Santa Ana River Flow Lost to the Ocean	[7] San Jacinto Outflow Recharged by OCWD
1	43	12	31	1	0	0	0
2	235	13	222	28	0	365	0
3	99	13	86	0	0	266	0
4	51	13	38	68	0	606	0
5	47	13	20	46	14	0	14
6	51	14	8	67	29	0	29
7	60	14	3	75	43	0	43
8	64	14	4	63	46	0	46
9	65	14	1	80	50	0	50
10	66	15	2	48	49	0	49
11	64	15	9	34	40	0	40
12	57	15	6	0	36	0	36
13	47	15	4	6	28	0	28
14	36	16	0	0	20	0	20
15	31	16	0	0	15	0	15
16	20	16	0	0	4	0	4
17	16	16	0	61	0	0	0
18	23	16	0	47	7	0	7
19	46	17	0	68	29	0	29
20	60	17	0	1	43	0	43
21	50	17	0	49	33	0	33
22	43	17	0	69	26	0	26
23	55	17	0	65	38	0	38
24	60	18	0	13	42	0	42
25	50	18	3	45	29	0	29
26	41	18	0	53	23	0	23
27	45	18	0	49	27	0	27
28	54	18	0	56	36	0	36
29	65	19	0	65	46	0	46
30	71	19	0	69	52	0	52
31	75	19	0	53	56	0	56
Total (cfs)	1,790	492	437	1,278	861	1,237	861
(acre-feet)	3,550	976	867	2,536	1,708	2,454	1,708

TABLE G-1

SAN JACINTO WATERSHED DISCHARGE CALCULATIONS
WATER YEAR 2005-06
FEBRUARY 2006

Day	[1] Temescal Creek Flow	[2] Temescal Creek Base Flow	[3] Scalped Storm Flow	[4] EMWD Discharge to Temescal Creek	[5] San Jacinto Watershed Outflow At Prado	[6] Santa Ana River Flow Lost to the Ocean	[7] San Jacinto Outflow Recharged by OCWD
1	77	19	0	57	58	0	58
2	78	19	0	61	59	0	59
3	79	20	0	35	60	0	60
4	83	20	0	54	64	0	64
5	83	20	0	0	64	0	64
6	72	20	0	0	53	0	53
7	55	20	0	0	36	0	36
8	44	20	0	1	24	0	24
9	39	20	0	4	19	0	19
10	36	20	0	11	16	0	16
11	40	20	0	18	20	0	20
12	49	20	0	18	29	0	29
13	51	21	0	17	31	0	31
14	52	21	0	14	32	0	32
15	56	21	0	24	36	0	36
16	61	21	0	0	41	0	41
17	68	21	10	0	38	0	38
18	74	21	18	0	35	0	35
19	88	21	32	5	35	21	14
20	51	21	5	12	25	0	25
21	51	21	0	27	30	0	30
22	53	21	0	0	32	0	32
23	53	22	0	15	32	0	32
24	53	22	0	8	32	0	32
25	48	22	0	44	27	0	27
26	54	22	0	55	33	0	33
27	289	22	235	64	33	190	0
28	567	22	513	54	32	587	0
Total (cfs)	2,404	573	813	599	1,019	798	933
(acre-feet)	4,768	1,136	1,613	1,188	2,021	1,583	1,851

TABLE G-1

SAN JACINTO WATERSHED DISCHARGE CALCULATIONS
WATER YEAR 2005-06
MARCH 2006

Day	[1] Temescal Creek Flow	[2] Temescal Creek Base Flow	[3] Scalped Storm Flow	[4] EMWD Discharge to Temescal Creek	[5] San Jacinto Watershed Outflow At Prado	[6] Santa Ana River Flow Lost to the Ocean	[7] San Jacinto Outflow Recharged by OCWD
1	142	22	88	47	32	0	32
2	104	22	50	63	32	48	0
3	123	22	50	61	51	377	0
4	85	22	12	53	51	94	0
5	81	23	8	60	50	126	0
6	81	23	8	61	50	136	0
7	91	23	18	63	50	158	0
8	76	23	8	44	45	163	0
9	68	23	6	42	39	164	0
10	64	24	3	20	37	188	0
11	72	24	12	64	36	185	0
12	58	24	2	61	32	159	0
13	60	24	5	80	31	165	0
14	63	24	3	77	36	169	0
15	68	25	3	76	40	159	0
16	72	25	0	61	47	144	0
17	93	25	20	52	48	184	0
18	64	25	10	26	29	159	0
19	49	25	5	25	19	283	0
20	44	26	5	24	13	117	0
21	96	26	44	42	26	241	0
22	50	26	10	64	14	53	0
23	66	26	0	67	40	39	1
24	74	26	0	44	48	43	5
25	76	27	0	58	49	42	7
26	82	27	4	55	51	41	10
27	85	27	20	75	38	40	0
28	347	27	285	66	35	587	0
29	268	27	200	59	41	283	0
30	99	28	30	63	41	55	0
31	90	28	20	7	42	34	8
Total (cfs)	2,891	769	929	1,659	1,193	4,636	63
(acre-feet)	5,734	1,525	1,843	3,290	2,366	9,195	125

TABLE G-1

SAN JACINTO WATERSHED DISCHARGE CALCULATIONS
WATER YEAR 2005-06
APRIL 2006

Day	[1] Temescal Creek Flow	[2] Temescal Creek Base Flow	[3] Scalped Storm Flow	[4] EMWD Discharge to Temescal Creek	[5] San Jacinto Watershed Outflow At Prado	[6] Santa Ana River Flow Lost to the Ocean	[7] San Jacinto Outflow Recharged by OCWD
1	72	28	5	24	39	46	0
2	55	28	0	61	27	40	0
3	70	28	0	66	42	41	1
4	341	29	270	81	42	694	0
5	641	29	570	56	42	2,575	0
6	184	29	115	82	40	3,755	0
7	101	29	35	38	37	1,115	0
8	85	29	20	64	36	266	0
9	83	30	0	64	53	292	0
10	81	30	0	39	51	676	0
11	80	30	0	22	50	951	0
12	69	30	0	22	39	259	0
13	55	30	0	38	25	174	0
14	89	29	30	42	30	276	0
15	83	29	25	60	29	1,005	0
16	82	29	20	63	33	221	0
17	93	29	10	57	54	193	0
18	96	29	10	63	57	132	0
19	96	28	20	62	48	0	48
20	89	28	10	47	51	91	0
21	82	28	4	53	50	97	0
22	78	27	0	70	51	76	0
23	77	27	0	0	50	120	0
24	66	26	0	0	40	96	0
25	45	25	0	26	20	72	0
26	39	24	0	44	15	70	0
27	46	23	0	41	23	99	0
28	58	22	0	48	36	119	0
29	63	21	0	41	42	101	0
30	63	21	0	49	42	97	0
Total (cfs)	3,162	824	1,144	1,423	1,194	13,749	49
(acre-feet)	6,272	1,634	2,269	2,822	2,368	27,271	97

