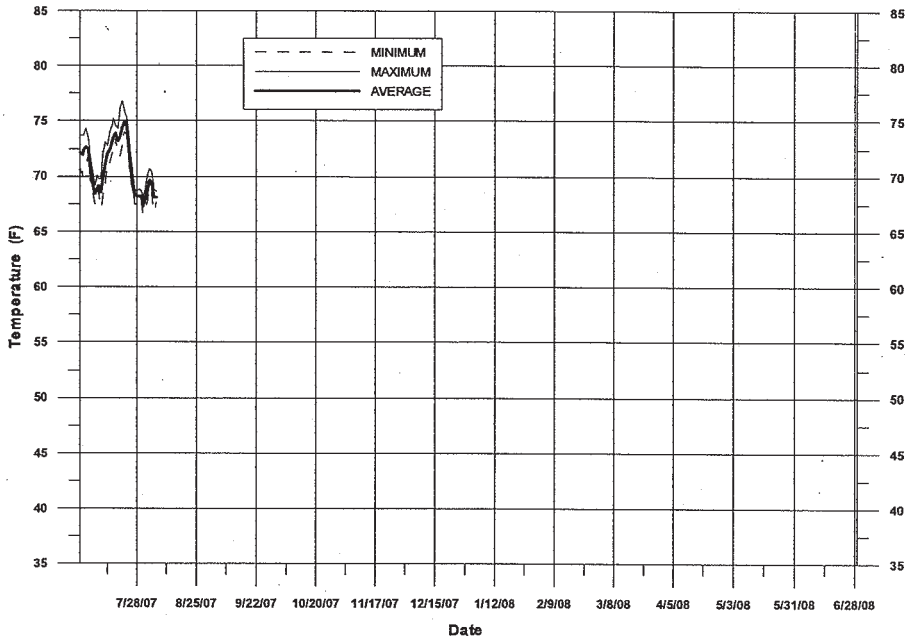
Figure II-11
Daily temperatures recorded from a continuous temperature data logger at the South Arm Lagoon (SAL) station during RY 2008.



***Note**: data logger error began 08/07/07*

Figure II-12
Daily temperatures recorded from a continuous temperature data logger at the Garland Park (GAR) station during RY 2008.

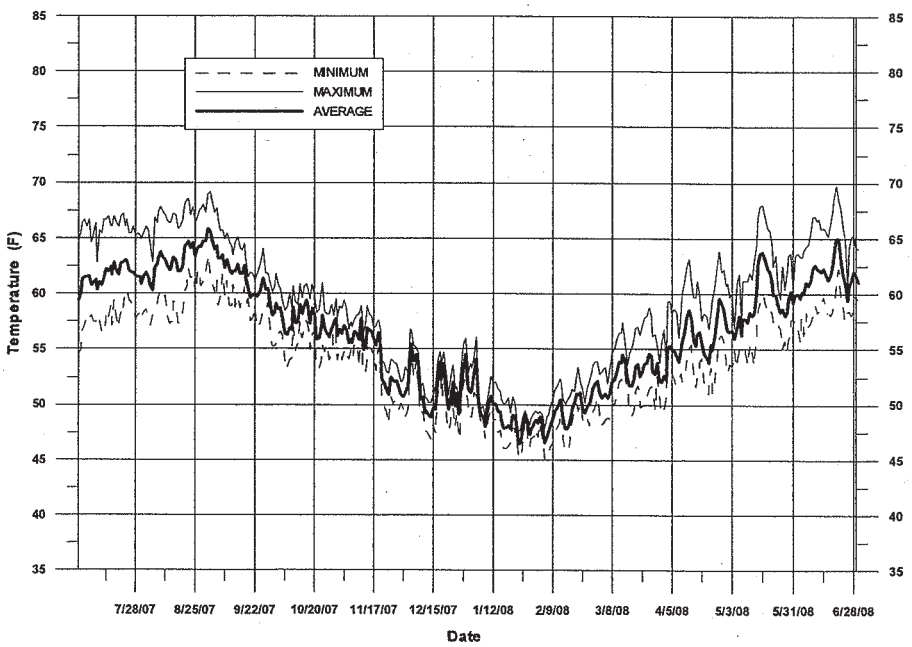


Figure II-13
Daily Temperatures Recorded from a Continuous Temperature Data Logger at the Sleepy Hollow Weir (SHW) Station During RY 2008

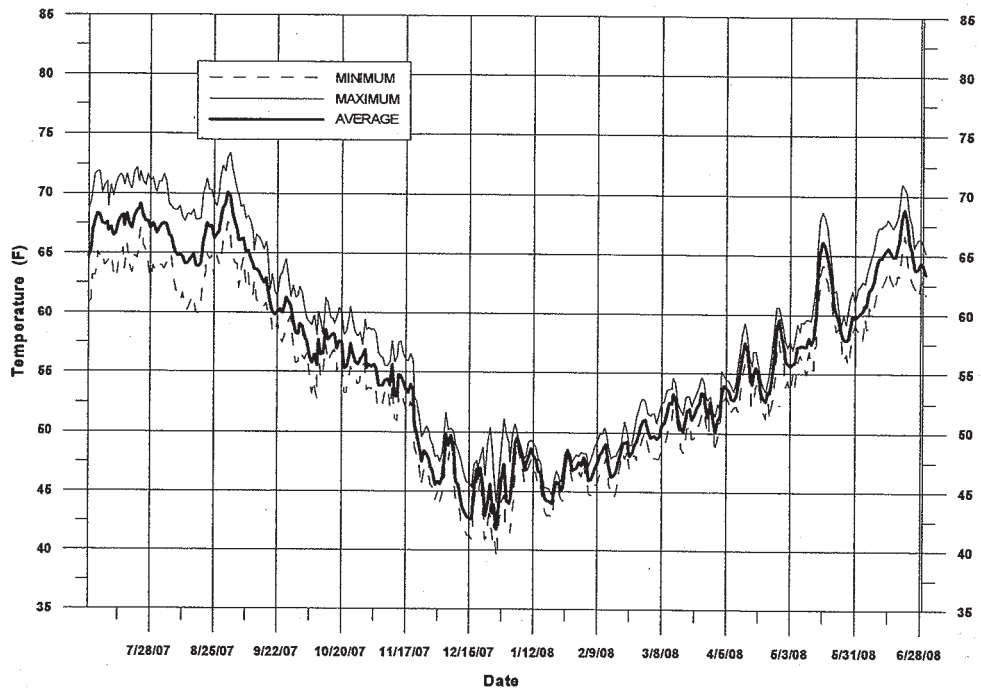


Figure II-14
Daily Temperatures Recorded From a Continuous Temperature Data Logger at the Above San Clemente (ASC) Station During RY 2008

