FUGRO WEST, INC.

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July 20, 2009
Project No. 3033.006.06

Carpinteria Valley Water District
Post Office Box 578
Carpinteria, California 93014

Attention: Mr. Charles Hamilton, General Manager

Subject: Carpinteria Groundwater Basin, Annual Report for 2008

Dear Mr. Hamilton:

Presented in this annual report is a summary and description of groundwater conditions in the Carpinteria groundwater basin for calendar year 2008. This represents the ninth annual report that has been prepared to assist the Carpinteria Valley Water District (District) in its ongoing efforts (pursuant to its AB3030 Groundwater Management Plan) to manage the groundwater resources of the basin and provide information on water level and water quality conditions to all users of groundwater in the basin. The intent of the annual report is to provide a brief narrative and graphics that document the "health" of the basin's groundwater resources, trends in groundwater levels and water quality, information on land use, and annual groundwater pumpage. Information on the development of the program, selection of wells to be sampled, and surface water sampling points, etc., is available in prior reports prepared for the District.

Three large maps form an integral part of this report. Plate 1 - Water Level Hydrograph Map, Fall 2008, depicts wells in the basin used for purposes of water level measurements and to assess changes in groundwater in storage. This map shows the physical limits of the groundwater basin, locations of the key wells, historical variations in water levels, and water level contours during the period of October 2008. Plate 2 depicts water level contours during April 2008, in which groundwater pumpage is less relative to fall pumpage. Plate 3 - Chemical Hydrograph Map, depicts the location of wells that are used to monitor water quality in the basin. This map depicts trends of several important water quality constituents for ground and surface water that are routinely obtained as part of the semiannual water quality data collection program. The data provide information on the concentration and spatial distribution of total dissolved solids, nitrate ions, and chloride ions. Both of these maps are updated annually and included in each annual report.

Precipitation

Groundwater recharge occurs by direct infiltration of precipitation, streambed percolation, irrigation return flow, and to a limited extent, by underflow from the "hill and mountain" area. Precipitation in the Carpinteria area for the 2008 calendar water year was recorded at 19.22 inches at the Carpinteria Fire Station. For the 30-year period between 1979

and 2008, an average of 20.95 inches of precipitation fell in the area. The 2008 precipitation was equal to about 93 percent of the 30-year average.

Precipitation data at the Carpinteria Fire Station have been collected for 60 years between 1949 to the present, during which average annual precipitation was 19.96 inches. A graph showing the cumulative departure from average precipitation is presented as Figure 1. The departure from average precipitation is the difference between precipitation in a specific year and the average precipitation for the period. Figure 1 depicts the sum of these departures over time (cumulative). Based on the cumulative departure from average precipitation at this station, there have been a series of cyclic wet and dry periods. Within the period of record, dry cycles have occurred between 1949 and 1960 (11 years or more) and between 1984 and 1990 (6 years). The current moderately dry cycle has lasted between 1999 and 2008 (9 years).

Groundwater Levels

Water level measurements are made by District staff on a bimonthly basis for about 34 wells in the basin. The locations of these wells are shown on Plates 1 and 2. The water level data were obtained from District staff and hydrographs prepared for 17 key wells, which are shown on Plates 1 and 2. The data were then used to prepare water level elevation contours, which are shown on Plate 1 for the October 2008 period and on Plate 2 for the April 2008 period. The contours are representative of water levels within wells perforated in several depth zones. Therefore, the contours represent a composite of many different depth zones, not water level conditions in a single, common aquifer.

During 2008, water levels in the basin were slightly lower than during the same period during the previous year and, in places, at or below sea level. During October 2008, the time period presented on Plate 1, a pumping depression was present in the central portion of the District. The pumping trough was as deep as about 15 feet below sea level during the October 2008 measurement period and several feet below sea level at the coast, a condition that could allow sea water intrusion. However, there is no documented evidence of sea water intrusion in the basin. As is usual, several wells included in the water level measurement program were actively pumped or influenced by nearby pumping wells at the time of the October survey, resulting in a relatively limited number of wells with data.

During April 2008, the time period presented on Plate 2, water level conditions, as expected, are generally higher than during the October period presented on Plate 1. Notably, the groundwater levels were above sea-level throughout the District during the April period, a condition caused by seasonal groundwater recharge and relatively less groundwater pumping in the basin. The pumping trough evident on Plate 1 is absent on Plate 2, further indicating a relative lack of groundwater pumpage.