TABLE G-1

SAN JACINTO WATERSHED DISCHARGE CALCULATIONS
WATER YEAR 2005-06
MAY 2006

Day	[1] Temescal Creek Flow	[2] Temescal Creek Base Flow	[3] Scalped Storm Flow	[4] EMWD Discharge to Temescal Creek	[5] San Jacinto Watershed Outflow At Prado	[6] Santa Ana River Flow Lost to the Ocean	[7] San Jacinto Outflow Recharged by OCWD
1	72	20	0	54	52	117	0
2	76	20	0	40	56	114	0
3	71	19	0	24	52	119	0
4	62	19	0	11	43	105	0
5	52	18	0	11	34	114	0
6	44	18	0	32	26	123	0
7	43	17	0	1	26	131	0
8	39	17	0	1	22	161	0
9	30	16	0	1	14	141	0
10	29	16	0	1	13	136	0
11	20	15	0	18	5	62	0
12	16	15	0	0	1	103	0
13	15	14	0	0	1	105	0
14	16	14	0	0	2	107	0
15	14	13	0	0	1	107	0
16	13	13	0	0	0	112	0
17	12	12	0	0	0	110	0
18	10	10	0	0	0	106	0
19	11	11	0	0	0	95	0
20	10	10	0	0	0	62	0
21	9	9	0	0	0	68	0
22	140	10	0	0	0	281	0
23	24	11	0	1	0	60	0
24	17	11	0	0	0	32	0
25	14	11	0	0	0	35	0
26	12	11	0	0	0	15	0
27	11	11	0	0	0	25	0
28	10	10	0	0	0	27	0
29	10	10	0	0	0	22	0
30	13	13	0	0	0	22	0
31	12	12	0	0	0	4	0
Total (cfs)	927	426	0	196	348	2,821	0
(acre-feet)	1,838	845	0	389	690	5,595	0

TABLE G-1

SAN JACINTO WATERSHED DISCHARGE CALCULATIONS
WATER YEAR 2005-06
JUNE 2006

Day	[1] Temescal Creek Flow	[2] Temescal Creek Base Flow	[3] Scalped Storm Flow	[4] EMWD Discharge to Temescal Creek	[5] San Jacinto Watershed Outflow At Prado	[6] Santa Ana River Flow Lost to the Ocean	[7] San Jacinto Outflow Recharged by OCWD
1	12	12	0	0	0	0	0
2	11	11	0	0	0	0	0
3	11	11	0	0	0	0	0
4	11	11	0	0	0	0	0
5	10	10	0	0	0	0	0
6	11	11	0	20	0	0	0
7	12	12	0	21	0	0	0
8	12	12	0	12	0	0	0
9	18	12	0	18	6	0	6
10	24	12	0	14	12	0	12
11	28	12	0	20	16	0	16
12	29	12	0	0	17	0	17
13	26	12	0	0	14	0	14
14	19	12	0	0	7	0	7
15	15	12	0	0	3	0	3
16	13	12	0	0	1	0	1
17	12	12	0	0	0	0	0
18	11	11	0	0	0	0	0
19	11	11	0	0	0	0	0
20	11	11	0	0	0	0	0
21	10	10	0	0	0	0	0
22	9	9	0	0	0	0	0
23	7	7	0	0	0	0	0
24	7	7	0	0	0	0	0
25	7	7	0	0	0	0	0
26	8	8	0	0	0	0	0
27	8	8	0	0	0	0	0
28	7	7	0	0	0	0	0
29	6	6	0	0	0	0	0
30	7	7	0	0	0	0	0
Total (cfs)	380	304	0	105	76	0	76
(acre-feet)	754	604	0	208	151	0	151

TABLE G-1

SAN JACINTO WATERSHED DISCHARGE CALCULATIONS
WATER YEAR 2005-06
JULY 2006

Day	[1] Temescal Creek Flow	[2] Temescal Creek Base Flow	[3] Scalped Storm Flow	[4] EMWD Discharge to Temescal Creek	[5] San Jacinto Watershed Outflow At Prado	[6] Santa Ana River Flow Lost to the Ocean	[7] San Jacinto Outflow Recharged by OCWD
1	7	7	0	0	0	0	0
2	8	8	0	0	0	0	0
3	6	6	0	0	0	0	0
4	6	6	0	0	0	0	0
5	7	7	0	0	0	0	0
6	9	9	0	0	0	0	0
7	9	9	0	12	0	0	0
8	6	6	0	12	0	0	0
9	7	7	0	11	0	0	0
10	7	7	0	13	0	0	0
11	7	7	0	1	0	0	0
12	6	6	0	0	0	0	0
13	7	7	0	0	0	0	0
14	6	6	0	0	0	0	0
15	9	9	0	0	0	0	0
16	9	9	0	0	0	0	0
17	7	7	0	0	0	0	0
18	6	6	0	0	0	0	0
19	6	6	0	0	0	0	0
20	6	6	0	0	0	0	0
21	6	6	0	0	0	0	0
22	7	7	0	0	0	0	0
23	7	7	0	0	0	0	0
24	7	7	0	7	0	0	0
25	6	6	0	7	0	0	0
26	6	6	0	5	0	0	0
27	5	5	0	1	0	0	0
28	5	5	0	0	0	0	0
29	6	6	0	0	0	0	0
30	7	7	0	0	0	0	0
31	7	7	0	0	0	0	0
Total (cfs)	207	207	0	68	0	0	0
(acre-feet)	410	410	0	135	0	0	0

TABLE G-1

SAN JACINTO WATERSHED DISCHARGE CALCULATIONS
WATER YEAR 2005-06
AUGUST 2006

Day	[1] 0 Temescal Creek Flow	[2] Temescal Creek Base Flow	[3] Scalped Storm Flow	[4] EMWD Discharge to Temescal Creek	[5] San Jacinto Watershed Outflow At Prado	[6] Santa Ana River Flow Lost to the Ocean	[7] San Jacinto Outflow Recharged by OCWD
1	7	7	0	0	0	0	0
2	6	6	0	0	0	0	0
3	7	7	0	0	0	0	0
4	6	6	0	0	0	0	0
5	6	6	0	0	0	0	0
6	6	6	0	0	0	0	0
7	7	7	0	0	0	0	0
8	6	6	0	0	0	0	0
9	5	5	0	0	0	0	0
10	5	5	0	0	0	0	0
11	5	5	0	0	0	0	0
12	4	4	0	0	0	0	0
13	5	5	0	0	0	0	0
14	5	5	0	0	0	0	0
15	6	6	0	0	0	0	0
16	5	5	0	0	0	0	0
17	5	5	0	0	0	0	0
18	4	4	0	0	0	0	0
19	5	5	0	0	0	0	0
20	5	5	0	0	0	0	0
21	6	6	0	0	0	0	0
22	5	5	0	0	0	0	0
23	5	5	0	0	0	0	0
24	5	5	0	0	0	0	0
25	8	8	0	0	0	0	0
26	5	5	0	0	0	0	0
27	6	6	0	0	0	0	0
28	5	5	0	0	0	0	0
29	4	4	0	0	0	0	0
30	5	5	0	0	0	0	0
31	7	7	0	0	0	0	0
Total (cfs)	171	171	0	0	0	0	0
(acre-feet)	339	339	0	0	0	0	0