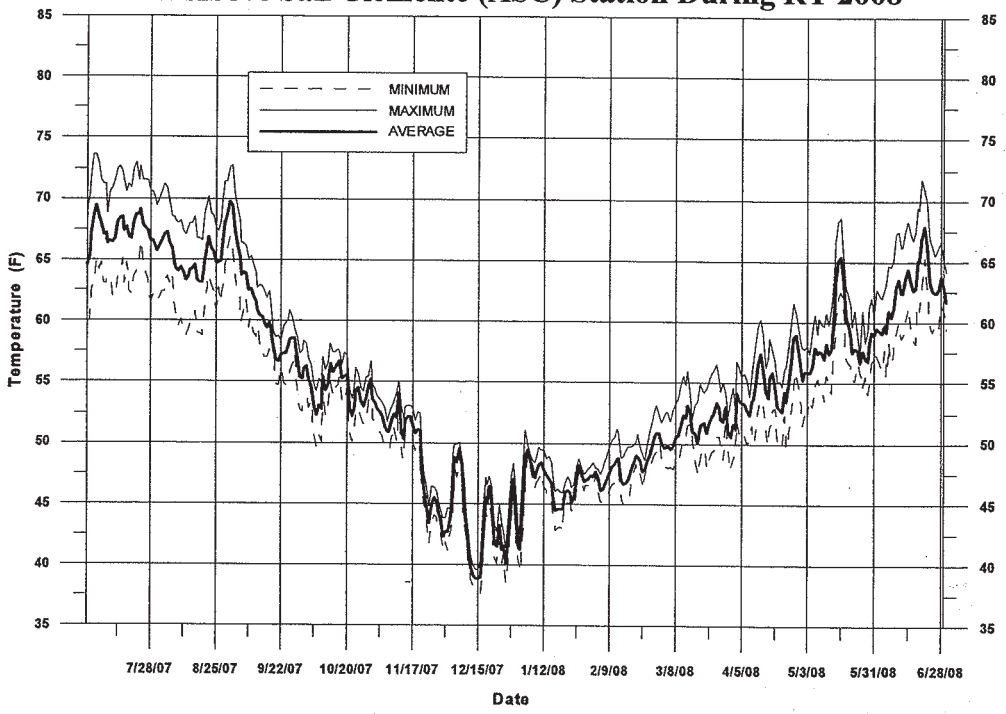


Figure II-15
Daily Temperatures Recorded from a Continuous Temperature Data Logger at the Below Los Padres (BLP) Station During RY 2008

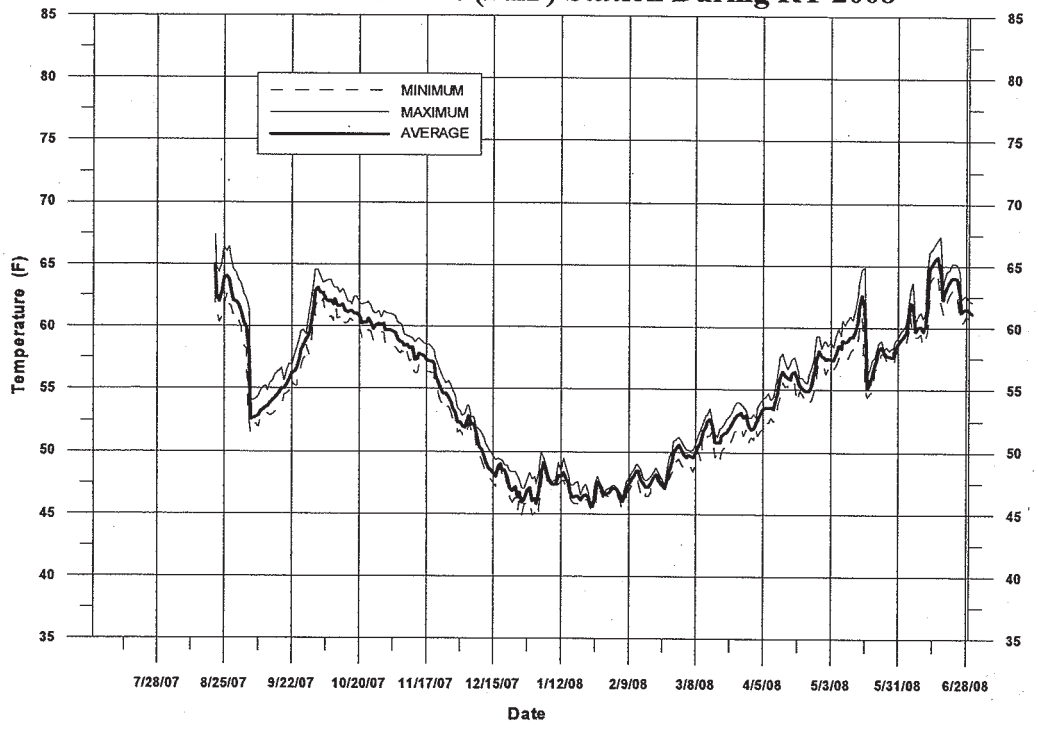


Figure II-16
Daily Temperatures Recorded from a Continuous Temperature Data Logger at the Above Los Padres (ALP) Station During RY 2008