Water level data from the 20-year period between 1989 and 2008 indicate that water levels are commonly higher in the winter and spring due to recharge from precipitation and lower total groundwater pumpage, and relatively lower in summer and autumn due to pumping of groundwater from wells within the District. In general, the hydrographs presented on Plate 1 show that over the 5-year period (2003 through 2008), water levels in Storage Unit No. 1 have

locally fallen by as much as 15 to 25 feet. This amount of water level decline typically recovers within a 2 to 3 year cycle of above average rainfall. Several wells within Storage Unit No. 2 (Santa Barbara Formation) including Well -35E1, located in the extreme southeast part of the basin, have displayed a persistent trend of lower water levels over the period between 1991 and 2003. The declines were presumably related to pumping of wells in this part of the basin, and pumpage amounts that may exceed the long-term average annual recharge (i.e., overdraft). At the end of 2008, the water level in Well -35E1 had risen to 2001 levels. The District's wells are only minimally affected by this activity. Groundwater levels in Storage Unit No. 1 (Casitas Formation) have recovered since the early 1990s due to reduced groundwater pumpage.

Groundwater Use

Groundwater pumpage in the basin occurs both from District production wells (see Plates 1 and 2) and from about 100 private wells. Pumpage from District wells are metered. The District supplies imported water and/or local groundwater to numerous agricultural parcels of known acreage and crop type (lemon, avocado, greenhouse, flower fields). From these metered deliveries, unit water use values (so called determining factors) for various crop types can be used to estimate private groundwater pumpage. For calendar year 2008, unit water values were assigned to land uses based on 2008 land use data. Based on this calculation, a provisional private pumpage estimate of 2,865 acre-feet was calculated. Summaries of District groundwater pumpage and imported water amounts for 2008 are included in Appendix A - Supporting Data.

Groundwater pumpage from the basin by the District in calendar year 2008 was 1,074 acre-feet. This volume of pumpage was approximately 80 percent of the 20-year District pumpage average of about 1,320 acre-feet. Groundwater pumpage in the District from calendar years 1989 through 2008 are presented in Figure 2 - Water Use and Precipitation Data, Carpinteria Valley, and in Table 1 - Water Use and Precipitation Data. Imported water volumes (Casitas MWD, State Project water, and Lake Cachuma water) and seasonal precipitation totals are also provided. As indicated, groundwater pumpage in the basin from 1989 to 2008 has averaged about 3,760 acre-feet per year (afy), and ranged from as high as 5,472 afy in 1990, to as low as 2,484 afy during 2001. Of the groundwater pumped, District pumpage has typically been about one-quarter to one-third of the total.

Table 1. Water Use and Precipitation Data

Calendar Year	Rainfall (inches)	Estimated Private Pumpage (acre-feet)	Metered CVWD Pumpage (acre-feet)	Imported Water (acre-feet)	Total Pumpage (acre-feet)	District Use (percent)
1989	7.33	1,556	3,035	3,266	4,591	66
1990	7.75	1,964	3,508	1,774	**5,472**	64
1991	26.13	2,351	2,664	1,434	**5,015**	53
1992	27.05	2,174	1,178	3,155	3,352	35
1993	32.62	2,434	1,524	2,808	3,958	39
1994	15.02	2,780	1,305	3,206	4,085	32
1995	41.35	2,418	1,340	2,995	3,758	36
1996	25.86	2,597	1,410	2,896	4,007	35
1997	19.98	2,504	1,242	3,429	3,746	33
1998	41.35	2,481	469	3,549	2,950	16
1999	8.91	2,400 [1]	535	3,907	2,935	18
2000	18.99	2,400 [1]	1,210	2,959	3,610	34
2001	24.23	2,400 [1]	84	3,497	2,484	3
2002	12.28	3,116	662	3,774	3,778	18
2003	14.62	2,596 [2]	446	3,769	3,042	15
2004	19.42	2,698 [2]	1,265	3,884	3,963	32
2005	27.20	2,183 [2]	940	3,693	3,123	30
2006	16.86	2,270 [2]	1,142	3,147	3,412	33
2007	9.67	2,606	1,340	2,684	3,946	34
2008	19.22	2,865 [3]	1,074	2,842	3,939	27
Mean	20.79	2,440	1,319	3,133	3,758	35
Maximum	41.35	3,116	3,508	3,907	5,472	66
Minimum	7.33	1,556	84	1,434	2,484	3

Notes: 1) 1999 to 2001 private pumpage estimated based on long-term average.
2) 2003 to 2006 private pumpage based on land use data of 2004 and 2006
3) 2008 private pumpage are considered provisional.
Bolded values of Total Pumpage exceed 5,000 acre-feet "safe yield"

The estimated 5,000 afy safe yield of the basin, (GTC, 1976 and 1986), has been exceeded twice in the last 20 years, the most recent of which was in 1991. In the remaining years, total groundwater pumped has been less than 5,000 afy and, on average, has been about 1,465 afy less than the estimated safe yield. Pumpage less than the basic safe yield since about 1992 resulted in a recovery of water levels in the basin and an accumulation of groundwater in storage. In 2003, the District retained the firm of Integrated Water Resources, Inc. (IWR) to perform an independent review of the perennial yield of the basin. The results of that study reasserted that a basin safe or perennial yield of 5,000 afy was appropriate.