TABLE G-1

SAN JACINTO WATERSHED DISCHARGE CALCULATIONS
WATER YEAR 2005-06
SEPTEMBER 2006

Day	[1] 0 Temescal Creek Flow	[2] Temescal Creek Base Flow	[3] Scalped Storm Flow	[4] EMWD Discharge to Temescal Creek	[5] San Jacinto Watershed Outflow At Prado	[6] Santa Ana River Flow Lost to the Ocean	[7] San Jacinto Outflow Recharged by OCWD
1	5	5	0	0	0	0	0
2	6	6	0	0	0	0	0
3	6	6	0	0	0	0	0
4	6	6	0	0	0	0	0
5	6	6	0	0	0	0	0
6	8	8	0	0	0	0	0
7	7	7	0	0	0	0	0
8	5	5	0	0	0	0	0
9	6	6	0	0	0	0	0
10	7	7	0	0	0	0	0
11	9	9	0	0	0	0	0
12	8	8	0	0	0	0	0
13	10	10	0	0	0	0	0
14	10	10	0	0	0	0	0
15	7	7	0	0	0	0	0
16	9	9	0	0	0	0	0
17	6	6	0	0	0	0	0
18	6	6	0	0	0	0	0
19	6	6	0	0	0	0	0
20	8	8	0	0	0	0	0
21	6	6	0	2	0	0	0
22	7	7	0	0	0	0	0
23	5	5	0	10	0	0	0
24	5	5	0	3	0	0	0
25	7	7	0	4	0	0	0
26	5	5	0	7	0	0	0
27	4	4	0	3	0	0	0
28	4	4	0	0	0	0	0
29	4	4	0	6	0	0	0
30	4	4	0	1	0	0	0
Total (cfs)	191	191	0	36	0	0	0
(acre-feet)	379	379	0	71	0	0	0

TABLE G-1

SAN JACINTO WATERSHED DISCHARGE CALCULATIONS
WATER YEAR 2005-06

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1. USGS measured flow of Temescal Creek above Main St. at Corona, which can be found in Appendix A.

2. Temescal base flow was assumed to be the flow present when there are no sources of non-tributary flow and there has been no precipitation to cause storm flow.

3. Temescal Creek flow attributed to storm events.

4. Eastern Municipal Water District wastewater discharge to Temescal Creek at Wasson Canyon.

5. Flow in Temescal Creek at Corona attributed to EMWD discharge of wastewater to Temescal Creek.

6. Flow of the Santa Ana River at Ball Road has historically been lost to the ocean. OCWD Forebay Operations currently sink up to 35 cfs between Ball Road and Orangewood Avenue. Therefore, the Ball Road figure minus 35 cfs was used for "Santa Ana River Flow Lost to the Ocean."

7. When the Santa Ana River flow lost to the ocean is greater than the San Jacinto watershed outflow reaching Prado Dam, it is assumed that no San Jacinto watershed outflow could be recharged by OCWD. When San Jacinto watershed outflow reaching Prado Dam was greater than the Santa Ana River flow lost to the ocean, San Jacinto watershed outflow recharged by OCWD was calculated as the differenced between the two.

TABLE G-2

SUMMARY OF SAN JACINTO WATERSHED DISCHARGE
WATER YEAR 2005-06

MONTHLY TOTALS

Month	EMWD Discharge to Temescal Creek	San Jacinto Watershed Outflow At Prado	Santa Ana River Flow Lost to the Ocean	San Jacinto Outflow Recharged By OCWD
2005				
October	1,093	647	302	579
November	937	995	0	995
December	2	36	232	36
2006				
January	1,278	861	1,237	861
February	599	1,019	798	933
March	1,659	1,193	4,636	63
April	1,423	1,194	13,749	49
May	196	348	2,821	0
June	105	76	0	76
July	68	0	0	0
August	0	0	0	0
September	36	0	0	0
Total (cfs)	7,396	6,369	23,775	3,592
(acre-feet)	14,669	12,631	47,157	7,124

TABLE G-3

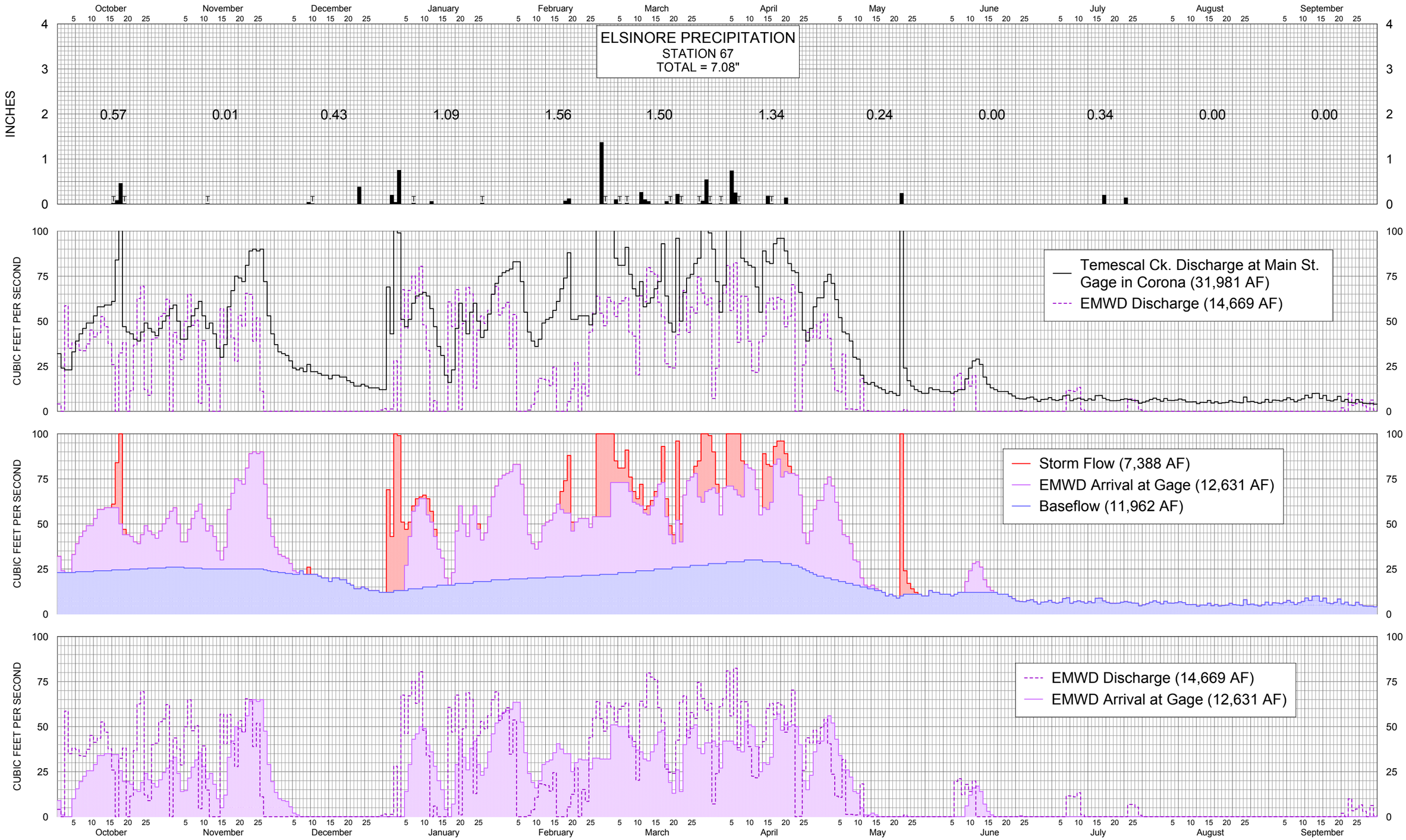
SUMMARY OF FLOW-WEIGHTED AVERAGE TDS
OF SAN JACINTO WATERSHED DISCHARGE
CALCULATED TO REACH PRADO RESERVOIR
WATER YEAR 2005-06