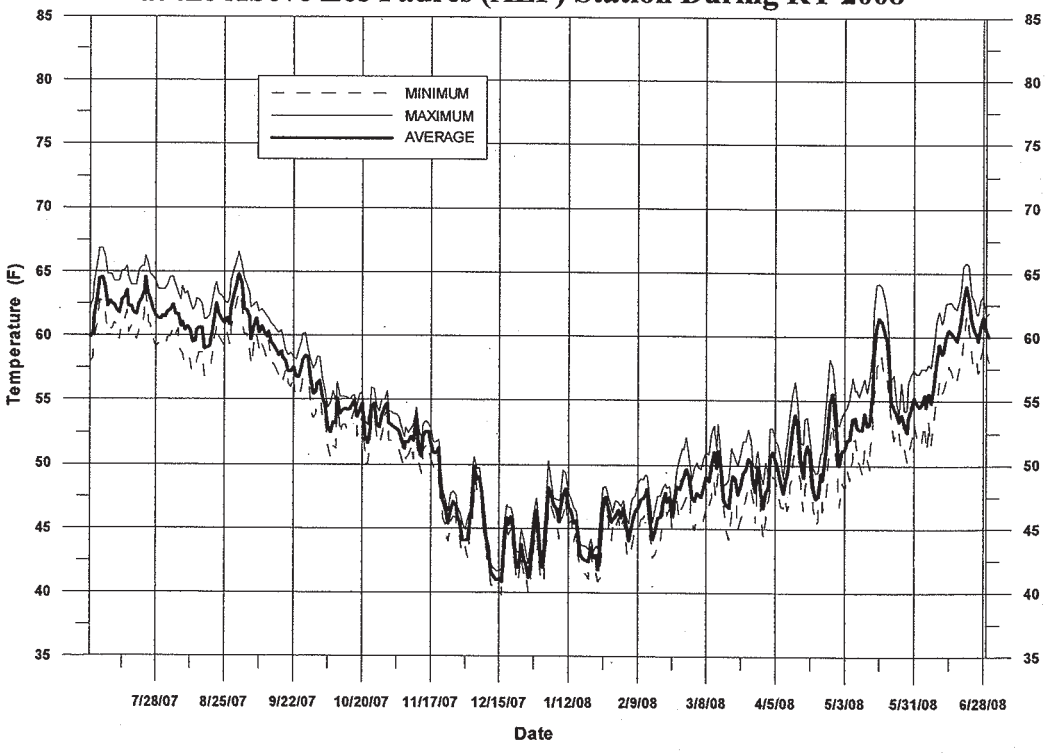


Figure II-17
Carmel River Lagoon Water Level: January 2008

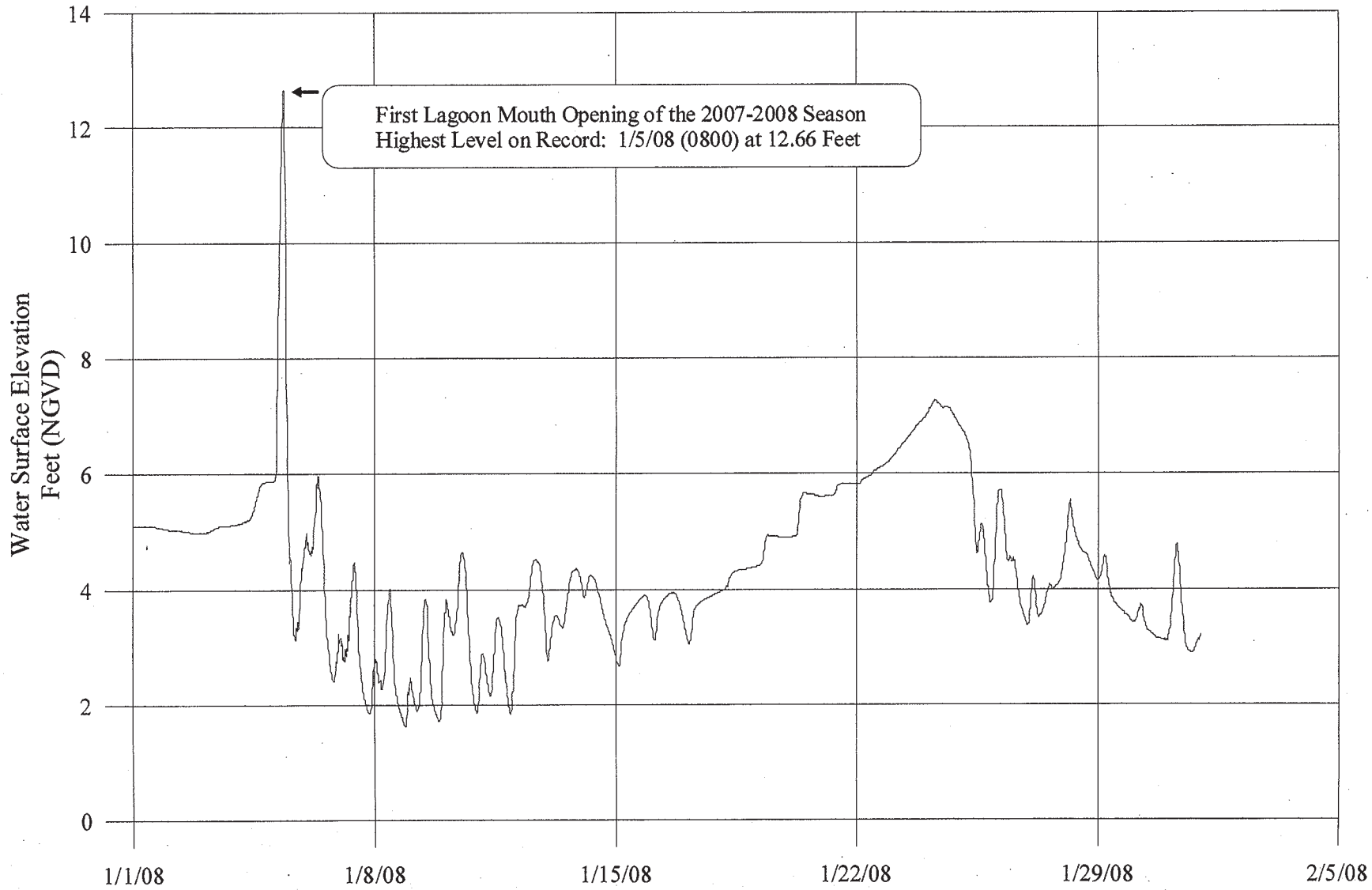


Table II-1
Carmel River Basin Total Annual Streamflow: Water Years 1992 – 2008

TRIBUTARY SITES	Drainage Area (Sq. Miles)	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
CACHAGUA CREEK	46.3	1,780	7,340	560	16,320	3,840	4,990	23,800	2,590	1,730	1,500	245	1,270	1,250	4,340	5,210	261	2,200
PINE CREEK	7.8	3,750	9,800	1,230	11,110	6,550	8,300	15,610	4,540	5,300	3,270	2,300	4,250	2,350	8,910	8,020	849	3,840
SAN CLEMENTE CREEK	15.6	5,450	17,070	1,820	20,580	9,310	14,100	33,380	7,130	9,830	5,340	3,270	5,850	3,720	16,330	13,720	1,360	5,520
TULARCITOS CREEK	56.3	635	3,220	444	5,100	1,650	2,450	22,610	3,810	2,450	1,490	630	552	503	1,000	2,480	503	917
HITCHCOCK CREEK	4.6	*	*	52	1,820	451	716	2,970	169	482	214	18	274	234	863	691	2	383
GARZAS CREEK	13.2	3,700	11,170	746	12,140	4,890	8,570	24,610	5,050	4,980	3,070	1,200	2,760	1,810	8,590	7,420	381	3,010
ROBINSON CANYON CREEK	5.4	619	2,360	89	2,230	619	1,430	6,890	545	823	433	82	448	354	1,710	1,010	25	455
POTRERO CREEK	5.2	*	*	30	1,790	506	1,210	5,970	855	1,020	310	43	210	164	1,470	1,050	13	308
SAN JOSE CREEK (outside CR	14.2	*	*	*	*	*	*	*	6,400	6,260	2,890	1,100	1,880	1,480	7,640	6,870	862	1,740
MAINSTEM SITES																		
CR AT ROBLES DEL RIO	193	38,240	109,000	11,800	155,000	75,210	99,340	250,300	54,640	76,750	47,180	31,850	60,560	38,060	114,400	110,100	12,220	49,080
CR AT DON JUAN BRIDGE	216	*	122,000	12,760	173,600	83,090	111,800	252,200	53,570	73,960	49,360	31,330	60,420	38,330	121,800	118,300	12,150	52,510
CR NEAR CARMEL	246	35,570	123,400	8,200	177,400	74,500	104,100	261,100	55,000	76,190	47,790	28,340	55,400	35,220	119,200	119,200	7,440	43,960
CR AT HIGHWAY 1 BRIDGE	252	*	123,000	7,410	179,500	83,430	112,000	280,900	50,810	72,660	42,860	24,860	52,000	30,300	115,200	115,000	6,470	42,520

Notes:
1. Carmel River (CR) at Robles del Rio and near Carmel sites are maintained by the USGS.
2. (*) No continuous stage data collected.
3. Streamflow sites listed in downstream order.
4. San Jose Creek is outside the Carmel River Basin, but is shown for comparison.

Table II-2
Water Quality Data Collected by MPWMD During RY 2008 at Carmel River Lagoon (CRL) Site[1].

Date	Time 24 Hr	Temperature (F)	Dissolved Oxygen (mg/L)	Carbon Dioxide (mg/L)	pH	Conductivity (uS/cm)	NaCl (ppt)	Turbidity (NTU)	WSE (ft)
13-Jul-07	1315	73.4	8.0	15	8.0	3681	1.9	.25	3.52
20-Jul-07	1300	75.4	9.3	20	8.0	4016	2.1	.40	3.16
09-Aug-07	1250	73.6	9.3	15	8.0	3083	1.6	1.8	3
22-Aug-07	1345	73.9	10.3	10	8.0	4596	2.5	.25	2.7
05-Sep-07	1330	72.8	13.3	5	8.5	3724	2.0	2.2	3.02
21-Sep-07	1315	66.7	10.7	5	8.0	302	1.6	2.1	3.2
05-Oct-07	1315	64.6	10.7	5	9.0	3966	2.1	0	3.64
26-Oct-07	1110	60.4	9.7	5	8.5	6600	3.1	.95	4.46
07-Nov-07	1500	58.6	9.9	15	8.0	5440	3.0	0	4.16
30-Nov-07	1420	50.9	11.6	20	8.0	10160	5.7	.75	4.84
21-Dec-07	1305	52.9	12.3	40	7.5	14460	8.4	1.7	5.24
11-Jan-08	1145	53.1	10.1	15	8.0	10920	6.4	0	3.42
24-Jan-08	1250	47.1	11.2	10	7.5	1232	0.6	.7	7.17
13-Feb-08	1215	52.5	9.6	15	8.0	3166	1.7	0	2.3
29-Feb-08	1245	52.5	10.2	10	7.5	672	0.3	3.7	2.56
14-Mar-08	1145	55.6	10.2	10	7.5	4924	2.6	4.3	2.02
28-Mar-08	1230	55.0	10.8	25	8.0	6490	3.6	5.7	6.32
11-Apr-08	1100	57.9	10.6	15	8.0	1221	0.6	0	5.34
25-Apr-08	1215	61.3	8.0	25	7.5	15570	9.2	.82	1.44
02-May-08	1330	63.1	10.1	15	8.0	1064	0.5	0	6.56
13-May-08	1130	62.8	9.7	15	7.5	800	0.4	0	8.28
30-May-08	1300	65.5	8.8	15	7.5	1014	0.5	0	7.42
20-Jun-08	1115	70.9	10.3	15	8.0	1336	0.7	0	5.66
Minimum		47.1	8.0	5.0	7.5	302	0.3	0.0	
Maximum		75.4	13.3	40.0	9.0	15570	9.2	5.7	
Average		61.8	10.2	14.8	7.9				

[1]The CRL station is located on the southwest end of the main body of the Lagoon, along the rock outcrop at River Mile (RM) 0.1.

Table II-3
Water Quality Data Collected by MPWMD During RY 2008
at Sleepy Hollow Weir (SHW) Site[1]

Date	Time (24 hr)	Temperature (F)	Dissolved Oxygen (mg/L)	Carbon Dioxide (mg/L)	pH	Conductivity (uS/cm)	Turbidity (NTU)
13-Jul-07	1105	65.5	9.0	15	7.5	356	2.3
20-Jul-07	1052	65.5	9.3	15	8.0	353	3.3
09-Aug-07	1135	64.2	10.1	15	7.5	349	4.1
22-Aug-07	1200	68.2	9.2	15	7.5	350	2.7
05-Sep-07	1150	65.7	9.5	15	7.5	339	1.8
21-Sep-07	1200	60.6	11.8	10	8.0	339	1.2
05-Oct-07	1210	58.5	10.0	10	8.0	342	1.5
26-Oct-07	1010	55.4	9.8	10	8.0	363	1.7
07-Nov-07	1335	55.6	10.7	10	7.5	370	1.1
30-Nov-07	1310	47.1	11.6	15	7.5	N/A	0
21-Dec-07	1130	46.2	11.5	15	7.5	386	0
11-Jan-08	1100	48.4	11.4	10	7.5	195	0
24-Jan-08	1215	46.4	11.6	10	8.0	241	0
13-Feb-08	1125	49.1	11.4	10	8.0	205	0
29-Feb-08	1200	51.3	11.8	5	7.5	190	0
14-Mar-08	1100	51.9	12.4	10	7.5	225	0
28-Mar-08	1130	51.3	11.2	10	7.5	238	0
11-Apr-08	1000	53.6	11.6	10	7.5	257	0
25-Apr-08	1100	53.9	9.4	15	8.0	263	0
02-May-08	1215	57.2	10.5	10	8.0	265	0
13-May-08	1015	56.7	11.5	10	7.5	271	0
30-May-08	1200	60.8	11.6	15	8.0	270	0
20-Jun-08	1030	66.6	10.1	15	7.5	310	0
Minimum		46.2	9.0	5.0	7.5	190	0.0
Maximum		68.2	12.4	15.0	8.0	386	4.1
Average		56.5	10.7	12.0	7.7	294	

[1] The SHW station is located 15 ft downstream of the Sleepy Hollow Weir at RM 17.1.

Table II-4
Water Quality Data Collected by MPWMD During RY 2008
at Below Los Padres (BLP) Site[1]

Date	Time (24 hr)	Temperature (F)	Dissolved Oxygen (mg/L)	Carbon Dioxide (mg/L)	pH	Conductivity (uS/cm)	Turbidity (NTU)
13-Jul-07	0935	62.8	7.0	15	7.0	287	.25
20-Jul-07	1000	63.5	6.4	15	7.0	280	1.6
09-Aug-07	1010	63.3	6.0	15	7.5	283	1.2
22-Aug-07	1025	62.2	5.9	15	7.0	282	11
05-Sep-07	1050	52.7	8.6	25	7.0	262	1.1
21-Sep-07	1100	60.1	6.3	15	7.0	268	0
05-Oct-07	1110	63.3	5.8	10	7.5	314	2.5
26-Oct-07	0925	60.8	5.7	20	7.0	327	.55
07-Nov-07	1300	59.9	4.2	20	7.0	337	0
30-Nov-07	1220	54.0	9.1	15	7.5	339	2.2
21-Dec-07	1040	48.9	9.9	15	7.5	326	5
11-Jan-08	1000	49.1	11.3	10	7.5	172	1.3
24-Jan-08	1115	47.3	12.0	10	8.0	222	0
13-Feb-08	1020	49.5	11.1	10	8.0	181	0
29-Feb-08	1100	51.4	12.3	10	7.5	160	0
14-Mar-08	0950	53.4	11.9	10	7.5	203	0
28-Mar-08	1045	53.4	10.3	10	7.5	218	0
11-Apr-08	0915	54.5	11.0	10	7.5	227	0
25-Apr-08	1000	55.4	7.5	10	7.5	244	0
02-May-08	1130	59.0	9.9	15	7.5	243	0
13-May-08	0920	59.2	9.9	10	7.5	295	0
30-May-08	1045	59.4	10.0	15	7.0	249	0
20-Jun-08	0915	63.9	8.4	20	7.0	260	0
Minimum		47.3	4.2	10.0	7.0	160	0.0
Maximum		63.9	12.3	25.0	8.0	339	2.5
Average		56.8	8.7	13.9	7.3	260	

[1]The BLP station is located approximately 200 ft downstream of the Los Padres spillway at RM 25.4.

III. MANAGE WATER PRODUCTION

Cooperative operation plans and quantification of California American Water (Cal-Am) and non-Cal-Am water production within the Monterey Peninsula Water Resource System (MPWRS) is necessary for proper water resources management and protection of the natural resources of the Carmel River basin. In the Five-Year Mitigation Program, Riparian Mitigation #1 is based on conservation and "water distribution management to retain water in the Carmel River" (Finding No. 389-A). This section describes various management activities of the District designed to maximize streamflow and groundwater storage in the Carmel River system.

A. Memorandum of Agreement

Description and Purpose

The original Memorandum of Agreement (MOA) between the California Department of Fish and Game (CDFG), Cal-Am and the District was developed in July 1983 to balance CDFG's requirement to conserve and protect the fish and wildlife resources of the state and Cal-Am's responsibility to supply water to the citizens of the communities of the Monterey Peninsula. This MOA is modified each year to reflect specific storage conditions and inflow projections at Los Padres and San Clemente Reservoirs in the Upper Carmel River watershed. Specifically, the MOA addresses the release of water into the Carmel River from San Clemente Reservoir and was originally designed to maximize surface flow to the Narrows during the low-flow season. In addition to specifying minimum flow releases from San Clemente Reservoir, the MOA limits Cal-Am diversions from San Clemente Reservoir to the Carmel Valley Filter Plant (CVFP) and directs how Cal-Am pumps water from the Lower Valley wells. Normally, the MOA is formulated in May and remains in force until the end of December. The agreement may be modified or extended by mutual consent of all the parties.

Implementation and Activities During 2007-2008

- **2007 MOA** – The 2007 MOA was developed on April 13, 2007, approved by the District Board on May 21, 2007 and signed by all the MOA representatives by June 21, 2007.[1] The initial meeting was conducted earlier than normal because of the critically-dry inflow conditions that persisted in the Carmel River Basin during the year. A follow-up meeting was held on April 30, 2009, with representatives from the Carmel River Steelhead Association (CRSA) to discuss the feasibility of expediting the planned drawdown at San Clemente Reservoir to increase streamflow for smolt emigration during May 2007.

Based on storage conditions and expected reservoir inflows, it was agreed that Cal-Am would maintain minimum flows in the Carmel River at the Sleepy Hollow Weir of six cubic feet per second (cfs) in May, four cfs in June and July, and three cfs from August through December 2007. The 2007

[1] Although all the parties did not sign the 2007 MOA until June 21, 2007, the operations, terms and conditions of the agreement were followed beginning on May 1, 2007, as if the agreement was in effect.