Month	EMWD Discharge to Temescal Creek [1] (acre-feet)	EMWD Discharge TDS [2] (mg/L)	95% of EMWD Discharge [3] (acre-feet)	EMWD Flow at Prado Reservoir x TDS
2005				
October	2,167	750	2,059	1,625,295
November	1,859	690	1,766	1,282,537
December	5	740	5	3,640
2006				
January	2,536	725	2,409	1,838,474
February	1,188	683	1,129	811,512
March	3,290	730	3,126	2,401,716
April	2,822	740	2,680	2,087,929
May	389	730	369	283,722
June	208	730	197	151,714
July	135	720	129	97,453
August	0	---	0	---
September	71	753	67	53,365
Total	14,669		13,936	10,637,358

Flow-weighted TDS at Discharge [4] = 725 mg/L

Flow-weighted TDS of Discharge with 5% Evaporation [5] = 763 mg/L

(1) Actual EMWD discharge to Temescal Creek at Wasson Canyon.
(2) Monthly Average TDS of EMWD Surface Water Discharge to Wasson Canyon.
(3) EMWD discharge assuming 5% evaporation.
(4) Water quality for EMWD discharge at Wasson Canyon =
(Sum of Monthly Discharge Volume X Discharge TDS)/Total Discharge Volume.
(5) Water quality for EMWD discharge arriving at Prado reservoir =
(Sum of Monthly Discharge Volume X Discharge TDS)/95% of Total Discharge Volume.



DISCHARGE OF TEMESCAL CREEK AT MAIN STREET IN CORONA, EMWD DISCHARGE, AND ELSINORE PRECIPITATION
WATER YEAR 2005-06

APPENDIX H

WATER QUALITY AND DISCHARGE OF THE SANTA ANA RIVER BELOW PRADO DAM

WATER YEAR 2005-06

TABLE H-1

WATER QUALITY SAMPLES BELOW PRADO DAM
WATER YEAR 2005-06

Date	EC (microsiemens/cm)	TDS (mg/L)	Source
10/01/05	950	578	USGS
10/20/05	621	368	OCWD
10/21/05	570	354	USGS
11/01/05	980	589	USGS
11/14/05	1,210	726	USGS
11/15/05	1,120	628	OCWD
12/05/05	1,090	664	USGS
12/13/05	1,010	582	OCWD
12/15/05	1,010	622	USGS
01/06/06	530	394	USGS
01/17/06	914	544	OCWD
01/19/06	950	587	USGS
02/01/06	1,140	747	USGS
02/17/06	1,150	719	USGS
02/21/06	846	534	OCWD
03/10/06	678	434	USGS
03/21/06	817	460	OCWD
03/27/06	730	446	USGS
04/03/06	780	481	USGS
04/18/06	620	384	USGS
04/18/06	591	328	OCWD
05/05/06	703	417	USGS
05/16/06	764	484	OCWD
05/23/06	798	490	OCWD
05/26/06	799	488	USGS
06/02/06	854	517	USGS
06/14/06	975	594	USGS
06/20/06	925	574	OCWD
07/05/06	980	598	USGS
07/18/06	1,090	659	USGS
07/18/06	1,100	668	OCWD
08/01/06	1,010	626	OCWD
08/07/06	1,000	615	USGS
08/08/06	1,020	598	OCWD
08/15/06	993	622	OCWD
08/16/06	1,010	620	USGS
08/22/06	1,030	610	OCWD
08/29/06	1,030	610	OCWD
09/01/06	1,000	628	USGS
09/19/06	1,040	640	OCWD
09/22/06	990	602	USGS

TABLE H-2

SUMMARY OF FLOW WEIGHTED TDS BELOW PRADO DAM
WATER YEAR 2005-06

OCTOBER 2005

Day	Prado Outflow (cfs)	Daily Mean EC (microsiemens/cm)	Computed TDS [1]	Outflow X TDS
1	255	916	565	144,029
2	257	895	552	141,830
3	268	887	547	146,579
4	275	892	550	151,255
5	247	962	593	146,516
6	240	946	583	139,996
7	247	904	557	137,683
8	249	---	---	---
9	258	---	---	---
10	253	---	---	---
11	226	---	---	---
12	120	---	---	---
13	268	---	---	---
14	247	1,010	623	153,827
15	227	1,000	617	139,971
16	252	893	551	138,760
17	227	656	404	91,821
18	206	731	451	92,853
19	269	676	417	112,128
20	313	645	398	124,485
21	323	597	368	118,902
22	325	606	374	121,442
23	325	684	422	137,073
24	332	691	426	141,459
25	360	748	461	166,042
26	364	796	491	178,660
27	370	846	522	193,013
28	372	873	538	200,249
29	372	879	542	201,625
30	372	927	572	212,636
31	368	947	584	214,888
Total	7,413 [2]			3,747,723

Monthly Flow Weighted TDS[2] = 506 mg/L

1. TDS = EC x 0.616614

2. Prado Outflow Total and Flow Weighted TDS exclude days when EC data was missing.

TABLE H-2 (continued)

SUMMARY OF FLOW WEIGHTED TDS BELOW PRADO DAM
WATER YEAR 2005-06

NOVEMBER 2005

Day	Prado Outflow (cfs)	Daily Mean EC (microsiemens/cm)	Computed TDS [1]	Outflow X TDS
1	367	980	604	221,771
2	367	1,010	623	228,560
3	366	1,030	635	232,451
4	363	1,040	641	232,784
5	359	1,060	654	234,646
6	356	1,100	678	241,466
7	355	1,130	697	247,355
8	362	1,160	715	258,929
9	367	1,200	740	271,557
10	367	1,230	758	278,346
11	367	1,240	765	280,609
12	364	---	---	---
13	359	---	---	---
14	188	---	---	---
15	100	---	---	---
16	99	---	---	---
17	156	---	---	---
18	261	---	---	---
19	258	---	---	---
20	261	---	---	---
21	268	---	---	---
22	289	---	---	---
23	303	---	---	---
24	302	---	---	---
25	303	---	---	---
26	307	---	---	---
27	310	---	---	---
28	313	---	---	---
29	211	---	---	---
30	117	---	---	---
Total	3,996 [2]			2,728,474