MOA included terms to: (a) limit Cal-Am diversions at San Clemente Dam during low-flow periods, except during an emergency, as defined in SWRCB Order WRO 2002-0002; (b) allow production from Cal-Am's Russell Wells at a maximum rate of 0.5 cfs; (c) limit operation of Cal-Am wells in the Carmel Valley above Robinson Canyon Road Bridge during low-flow periods; and, (d) require Cal-Am to make reasonable efforts to operate the lower Carmel Valley wells in sequence from the most downstream well, progressing upstream as wells are needed and available for production.

As originally executed, the 2007 MOA was effective from May 1, 2007 through December 31, 2007. Because of continued low-flow conditions in the Carmel River Basin during October, November, and December 2007, the MOA group met on December 19, 2007, and agreed to extend the 2007 MOA though January 31, 2008. The group also agreed that Cal-Am would maintain a minimum of 3.5 cfs at the Sleepy Hollow Weir through January 2008 and to meet on January 9, 2008 to assess streamflow and reservoir storage conditions in the Carmel River Basin to determine if the 2007 MOA should be further extended. The group met on January 9, 2008, and, based on improved rainfall and runoff conditions, determined that the 2007 MOA did not need to be extended beyond January 31, 2008.

- **2008 MOA** – The 2008 MOA was developed on May 7, 2008, approved by the District Board on May 19, 2008, and signed by all the MOA representatives by July 18, 2008. Based on storage conditions and expected reservoir inflows, it was agreed that Cal-Am would maintain minimum flows in the Carmel River at the Sleepy Hollow Weir of 11 cfs in June, nine cfs in July, seven cfs during August, five cfs during September, and four cfs during the period from October through December 2008. The 2008 MOA included terms to: (a) limit Cal-Am diversions at San Clemente Dam during low-flow periods, except during an emergency, as defined in SWRCB Order WRO 2002-0002; (b) allow production from Cal-Am's Russell Wells at a maximum rate of 0.5 cfs; (c) limit operation of Cal-Am wells in the Carmel Valley above Robinson Canyon Road Bridge during low-flow periods; and (d) require Cal-Am to make reasonable efforts to operate the lower Carmel Valley wells in sequence from the most downstream well, progressing upstream as wells are needed and available for production.

In addition, language (Paragraph 12) was added to the 2008 MOA that requires Cal-Am to "make every reasonable effort to produce water from the Coastal Subareas of the Seaside Groundwater Basin before producing water from its Carmel River sources to preserve streamflow and instream habitat in the Carmel River for listed species, consistent with the production amounts specified in the Quarterly Water Supply Strategy and Budget for Cal-Am's main distribution system," whenever Cal-Am has not exceeded its annual production limit from both the Coastal Subareas of the Seaside Groundwater Basin and Carmel River sources.

B. Quarterly Water-Supply Strategy and Budget

Description and Purpose

Under Ordinance No. 19, which was adopted in December 1984, the District was required to develop an annual water-supply strategy. This strategy included estimates of projected demands and proposed production targets for the Cal-Am system. The strategy was designed to limit Cal-Am

surface water diversions from the Carmel River to no more than 35 percent of total Cal-Am production. Based on the District strategy, Cal-Am developed a water-supply budget specifying monthly production targets.

Under Ordinance No. 41, which was adopted in March 1989, development of the water-supply strategy and budget was changed from an annual to a quarterly process, and Cal-Am's annual surface-water diversions were reduced to a goal of no more than 29 percent of total production. Currently, the quarterly strategy and budget values are developed jointly by Cal-Am, the District, and CDFG in conformance with the annual MOA. The strategy is designed to maximize the long-term production potential and protect the environmental quality of the Carmel Valley and Seaside basins. The budget includes monthly production targets for each of Cal-Am's major production sources -- San Clemente Reservoir, Upper Carmel Valley (UCV) Aquifer, Lower Carmel Valley (LCV) Aquifer, and the Coastal Subareas of the Seaside Basin -- which reflect current and expected system conditions. The quarterly strategies and budgets are developed in December, March, June, and September of each year.

Starting in April 2002, the Quarterly Water Supply Strategy and Budgets were fundamentally changed by the State Water Resources Control Board (SWRCB), which adopted Order WRO 2002-0002 on March 21, 2002, and by the National Marine Fisheries Service (NMFS) and Cal-Am, who signed a Conservation Agreement on September 18, 2001. This order and agreement changed the way that Cal-Am operates its diversions and wells upstream of Robinson Canyon Road Bridge. Specifically, Cal-Am was ordered to:

1. Immediately upon issuance of SWRCB Order WRO 2002-0002, cease withdrawal of water from the San Clemente Dam during low-flow periods except during an emergency. For the purpose of the Order, "low-flow periods" are defined as times when stream flow in the Carmel River at the Don Juan Bridge gage (RM 10.8) is less than 20 cfs for five consecutive days.

2. Reduce diversions during low-flow periods, from the Scarlett No. 8 Well, Los Laureles Wells Nos. 5 and 6, Panetta Wells, Garzas Wells Nos. 3 and 4, and the Robles Well. Current diversions are 1-7 days per month at each well. Diversions at these wells shall be reduced to a maximum of two eight-hour days per month, except that those wells that currently operate only one eight-hour day per month shall continue to operate at not more than one eight-hour day per month. To the maximum degree practicable, Cal-Am shall operate these wells at night. In consultation with NMFS, USFWS, CDFG and the District, Cal-Am can operate the Scarlett 8 well incrementally to meet maximum daily demand after using all other available downstream sources at maximum capacity.

3. Install, not later than March 31, 2002, a pump that delivers water from the Begonia Zone to the Carmel Valley Village Zone. The "Begonia Zone" is defined to include water well production facilities in AQ3, AQ4 and the Seaside Groundwater Basin. The "Carmel Valley Village Zone" is defined to include all Cal-Am users upstream from the Del Monte Regulating Station.

4. The Russell Wells shall be limited to a combined total instantaneous diversion rate of not

more that 0.5 cfs during low-flow periods.

5. During the low-flow periods, except for 0.5 cfs, all water diverted to Carmel Valley Village Zone shall be water that originates from the Begonia Zone (as defined in Paragraph 3 above).

Implementation and Activities During 2007-2008

During 2007 and 2008, the quarterly strategies and budgets were structured to optimize production from the Coastal Subareas of the Seaside Basin and minimize impacts from production in the UCV. Beginning in 1998, the quarterly budgets were formulated with an annual production goal of 11,285 AF during the Water Year from the Carmel River Basin, in conformance with goals and requirements established by SWRCB Orders WR 95-10, WR 98-04, and WRO 2002-0002. Releases from San Clemente Reservoir were maximized throughout the year and groundwater production in the UCV was limited to periods when sufficient streamflow was available to recharge the aquifer.

Starting in March 2006, the annual limit for Cal-Am's production from its wells in the Coastal Subareas of the Seaside Groundwater Basin for customers in its main system used in the quarterly budgets was reduced from 4,000 AF per year to 3,504 AF per year based on the final judgment in the basin adjudication. Accordingly, the total annual limit for Cal-Am from the Carmel River and Seaside Groundwater Basins for its main system was set at 14,789 AF.

It should be noted that the March 2006 Seaside Basin adjudication decision was amended in February 2007. The decision was amended to allow Cal-Am to combine its production allocation from the Coastal Subareas (3,504 AF) with its production allocation from the Laguna Seca Subarea (345 AF). Accordingly, in WY 2008, Cal-Am was allowed to produce a maximum of 3,849 AF from its sources in the Seaside Groundwater Basin.