Monthly Flow Weighted TDS[2] = 683 mg/L

1. TDS = EC x 0.616614

2. Prado Outflow Total and Flow Weighted TDS exclude days when EC data was missing.

TABLE H-2 (continued)

SUMMARY OF FLOW WEIGHTED TDS BELOW PRADO DAM
WATER YEAR 2005-06

DECEMBER 2005

Day	Prado Outflow (cfs)	Daily Mean EC (microsiemens/cm)	Computed TDS [1]	Outflow X TDS
1	178	---	---	---
2	279	---	---	---
3	274	---	---	---
4	257	---	---	---
5	246	---	---	---
6	202	1,040	641	129,538
7	285	1,010	623	177,492
8	289	999	616	178,023
9	296	1,050	647	191,644
10	294	1,020	629	184,910
11	292	1,010	623	181,852
12	260	995	614	159,518
13	283	989	610	172,582
14	291	1,000	617	179,435
15	284	1,010	623	176,870
16	284	1,030	635	180,372
17	378	1,030	635	240,073
18	365	1,000	617	225,064
19	352	919	567	199,467
20	339	917	565	191,682
21	342	902	556	190,216
22	340	893	551	187,216
23	328	887	547	179,395
24	314	896	552	173,481
25	303	894	551	167,030
26	281	905	558	156,808
27	255	893	551	140,412
28	236	882	544	128,349
29	197	865	533	105,074
30	169	937	578	97,643
31	178	919	567	100,867
Total	7,437 [2]			4,395,013

Monthly Flow Weighted TDS[2] = 591 mg/L

1. TDS = EC x 0.616614

2. Prado Outflow Total and Flow Weighted TDS exclude days when EC data was missing.

TABLE H-2 (continued)

SUMMARY OF FLOW WEIGHTED TDS BELOW PRADO DAM
WATER YEAR 2005-06

JANUARY 2006

Day	Prado Outflow (cfs)	Daily Mean EC (microsiemens/cm)	Computed TDS [1]	Outflow X TDS
1	203	576	355	72,099
2	210	624	385	80,801
3	816	606	374	304,913
4	666	524	323	215,188
5	322	554	342	109,997
6	294	568	350	102,970
7	291	643	396	115,376
8	286	675	416	119,037
9	278	691	426	118,450
10	274	765	472	129,248
11	273	837	516	140,897
12	297	867	535	158,777
13	305	908	560	170,765
14	305	907	559	170,577
15	302	930	573	173,182
16	300	894	551	165,376
17	343	934	576	197,540
18	365	968	597	217,862
19	362	962	593	214,732
20	358	958	591	211,476
21	353	992	612	215,923
22	359	967	596	214,059
23	276	956	589	162,697
24	262	964	594	155,737
25	356	957	590	210,075
26	357	964	594	212,206
27	353	980	604	213,311
28	352	1,010	623	219,219
29	354	1,030	635	224,830
30	355	1,040	641	227,654
31	355	1,040	641	227,654
Total	10,582			5,472,633

Monthly Flow Weighted TDS = 517 mg/L

1. TDS = EC x 0.616614

TABLE H-2 (continued)

SUMMARY OF FLOW WEIGHTED TDS BELOW PRADO DAM
WATER YEAR 2005-06

FEBRUARY 2006

Day	Prado Outflow (cfs)	Daily Mean EC (microsiemens/cm)	Computed TDS [1]	Outflow X TDS
1	356	1,060	654	232,685
2	371	1,030	635	235,627
3	376	1,030	635	238,802
4	378	1,010	623	235,411
5	382	1,030	635	242,613
6	383	1,050	647	247,971
7	380	1,060	654	248,372
8	345	1,040	641	221,241
9	397	1,050	647	257,036
10	386	1,060	654	252,294
11	371	1,080	666	247,065
12	339	1,090	672	227,845
13	304	1,090	672	204,321
14	254	1,120	691	175,414
15	243	1,110	684	166,319
16	197	1,110	684	134,835
17	202	1,130	697	140,748
18	249	889	548	136,494
19	271	813	501	135,854
20	285	705	435	123,893
21	322	737	454	146,331
22	332	816	503	167,048
23	348	872	538	187,115
24	359	896	552	198,343
25	339	911	562	190,428
26	305	921	568	173,210
27	199	937	578	114,976
28	372	683	421	156,667
Total	9,045			5,438,960
		Monthly Flow Weighted TDS =	601	mg/L

1. TDS = EC x 0.616614

TABLE H-2 (continued)

SUMMARY OF FLOW WEIGHTED TDS BELOW PRADO DAM
WATER YEAR 2005-06

MARCH 2006

Day	Prado Outflow (cfs)	Daily Mean EC (microsiemens/cm)	Computed TDS [1]	Outflow X TDS
1	572	546	337	192,576
2	540	564	348	187,796
3	491	567	350	171,663
4	489	593	366	178,804
5	486	623	384	186,697
6	503	611	377	189,506
7	515	605	373	192,122
8	513	637	393	201,498
9	507	654	403	204,456
10	502	675	416	208,940
11	512	677	417	213,733
12	505	703	433	218,907
13	498	699	431	214,645
14	486	707	436	211,870
15	486	712	439	213,368
16	460	711	438	201,670
17	453	721	445	201,394
18	462	740	456	210,808
19	482	757	467	224,986
20	496	741	457	226,628
21	482	757	467	224,986
22	462	748	461	213,087
23	453	716	441	199,998
24	452	723	446	201,507
25	451	734	453	204,120
26	434	---	---	---
27	406	---	---	---
28	407	646	398	162,121
29	452	630	388	175,587
30	468	507	313	146,308
31	477	562	347	165,298
Total	14,062 [2]			5,745,078

Monthly Flow Weighted TDS[2] = 409 mg/L

1. TDS = EC x 0.616614

2. Prado Outflow Total and Flow Weighted TDS exclude days when EC data was missing.

TABLE H-2 (continued)

SUMMARY OF FLOW WEIGHTED TDS BELOW PRADO DAM
WATER YEAR 2005-06

APRIL 2006

Day	Prado Outflow (cfs)	Daily Mean EC (microsiemens/cm)	Computed TDS [1]	Outflow X TDS
1	488	651	401	195,891
2	504	741	457	230,283
3	527	758	467	246,316
4	564	727	448	252,829
5	3,310	592	365	1,208,267
6	2,980	401	247	736,841
7	1,240	376	232	287,490
8	688	406	250	172,238
9	685	453	279	191,338
10	1,120	487	300	336,326
11	1,200	515	318	381,067
12	648	568	350	226,953
13	543	576	355	192,857
14	577	561	346	199,596
15	1,310	537	331	433,769
16	638	577	356	226,992
17	568	575	355	201,386
18	403	630	388	156,552
19	376	725	447	168,089
20	476	677	417	198,705
21	448	663	409	183,149
22	457	647	399	182,320
23	454	675	416	188,961
24	459	747	461	211,420
25	460	757	467	214,717
26	456	758	467	213,131
27	464	759	468	217,157
28	475	769	474	225,234
29	469	771	475	222,967
30	473	757	467	220,785
Total	18,369			8,323,630
		Monthly Flow Weighted TDS =	453	mg/L