- **Cal-Am Main System Production in Water Year 2008**[2] – During Water Year 2008, Cal-Am produced 14,225 acre-feet (AF) of water from all sources for its main system, including 60 AF diverted from the Carmel River Basin and injected into the Seaside Basin by the District. Totals of 595 AF, 10,239 AF (including the 60 AF injected into the Seaside Basin), and 3,390 AF were produced from Cal-Am wells in the UCV, LCV, and Seaside Basin Coastal Subareas, respectively. Of the system total, no water was diverted at San Clemente Dam, which represents the fifth consecutive year this has occurred since Cal-Am's record of diversions began in 1915. Currently, Cal-Am's ability to divert at this site is constrained by: (1) sediment nearly filling the reservoir and blocking the intake structure, (2) higher turbidity standards limiting the duration and period of diversion, (3) the Conservation Agreement with NMFS, and (4) SWRCB Order 2002-0002 that restricts diversions during the low-flow season.

[2] Beginning with the 2002-2003 Mitigation Report, Cal-Am production is reported on a Water Year basis, from October 1 of one Calendar Year through September 30 of the following Calendar Year. This is a change from previous annual reports in which the reporting period was July of one year through June of the following year. This change makes the mitigation report consistent with reporting requirements under SWRCB Order No. WR 95-10.

C. Well Registration and Reporting Program

Description and Purpose

All owners of wells within the District are required to register and report their annual water production. The purpose of the program is to provide annual aggregate estimates of water production from both Cal-Am and non Cal-Am well owners in the various groundwater production zones in the District. The information provided is used to make decisions regarding management of the limited water resources of the Monterey Peninsula area.

The District began its Well Registration and Reporting Program in 1980. In 1981 and 1982, the first two years of production reporting, well owners were required to report water production twice a year. In subsequent years, this requirement was reduced to an annual basis.

From 1981 through 1990, well owners were allowed to report water production by one of three methods: Water Meter, Land Use, or Power Consumption Correlation. In March 1990, the District adopted Ordinance No. 48 requiring installation of water meters on all large production wells (i.e., those producing 20 or more acre feet per year). In November 1991, District rules were further amended with the adoption of Ordinance No. 56, which extended the metering requirement to all existing medium production wells, defined as those producing between 5 and 20 acre-feet per year (AFY), and all new wells within the District. Ordinance No. 56 also eliminated the Power Consumption Correlation reporting method.

Implementation and Activities During 2007-2008

Tables III-1 and **III-2** show summaries of reported production from Cal-Am and non-Cal-Am wells in WY 2008 and WY 2007, respectively. The report for Water Year 2008 has been revised since it was first presented to the Board on April 20, 2009.

Figure III-1 compares reported production from Cal-Am and non-Cal-Am wells and surface diversions located within the MPWRS in WY 2008 with production limits set by the District's Water Allocation Program. The MPWRS includes the Carmel River Basin, Carmel Valley Alluvial Aquifer and the Coastal Subareas of the Seaside Groundwater Basin. With respect to the District's Water Allocation Program limits, Cal-Am production [3] from the MPWRS in WY 2008 was 14,225 acre-feet, or 3,416 acre-feet (19.4%) less than the Cal-Am production limit of 17,641 acre-feet that was established with the adoption of Ordinance No. 87 in 1997. Non Cal-Am production within the MPWRS in WY 2008 was 2,966 acre-feet (including surface diversions), or 80 acre-feet (2.6%) less than the non Cal-Am production limit of 3,046 acre-feet established by Ordinance No. 87. Combined production from Cal-Am and non Cal-Am sources within the MPWRS was 17,191 acre-feet in WY 2008, which is 3,496 acre-feet (17.0%) less than the 20,687 acre-feet production limit set for the MPWRS as part of the District's Water Allocation Program.

[3] The Cal-Am well production values for WY 2008 include 60 AF that were produced from its Carmel Valley wells for "diversion" to storage in the Seaside Basin in the winter, and 60 AF that were "recovered" from Seaside Basin storage in the summer.

During WY 2008, District staff inspected 25 new water-meter installations to ensure compliance with the District's water-meter installation standards and guidelines. In addition, staff received copies of 28 permits for construction of new wells within the District from the Monterey County Health Department, eight of which constituted permits for replacements of older wells, and advised the permitees that MPWMD permits were also needed.

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Prepared by Water Resources Division
Finalized: September 26, 2009

Table III-1
Revised Draft District-Wide Water Production Summary for Water Year 2008

October 1, 2007 - September 30, 2008

SOURCE AREAS [1, 2]	NON CAL-AM (NON CAL-AM) WELLS						CAL-AM (CAL-AM) WELLS		AQUIFER SUBUNIT TOTALS	
	WATER METER		LAND USE		SUB-TOTAL		WATER METER			
	NO. OF WELLS	PRODUCTION [3] (AF)	NO. OF WELLS	PRODUCTION (AF)	NO. OF WELLS	PRODUCTION (AF)	NO. OF WELLS	PRODUCTION (AF)	NO. OF WELLS	PRODUCTION (AF)
AS1	7	144.2	1	0.1	8	144.3	2	471.6	10	615.9
AS2	41	171.9	36	38.0	77	209.9	3	124.0	80	333.9
AS3	115	1,035.7	52	58.0	167	1,093.8	8	8,760.8	175	9,854.6
AS4	28	552.3	7	2.4	35	554.7	1	1,478.7	36	2,033.4
SCS	9	929.5	1	1.1	10	930.7	5	3,389.8	15	4,320.6
CAC	6	35.8	8	11.7	14	47.5	0	0.0	14	47.5
CVU	250	626.8	42	42.5	292	669.3	0	0.0	292	669.3
LSS	8	523.4	2	2.7	10	526.1	4	533.9	14	1,059.9
MIS	85	581.4	11	8.8	96	590.3	0	0.0	96	590.3
ACTIVE	549	4,601.0	160	165.3	709	4,766.3	23	14,758.9	732	19,525.2
INACTIVE	304		34		338		20		358	
NOT REPORTING	50		23		73		0		73	
METHOD TOTALS:	903	4,601.0	217	165.3	1,120	4,766.3	43	14,758.9	1,163	19,525.2

NOTES:

1. Shaded areas indicate production within the Monterey Peninsula Water Resources System. The LSS was added to the Monterey Peninsula Water Resources System in September 2008. Future reports will include the LSS in the Monterey Peninsula Water Resources System.
2. CAL-AM - California American Water
3. Source areas are as follows:
   - AS1 - UPPER CARMEL VALLEY - San Clemente Dam to Esquiline Bridge
   - AS2 - MID CARMEL VALLEY - Esquiline Bridge to Narrows
   - AS3 - LOWER CARMEL VALLEY - Narrows to Via Mallorca Bridge
   - AS4 - LOWER CARMEL VALLEY - Via Mallorca Bridge to Lagoon
   - SCS - SEASIDE COASTAL SUBAREAS
   - CAC - CACHAGUA CREEK and UPPER WATERSHED AREAS
   - CVU - CARMEL VALLEY UPLAND - Hillsides and Tularcitos Creek Area
   - LSS - LAGUNA SECA SUBAREA (Ryan Ranch Area is within LSS)
   - MIS - PENINSULA, CARMEL HIGHLANDS AND SAN JOSE CREEK AREAS
4. Any minor numerical discrepancies in addition are due to rounding.