1. TDS = EC x 0.616614

TABLE H-2 (continued)

SUMMARY OF FLOW WEIGHTED TDS BELOW PRADO DAM
WATER YEAR 2005-06

MAY 2006

Day	Prado Outflow (cfs)	Daily Mean EC (microsiemens/cm)	Computed TDS [1]	Outflow X TDS
1	475	802	495	234,899
2	462	776	478	221,064
3	443	732	451	199,953
4	437	700	432	188,622
5	428	712	439	187,904
6	426	748	461	196,483
7	423	762	470	198,751
8	449	754	465	208,752
9	457	743	458	209,372
10	455	744	459	208,736
11	344	741	457	157,177
12	475	732	451	214,397
13	474	732	451	213,945
14	468	733	452	211,526
15	462	739	456	210,523
16	460	769	474	218,121
17	460	785	484	222,659
18	458	876	540	247,390
19	448	882	544	243,646
20	450	787	485	218,374
21	457	812	501	228,816
22	455	818	504	229,498
23	442	787	485	214,492
24	435	747	461	200,366
25	434	750	462	200,708
26	426	775	478	203,575
27	425	787	485	206,242
28	424	803	495	209,940
29	423	881	543	229,789
30	424	892	550	233,208
31	381	853	526	200,395
Total	12,300			6,569,324
		Monthly Flow Weighted TDS =	534	mg/L

1. TDS = EC x 0.616614

TABLE H-2 (continued)

SUMMARY OF FLOW WEIGHTED TDS BELOW PRADO DAM
WATER YEAR 2005-06

JUNE 2006

Day	Prado Outflow (cfs)	Daily Mean EC (microsiemens/cm)	Computed TDS [1]	Outflow X TDS
1	383	845	521	199,558
2	406	831	512	208,037
3	416	835	515	214,187
4	425	836	515	219,083
5	439	886	546	239,834
6	448	896	552	247,514
7	441	911	562	247,725
8	434	923	569	247,004
9	421	940	580	244,019
10	408	947	584	238,245
11	391	945	583	227,836
12	303	967	596	180,669
13	137	---	---	---
14	229	---	---	---
15	235	---	---	---
16	233	---	---	---
17	229	---	---	---
18	223	---	---	---
19	235	---	---	---
20	235	---	---	---
21	230	908	560	128,774
22	239	910	561	134,107
23	243	912	562	136,652
24	242	915	564	136,537
25	243	917	565	137,401
26	240	921	568	136,296
27	243	929	573	139,199
28	252	929	573	144,354
29	252	934	576	145,131
30	252	936	577	145,442
Total	7,351 [2]			4,097,604

Monthly Flow Weighted TDS[2] = 557 mg/L

1. TDS = EC x 0.616614

2. Prado Outflow Total and Flow Weighted TDS exclude days when EC data was missing.

TABLE H-2 (continued)

SUMMARY OF FLOW WEIGHTED TDS BELOW PRADO DAM
WATER YEAR 2005-06

JULY 2006

Day	Prado Outflow (cfs)	Daily Mean EC (microsiemens/cm)	Computed TDS [1]	Outflow X TDS
1	251	949	585	146,877
2	250	946	583	145,829
3	249	946	583	145,246
4	242	946	583	141,163
5	234	935	577	134,909
6	232	929	573	132,898
7	226	950	586	132,387
8	225	975	601	135,270
9	225	990	610	137,351
10	282	989	610	171,972
11	309	973	600	185,389
12	306	966	596	182,269
13	318	964	594	189,024
14	325	970	598	194,388
15	328	1,010	623	204,272
16	312	1,100	678	211,622
17	249	1,150	709	176,567
18	190	1,040	641	121,843
19	181	966	596	107,812
20	176	954	588	103,532
21	184	954	588	108,238
22	180	920	567	102,111
23	185	923	569	105,290
24	193	914	564	108,772
25	185	940	580	107,229
26	177	966	596	105,430
27	168	967	596	100,173
28	171	963	594	101,540
29	166	981	605	100,413
30	165	980	604	99,706
31	173	965	595	102,941
Total	7,057			4,242,462

Monthly Flow Weighted TDS = 601 mg/L

1. TDS = EC x 0.616614

TABLE H-2 (continued)

SUMMARY OF FLOW WEIGHTED TDS BELOW PRADO DAM
WATER YEAR 2005-06

AUGUST 2006

Day	Prado Outflow (cfs)	Daily Mean EC (microsiemens/cm)	Computed TDS [1]	Outflow X TDS
1	193	967	596	115,079
2	185	973	600	110,994
3	191	978	603	115,182
4	198	984	607	120,136
5	201	980	604	121,461
6	190	981	605	114,931
7	196	975	601	117,835
8	195	998	615	119,999
9	192	976	602	115,549
10	226	996	614	138,797
11	178	1,000	617	109,757
12	188	996	614	115,460
13	185	1,010	623	115,214
14	181	1,010	623	112,723
15	179	1,010	623	111,478
16	168	1,000	617	103,591
17	161	988	609	98,084
18	159	967	596	94,806
19	167	971	599	99,988
20	175	983	606	106,073
21	165	985	607	100,215
22	165	980	604	99,706
23	153	975	601	91,983
24	155	1,010	623	96,531
25	157	1,020	629	98,745
26	157	1,020	629	98,745
27	165	998	615	101,538
28	164	995	614	100,619
29	154	1,000	617	94,959
30	154	1,010	623	95,908
31	158	999	616	97,328
Total	5,277			3,333,414
		Monthly Flow Weighted TDS =	632	mg/L

1. TDS = EC x 0.616614

TABLE H-2 (continued)

SUMMARY OF FLOW WEIGHTED TDS BELOW PRADO DAM
WATER YEAR 2005-06

SEPTEMBER 2006

Day	Prado Outflow (cfs)	Daily Mean EC (microsiemens/cm)	Computed TDS [1]	Outflow X TDS
1	164	993	612	100,417
2	165	1,000	617	101,741
3	164	986	608	99,709
4	166	997	615	102,051
5	172	987	609	104,679
6	168	1,000	617	103,591
7	172	1,000	617	106,058
8	186	994	613	114,002
9	184	986	608	111,869
10	185	969	597	110,537
11	184	---	---	---
12	172	---	---	---
13	173	---	---	---
14	170	---	---	---
15	183	---	---	---
16	171	861	531	90,785
17	177	974	601	106,303
18	181	957	590	106,808
19	167	1,010	623	104,004
20	167	1,000	617	102,975
21	174	---	---	---
22	181	---	---	---
23	186	---	---	---
24	195	---	---	---
25	196	---	---	---
26	188	---	---	---
27	189	964	594	112,345
28	189	961	593	111,995
29	177	995	614	108,595
30	171	1,060	654	111,767
Total	3,315			2,010,230

Monthly Flow Weighted TDS[2] = 606 mg/L

1. TDS = EC x 0.616614

2. Prado Outflow Total and Flow Weighted TDS exclude days when EC data was missing.

TABLE H-3

ANNUAL SUMMARY OF FLOW WEIGHTED TDS BELOW PRADO DAM

WATER YEAR 2005-06

Month	Monthly Flow (1) (cfs-days)	Monthly Weighted TDS (1) (mg/L)	Monthly Flow x TDS
2005			
October	7,413	506	3,747,723
November	3,996	683	2,728,474
December	7,437	591	4,395,013
2006			
January	10,582	517	5,472,633
February	9,045	601	5,438,960
March	14,062	409	5,745,078
April	18,369	453	8,323,630
May	12,300	534	6,569,324
June	7,351	557	4,097,604
July	7,057	601	4,242,462
August	5,277	632	3,333,414
September	3,315	606	2,010,230
Total	106,204 (1)		56,104,544
	Yearly Flow-weighted TDS (1) =	528	

1. Prado Outflow Total and Flow Weighted TDS exclude days when EC data was missing.

APPENDIX I

WATER QUALITY AND FLOW OF WASTEWATER FROM RUBIDOUX COMMUNITY SERVICES DISTRICT DISCHARGED BELOW THE RIVERSIDE NARROWS GAGING STATION

WATER YEAR 2005-06

TABLE I-1

QUANTITY AND QUALITY OF WASTEWATER FROM RUBIDOUX
DISCHARGED BELOW THE
RIVERSIDE NARROWS GAGING STATION

WATER YEAR 2005-06

MONTH	Discharge (acre -feet)	TDS (mg/L)	Discharge xTDS
2005			
October	175	704	123,200
November	196	716	140,336
December	196	716	140,336
2006			
January	200	700	140,000
February	178	692	123,176
March	197	720	141,840
April	192	728	139,776
May	199	724	144,076
June	193	680	131,240
July	202	604	122,008
August	198	616	121,968
September	192	576	110,592
Total	2,318		1,578,548

Flow weighted TDS = $\frac{1,578,548}{2,318}$ = 681 mg/L

APPENDIX J

WATER QUALITY AND DISCHARGE OF THE SANTA ANA RIVER AT RIVERSIDE NARROWS

WATER YEAR 2005-06

TABLE J-1

WATER QUALITY SAMPLES AT RIVERSIDE NARROWS
WATER YEAR 2005-06

	Date Sampled	EC (microsiemens/cm)	TDS (mg/L)	Source of Data		Ratio	Average
2005	10/05/05	927	592	C of R		0.64	
	10/12/05	957	599	USGS		0.63	
	10/14/05	961	584	C of R		0.61	
	10/19/05	671	432	C of R	*	0.64	
	10/26/05	930	585	USGS	*	0.63	
	10/28/05	991	604	C of R		0.61	595
	11/01/05	925	597	USGS		0.65	
	11/02/05	988	636	C of R		0.64	
	11/10/05	992	616	C of R		0.62	
	11/16/05	981	596	C of R		0.61	
	11/18/05	922	577	USGS		0.63	
	11/30/05	974	604	C of R		0.62	604
	12/05/05	896	580	USGS		0.65	
	12/09/05	939	592	C of R		0.63	
	12/14/05	988	600	C of R		0.61	
	12/15/05	944	576	USGS		0.61	
	12/22/05	923	580	USGS		0.63	
	12/23/05	1033	628	C of R		0.61	
	12/28/05	1023	652	C of R		0.64	601
2006	01/03/06	538	333	USGS	*	0.62	
	01/06/06	936	556	C of R	*	0.59	
	01/11/06	927	588	C of R		0.63	
	01/18/06	921	575	USGS		0.62	
	01/20/06	1020	632	C of R		0.62	
	01/25/06	991	608	C of R		0.61	601

* Data not used in determining monthly averages; storm flow.
C of R City of Riverside
USGS U.S. Geological Survey

TABLE J-1

WATER QUALITY SAMPLES AT RIVERSIDE NARROWS
WATER YEAR 2005-06

Date Sampled	EC (microsiemens/cm)	TDS (mg/L)	Source of Data		Ratio	Average
02/01/06	1046	612	C of R		0.59	
02/01/06	933	588	USGS		0.63	
02/02/06	1060	632	C of R		0.60	
02/15/06	1058	656	C of R	*	0.62	
02/20/06	1056	652	C of R	*	0.62	
02/22/06	909	577	USGS	*	0.63	611
03/01/06	620	544	C of R	*	0.88	
03/06/06	887	574	USGS	*	0.65	
03/08/06	689	472	C of R	*	0.69	
03/13/06	1030	644	C of R		0.63	
03/22/06	798	584	C of R		0.73	
03/23/06	898	586	USGS		0.65	
03/27/06	1077	660	C of R		0.61	619
04/04/06	904	572	USGS	*	0.63	
04/05/06	251	304	C of R	*	1.21	
04/10/06	1003	324	C of R	*	0.32	
04/18/06	620	384	C of R	*	0.62	
04/19/06	652	412	C of R	*	0.63	
04/24/06	855	540	C of R	*	0.63	
04/24/06	772	476	USGS	*	0.62	*605*
05/03/06	594	396	C of R	*	0.67	
05/05/06	553	341	USGS	*	0.62	
05/08/06	683	448	C of R	*	0.66	
05/17/06	738	464	C of R	*	0.63	
05/22/06	563	408	C of R	*	0.72	
05/22/06	449	291	USGS	*	0.65	
05/31/06	985	620	C of R	*	0.63	*590*

* Data not used in determining monthly averages; storm flow.
C of R City of Riverside
USGS U.S. Geological Survey

TABLE J-1

WATER QUALITY SAMPLES AT RIVERSIDE NARROWS
WATER YEAR 2005-06

Date Sampled	EC (microsiemens/cm)	TDS (mg/L)	Source of Data	Ratio	Average
06/01/06	920	569	USGS	0.62	
06/05/06	934	568	C of R	0.61	
06/14/06	963	560	C of R	0.58	
06/19/06	996	624	C of R	0.63	
06/28/06	983	588	C of R	0.60	
06/28/06	912	551	USGS	0.60	577
07/03/06	1020	644	C of R	0.63	
07/12/06	1032	636	C of R	0.62	
07/12/06	938	590	USGS	0.63	
07/26/06	1040	672	C of R	0.65	
07/26/06	941	574	C of R	0.61	
07/31/06	991	624	C of R	0.63	623
08/07/06	945	604	C of R	0.64	
08/08/06	859	518	USGS	0.60	
08/16/06	987	612	C of R	0.62	
08/21/06	1014	632	C of R	0.62	
08/28/06	905	567	USGS	0.63	
08/30/06	1007	612	C of R	0.61	591
09/06/06	1024	652	C of R	0.64	
09/11/06	1019	612	C of R	0.60	
09/11/06	953	586	USGS	0.61	
09/20/06	949	584	C of R	0.62	
09/25/06	954	624	C of R	0.65	
09/25/06	905	561	USGS	0.62	603