DISTRICT-WIDE PRODUCTION		
SURFACE WATER DIVERSIONS:		
	CAL-AM Diversions (San Clemente Dam):	0.0
	Non Cal-Am Diversions:	32.4
CAL-AM WELLS:		
	SEASIDE:	3,389.8
	CARMEL VALLEY:	10,835.1
	Within the Water Resources System:	14,225.0
	Outside the Water Resources System:	533.9
	CAL-AM TOTAL, Wells and Diversion:	14,758.9
NON CAL-AM WELLS:		
	Within the Water Resources System:	2,933.2
	Outside the Water Resources System:	1,833.1
	NON CAL-AM TOTAL, Wells and Diversion:	4,798.8
	GRAND TOTAL:	19,557.6

Table III-2
District-Wide Water Production Summary for Water Year 2007

SOURCE AREAS [1,2]	NON CAW (NON CAL-AM) WELLS						CAW (CAL-AM) WELLS		AQUIFER SUBUNIT TOTALS	
	WATER METER		LAND USE		SUB-TOTAL		WATER METER			
	NO. OF WELLS	PRODUCTION [3] (AF)	NO. OF WELLS	PRODUCTION (AF)	NO. OF WELLS	PRODUCTION (AF)	NO. OF WELLS	PRODUCTION (AF)	NO. OF WELLS	PRODUCTION (AF)
AS1	7	121.3	1	1.2	8	122.5	2	373.9	10	496.5
AS2	45	175.0	37	38.6	82	213.6	1	86.7	83	300.3
AS3	119	1,206.6	47	55.5	166	1,262.1	8	7,986.5	174	9,248.6
AS4	28	690.5	7	2.4	35	692.8	1	2,038.4	36	2,731.2
SCS	8	720.3	2	1.6	10	721.8	6	3,626.0	16	4,347.8
CAC	7	35.4	9	14.3	16	49.7	0	0.0	16	49.7
CVU	235	588.4	44	42.8	279	631.2	0	0.0	279	631.2
LSS	9	506.0	2	3.5	11	509.5	4	435.0	15	944.5
MIS	84	373.5	14	28.6	98	402.1	0	0.0	98	402.1
ACTIVE	542	4,417.0	163	188.4	705	4,605.4	22	14,546.6	727	19,152.0
INACTIVE	281		32		313		20		333	
NOT REPORTING	57		22		79		0		79	
METHOD TOTALS:	880	4,417.0	217	188.4	1,097	4,605.4	42	14,546.6	1,139	19,152.0

NOTES:
1. Shaded areas indicate production within the Monterey Peninsula Water Resources System

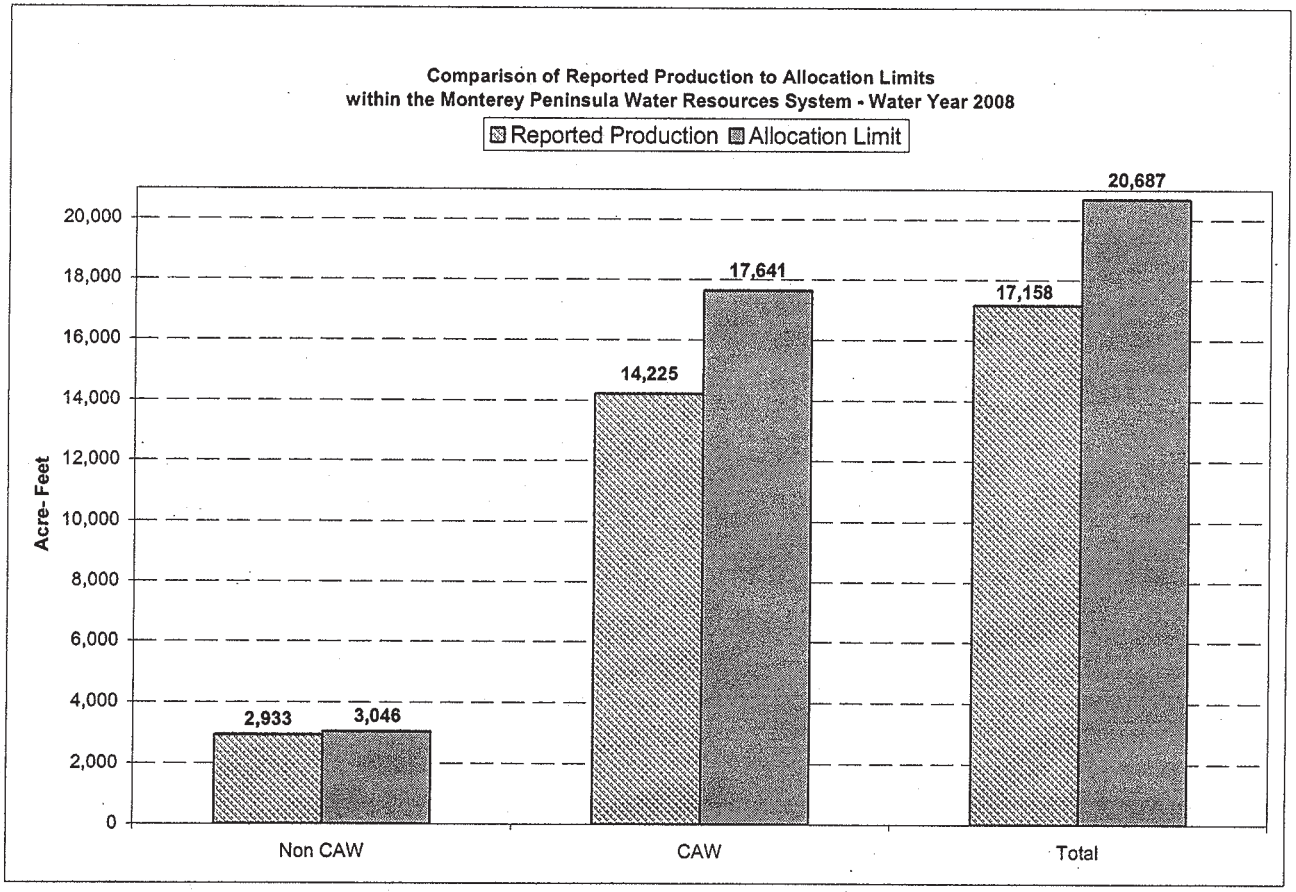
2. CAW - California American Water

3. Source areas are as follows:
   AS1 - UPPER CARMEL VALLEY - San Clemente Dam to Esquiline Bridge
   AS2 - MID CARMEL VALLEY - Esquiline Bridge to Narrows
   AS3 - LOWER CARMEL VALLEY - Narrows to Via Mallorca Bridge
   AS4 - LOWER CARMEL VALLEY - Via Mallorca Bridge to Lagoon
   SCS - SEASIDE COASTAL SUBAREAS
   CAC - CACHAGUA CREEK and UPPER WATERSHED AREAS
   CVU - CARMEL VALLEY UPLAND - Hillsides and Tularcitos Creek Area
   LSS - LAGUNA SECA SUBAREA (Ryan Ranch Area is within LSS)
   MIS - PENINSULA, CARMEL HIGHLANDS AND SAN JOSE CREEK AREAS

4. Any minor numerical discrepancies in addition are due to rounding.

DISTRICT-WIDE PRODUCTION		
SURFACE WATER DIVERSIONS:		
	CAW Diversions (San Clemente Dam):	0.0
	Non Cal-Am Diversions:	105.8
CAW WELLS:		
	SEASIDE:	3,626.0
	CARMEL VALLEY:	10,485.6
	Within the Water Resources System:	14,111.5
	Outside the Water Resources System:	435.0
	CAW TOTAL, Wells and Diversion:	14,546.6
NON CAW WELLS:		
	Within the Water Resources System:	3,012.9
	Outside the Water Resources System:	1,592.5
	NON CAW TOTAL, Wells and Diversion:	4,711.2
	GRAND TOTAL:	19,257.8

Figure III-1


Comparison of Reported Production to Allocation Limits
within the Monterey Peninsula Water Resources System - Water Year 2008
Reported Production
Allocation Limit
Acre-Feet
20,000
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
2,933
3,046
14,225
17,641
17,158
20,687
Non CAW
CAW
Total

IV. MANAGE WATER DEMAND

Riparian Vegetation Mitigation #1 in the Five-Year Mitigation Program entails "conservation and water distribution management to retain water in the Carmel River." Finding No. 389-A adopted by the District Board states that annual monitoring of conservation activities would be reported. This section includes information on the District's conservation and demand management programs.