* Data not used in determining monthly averages; storm flow.
C of R City of Riverside
USGS U.S. Geological Survey

TABLE J-2

ANNUAL SUMMARY OF FLOW WEIGHTED TDS AT RIVERSIDE NARROWS
WATER YEAR 2005-06

	Month	Stream Flow [1] (acre-feet)	Monthly Average TDS [2] (mg/L)	Monthly Flow x TDS
2005	October	5,841	595	3,474,125
	November	5,365	604	3,242,421
	December	6,966	601	4,187,390
2006	January	5,928	601	3,561,246
	February	6,165	611	3,764,760
	March	6,360	619	3,933,674
	April	5,981	605 [3]	3,618,505
	May	5,470	590 [3]	3,227,300
	June	4,504	577	2,597,572
	July	3,695	623	2,303,217
	August	5,270	591	3,113,692
	September	4,024	603	2,427,421
	Total Stream Flow	65,570		39,451,322

$$\text{Flow-weighted TDS} = \frac{39,451,322}{65,570} = 602 \text{ mg/L}$$

(1) USGS measured flow minus storm flow.

(2) TDS based on water quality data from Table J-1.

(3) During months of storm flow, base flow quality is a straight line estimate based on the previous month average quality with the following month average.

APPENDIX K

WMWD-OCWD TRANSFER PROGRAM WATER DISCHARGED TO THE SANTA ANA RIVER ABOVE RIVERSIDE NARROWS

WATER YEAR 2005-06

TABLE K-1

WMWD-OCWD TRANSFER PROGRAM WATER
DISCHARGED TO THE SANTA ANA RIVER ABOVE RIVERSIDE NARROWS
WATER YEAR 2005-06
(acre-feet)

Month	Discharge Above Riverside Narrows[1]	Flow Arriving At Riverside Narrows[1]	Flow Arriving At Prado Dam [1]
2005			
October	0	0	0
November	0	0	0
December	0	0	0
2006			
January	0	0	0
February	0	0	0
March	0	0	0
April	0	0	0
May	0	0	0
June	0	0	0
July	0	0	0
August	336	336	336
September	391	391	391
Total	727	727	727

(1) Unadjusted for evapotranspiration loss per agreement between WMWD and OCWD.

TABLE K-2

WMWD-OCWD TRANSFER PROGRAM WATER
DISCHARGED TO THE SANTA ANA RIVER ABOVE RIVERSIDE NARROWS
WATER YEAR 2005-06
AUGUST 2006

Day	Discharge Above Riverside Narrows (cfs)	Flow Arriving At Riverside Narrows[1] (cfs)	Flow Arriving At Prado Dam[1] (cfs)
1	0.0	0.0	0.0
2	0.0	0.0	0.0
3	0.0	0.0	0.0
4	4.8	4.8	4.8
5	7.4	7.4	7.4
6	7.4	7.4	7.4
7	7.4	7.4	7.4
8	7.9	7.9	7.9
9	7.9	7.9	7.9
10	5.6	5.6	5.6
11	4.6	4.6	4.6
12	6.4	6.4	6.4
13	6.4	6.4	6.4
14	6.4	6.4	6.4
15	5.4	5.4	5.4
16	1.2	1.2	1.2
17	10.2	10.2	10.2
18	5.8	5.8	5.8
19	5.8	5.8	5.8
20	5.8	5.8	5.8
21	5.8	5.8	5.8
22	5.8	5.8	5.8
23	5.9	5.9	5.9
24	5.8	5.8	5.8
25	5.5	5.5	5.5
26	5.8	5.8	5.8
27	5.8	5.8	5.8
28	5.8	5.8	5.8
29	5.4	5.4	5.4
30	5.6	5.6	5.6
31	5.6	5.6	5.6
Total in cfs-days	169.2	169.2	169.2
Total in AF	336	336	336

(1) Unadjusted for evapotranspiration loss per agreement between WMWD and OCWD.

TABLE K-2 (continued)

WMWD-OCWD TRANSFER PROGRAM WATER
DISCHARGED TO THE SANTA ANA RIVER ABOVE RIVERSIDE NARROWS
WATER YEAR 2005-06
SEPTEMBER 2006

Day	Discharge Above Riverside Narrows (cfs)	Flow Arriving At Riverside Narrows[1] (cfs)	Flow Arriving At Prado Dam[1] (cfs)
1	7.7	7.7	7.7
2	8.0	8.0	8.0
3	8.0	8.0	8.0
4	8.0	8.0	8.0
5	7.7	7.7	7.7
6	7.9	7.9	7.9
7	5.6	5.6	5.6
8	5.6	5.6	5.6
9	5.6	5.6	5.6
10	11.8	11.8	11.8
11	11.8	11.8	11.8
12	7.6	7.6	7.6
13	4.0	4.0	4.0
14	14.4	14.4	14.4
15	5.1	5.1	5.1
16	6.6	6.6	6.6
17	6.6	6.6	6.6
18	6.6	6.6	6.6
19	8.0	8.0	8.0
20	8.0	8.0	8.0
21	7.6	7.6	7.6
22	8.2	8.2	8.2
23	4.5	4.5	4.5
24	4.5	4.5	4.5
25	4.5	4.5	4.5
26	4.5	4.5	4.5
27	4.3	4.3	4.3
28	4.5	4.5	4.5
29	0.0	0.0	0.0
30	0.0	0.0	0.0
Total in cfs-days	197.3	197.3	197.3
Total in AF	391	391	391

(1) Unadjusted for evapotranspiration loss per agreement between WMWD and OCWD.

TABLE K-3

SUMMARY OF TDS OF WMWD-OCWD TRANSFER PROGRAM WATER DISCHARGED TO THE SANTA ANA RIVER ABOVE RIVERSIDE NARROWS WATER YEAR 2005-06

Month	WMWD Transfer Program Discharge (acre-feet)	TDS[1] (mg/L)	Discharge x TDS
2005			
October	0	---	0
November	0	---	0
December	0	---	0
2006			
January	0	---	0
February	0	---	0
March	0	---	0
April	0	---	0
May	0	---	0
June	0	---	0
July	0	---	0
August	336	273	91,625
September	391	326	127,557
Total	727		219,182

Flow-weighted TDS of pumped groundwater releases to the Santa Ana River:[2]

$$\text{TDS} = \frac{219{,}182}{727} = 302 \text{ mg/L}$$

(1) Water quality data is from the OCWD gauging station on Riverside Canal located just east of the 91 freeway, 0.5 miles north of Ivy St. in Riverside.

(2) Unadjusted for evaporation loss per agreement between WMWD and OCWD.