A. Water Conservation

Description and Purpose

The District has been actively involved with water conservation programs on the Monterey Peninsula since October 1979. In 1979, the District implemented its first conservation program that involved public speaking engagements, drought tolerant plant displays, a library of conservation ideas and techniques, development of a drought tolerant plant list, and regular public service announcements. In addition, the District co-sponsored public workshops on rainwater reuse and cisterns and prepared regular press releases regarding its activities.

The conservation program expanded in 1983 when the District agreed to facilitate the Water Conservation Plan for Monterey County. This plan was completed and adopted by the District Board of Directors in 1986. The goal was to save 15 percent of what was estimated to be the demand in 2020, roughly 3,600 AFA in savings with an estimated demand of 24,000 AFA.

The District has also been involved in water rationing planning and implementation since its inception in 1978. A water rationing plan developed by the Monterey Peninsula Water Management Agency (the predecessor to the District) was available when the District was established. The former plan was reviewed and amended in June 1981 with the adoption of Ordinance No. 7. The rationing plan was again amended in 1988 (Ordinance Nos. 35 and 37) during drought-related rationing administered by the District that continued through 1991. Water use reductions of approximately 30 percent were achieved during that time.

A cornerstone of the District's program is its water conservation regulation (Regulation XIV). This Regulation requires retrofit of inefficient plumbing fixtures to ultra-low flow fixtures at the time a property changes ownership, for new construction and remodels, and for commercial changes in use or expansion. District staff inspects around 90 percent of the properties subject to retrofit and conservation requirements for compliance. Two full-time inspectors are in the field, visiting properties on a prearranged schedule, while office staff schedule and follow up on previously completed inspections. The inspectors document : (1) the number, type, and flow rates of all water fixtures in the building; (2) verify compliance with conditions of water permits or other approvals; (3) provide conservation information, (4) provide rebate applications and devices as needed, (5) note and report leaks to the property contact, and (6) generally verify that all requirements have been met. Properties failing to meet the requirements are given 30 days to correct any violation and are typically re-inspected to verify full compliance.

A second key element was added in 1997 when the District began issuing rebates for voluntary toilet replacements with 1.6 gallons-per-flush toilets. The initial program shared funding with California

American Water (Cal-Am). The rebate program has been expanded over the years and is now funded by Cal-Am and administered by the District. Rebates are available for high efficiency toilets, low consumption dishwashers and washing machines, instant-access hot water systems, Smart (weather-based) irrigation controllers, soil moisture sensors, rain sensors and cisterns. Irrigation system components listed above were added during 2007-2008.

Other components of the District's conservation program include an aggressive commercial retrofit program; the Expanded Water Conservation and Standby Rationing Plan (Regulation XV) to maintain water use with the limits set by the State Water Resources Control Board (SWRCB) Order WR 95-10 and the Seaside Adjudication Decision; distribution of water-saving showerheads, faucet aerators, hose shut-off nozzles, hose timers and other equipment; public education as a member of the Water Awareness Committee of Monterey County; and District policies and incentives to promote conservation in Jurisdictions within the District.

Implementation and Activities During 2007-2008.

- **Conservation Inspections** -- District staff continued an intensive inspection program to ensure compliance with the conservation regulations; inspections focused on change of ownership requirements and new construction or remodel water permit requirements and conditions.

Transfer of title inspections make up the bulk of the District's inspection program. Most of the **1,097** properties that changed ownership from July 2007 through June 2008 (FY 07-08) were inspected for installation of ultra-low flow fixtures prior to the close of escrow. **Eighty-two percent** (82%) of the inspected properties were found to meet the conservation requirements during the first inspection. An additional 2% passed the second inspection, typically after replacing older toilets identified during the initial inspection. To establish 100% compliance with the retrofit requirements, staff continues enforcement until compliance is achieved.

Water saving equipment is required as a condition of water permits issued for new construction and remodels. District staff inspected **828** properties in this category to verify compliance with water permit conditions. Inspections included verification of conservation measures, such as drip irrigation and "instant-access" hot water (systems that make hot water available within six seconds), as well as installation of ultra-low flow fixtures throughout the property.

For the above two categories, a total of about **1,608** inspections were conducted from July 2007 through June 2008. An estimated **17.332** acre-feet (AF) of water is being saved annually by the retrofits verified for these two categories during FY 07-08.

- **Other Conservation Incentives** -- The District continued to offer incentives for property owners who agree to install state-of-the-art water appliances to offset new water fixtures as a condition of their water permit. Credit, in the form of water fixture units, remained available for installing ultra-low water consumption dishwashers and washing machines, High Efficiency Toilets (HET) (i.e., toilets using 1.28 gallons per flush on average), and "instant-access" hot water systems in remodels and additions. During 2007-2008, **265** property owners agreed to one or more of these conditions for credit. This incentive program is one way to allow limited remodeling and expansions in use without increasing water use.

- **Rebate Program** -- In January 1997, the District enacted a program that offered rebates of up to $100 for every older residential toilet replaced with an ultra-low flow model. The program is co-funded with Cal-Am. Water saved through this program is set aside to reduce community water use. Initially designed to facilitate toilet replacements that might not otherwise occur for years, the program was expanded in 2003 to provide rebates for ultra-low consumption appliances, high efficiency toilets, and cisterns. In September 2007, the rebate program was amended to add rebates for smart controllers and sensors, and to increase the dollar amount refunded for high efficiency toilets to $150.00; ultra-low water consuming dishwashers to $125.00; 28 gallon per cycle ultra-low water consuming washers to $150.00; 18 gallon per cycle ultra-low water consuming washers to $200.00; and instant-access hot water systems to $200.00

From July 1, 2007 through June 30, 2008 an estimated **13.681** acre-feet of water was permanently saved by the rebate program. A total of **950** applications were received, and **707** applications were approved. Most denied applications were from applicants located outside of the District or requested rebates for water fixtures that did not meet the District's criteria. The District and Cal-Am rebated **$32,486.57** for toilets that were replaced as a result of this program, and **$115,051.25** for ultra-low water consumption appliances, zero-water consuming urinals, hot-water demand pumping systems, and cisterns. The average refund per toilet was **$59.00**. A breakout of the refunds is as follows:

- In the single-family residential sector, **917** refund applications were approved; **132** toilets were replaced for an annual savings of **3.036** AF or **989,284** gallons per year; **109** high-efficiency toilets were installed for an annual savings of **3.270** AF or **1,065,533** gallons per year; **157** ultra-low-water consuming dishwashers and **393** ultra-low-water consuming washing machines were installed for a savings of **6.366** AFY or **2,074,367** gallons per year.

- In the multi-family residential sector, **21** refund applications were approved; and **26** toilets were replaced for an annual savings of **0.598** AF or **194,859** gallons per year.

- In the non-residential sector, **12** refund applications were approved; and **12** toilets were replaced for an annual savings of **0.276** AF or **89,935** gallons per year; **4** high efficiency toilets were installed for an annual savings of **0.120** AF or **39,102** gallons per year; and **one** ultra low-water consuming washing machine was installed for an annual savings of **0.015 AF** or **4,888** gallons per year.

- **Conservation Education** -- District activities remained focused on public education to encourage Peninsula residents and businesses to continue water conservation practices. Individual water waste education took place as necessary to remind water users not to wash sidewalks, leave hoses running or ignore leaks. The Expanded Water Conservation and Standby Rationing Plan has been successful in keeping community water use below the limits set by the State Water Resources Control Board.

The District also continued supporting water conservation education through the Water Awareness Committee of Monterey County (WAC). WAC is a nonprofit water-education organization serving Monterey County. The District holds a seat on the WAC Board of Directors and contributes annual financial and staff support. WAC provides books on water-efficient landscaping, drip irrigation, and