Groundwater Quality

Groundwater quality in the Carpinteria basin is monitored by collecting samples from as many as 30 wells and 6 surface water stations on a biannual basis (spring/fall). The data collection program was initiated by the District in early 1999. Laboratory analyses performed include a full range of inorganic chemical constituents typically referred to as "Irrigation Suitability Analysis."

Groundwater quality in the basin continues to be suitable for most beneficial usages. As shown on Plate 3, total dissolved solids (TDS) concentrations for most wells range from 600 to 1,000 milligrams per liter (mg/l). Nitrate concentrations within Well -19MI, which have been elevated in past years with concentrations of over 400 mg/l, have moderated somewhat. Nitrate concentrations in Well -19M1 were 235 and 126 mg/l during 2008. By contrast, nitrate concentration within well -19E1 was much lower, a maximum concentration of 9.3 mg/l during 2008. Since 2005, TDS and nitrate concentrations in Well -19MI have moderated slightly.

During 2008, chloride concentrations within Wells -19MI and adjacent -19E1 were over 300 mg/l. Chloride concentrations in well -19MI have remained relatively steady for the past several years. Well -19M1 is 204 feet deep and likely has very shallow perforations although the actual depth interval is unknown. Well -19E1 is located approximately 900 feet north and is a relatively shallow well. Comparison of quality data from the two wells shows that, although chloride concentrations are higher than many monitored wells, neither nitrate nor TDS are as elevated as those in Well -19M1.

Groundwater in the basin is generally characterized as calcium bicarbonate in chemical nature and locally demerited by the presence of elevated nitrate and chloride ion concentrations in shallow aquifers in Sections 19 and 20 of the basin. Other than the locally high nitrate ion concentrations in Section 19 and 20, the groundwater quality appears stable with no long-term trends toward impairment.

Summary and Conclusions

Based on the data for 2008 and the preceding years, aquifers in the Carpinteria basin continue to be adequately recharged in average to above average precipitation years, and provide a generally high quality of groundwater for the prevailing usages. Water levels in the basin were generally above sea level in 2008, with the exception of a seasonal pumping trough in the central portion of the basin. Groundwater pumpage from the basin in 2008 was estimated to be approximately 3,940 acre-feet. A general observation of water level trends would suggest that recharge to the groundwater basin during 2008 has been less than the average annual recharge, as evidenced by stable to declining water levels. It should be noted that no annual determination of recharge components or a water balance in the basin have been performed in over 20 years (GTC, 1986). No adverse water quality conditions or trends are apparent other than the occurrence of elevated nitrate and chloride ion concentrations in two shallow wells in the western portion of the basin.

We recommend that the data collection program (water levels and water quality) be maintained in its current form in 2009 with the following modifications:

- Prepare a spring water level map to present water levels that are less affected by seasonal pumping stresses.
- Prepare a map illustrating the annual change of water level elevation and integrate these data using GIS to estimate the annual change of groundwater in storage. The map should consider the period from each spring to the following (or prior) spring period.

- Attempt to target the timing of the collection of water level data throughout the year to avoid the influence of pumping wells (in particular, District wells).
- The District should develop a process with the Santa Barbara County Environmental Health Department (EHD) that ensures the District will be routinely and automatically informed of all new well construction, well rehabilitation, and well destruction permits filed with the EHD, including receipt of State Well Completion Reports, geophysical electric logs, and water quality analysis.
- Develop a more formal conjunctive use operational model of the District water supplies that integrates groundwater and imported water supplies to take better advantage of the accumulated groundwater storage potential of the basin.

We understand that the District applied for and received grant funding from the California State Department of Water Resources in 2008 as part of AB 3030 (Local Groundwater Assistance Program) to prepare an updated water balance and groundwater flow model for the basin. Due to funding issues, the study has been delayed until perhaps 2010. We also understand that the District will be drilling a new well at El Carro Park for possible aquifer storage and recovery of imported water and other conjunctive use purposes. Construction and testing of the new well is to occur during the second half of 2010.

Closure

This report has been prepared for the exclusive use of the Carpinteria Valley Water District and their agents for specific application to the conditions of groundwater supply and quality in the Carpinteria groundwater basin in Carpinteria, California. The findings and conclusions presented herein were prepared in accordance with generally accepted hydrogeologic engineering practices. No other warranty, express or implied, is made.

Sincerely,

FUGRO WEST, INC.

David A. Gardner, CHg 122
Principal Hydrogeologist

Attachments: References
Figure 1 - Cumulative Departure from Average Precipitation
Figure 2 - Water Use and Precipitation Data
Plate 1 - Water Level Hydrograph Map, October 2008 Period
Plate 2 - Water Level Hydrograph Map, April 2008 Period
Plate 3 - Chemical Hydrograph Map
Appendix A - Supporting Data

Copies Submitted: (20) Addressee

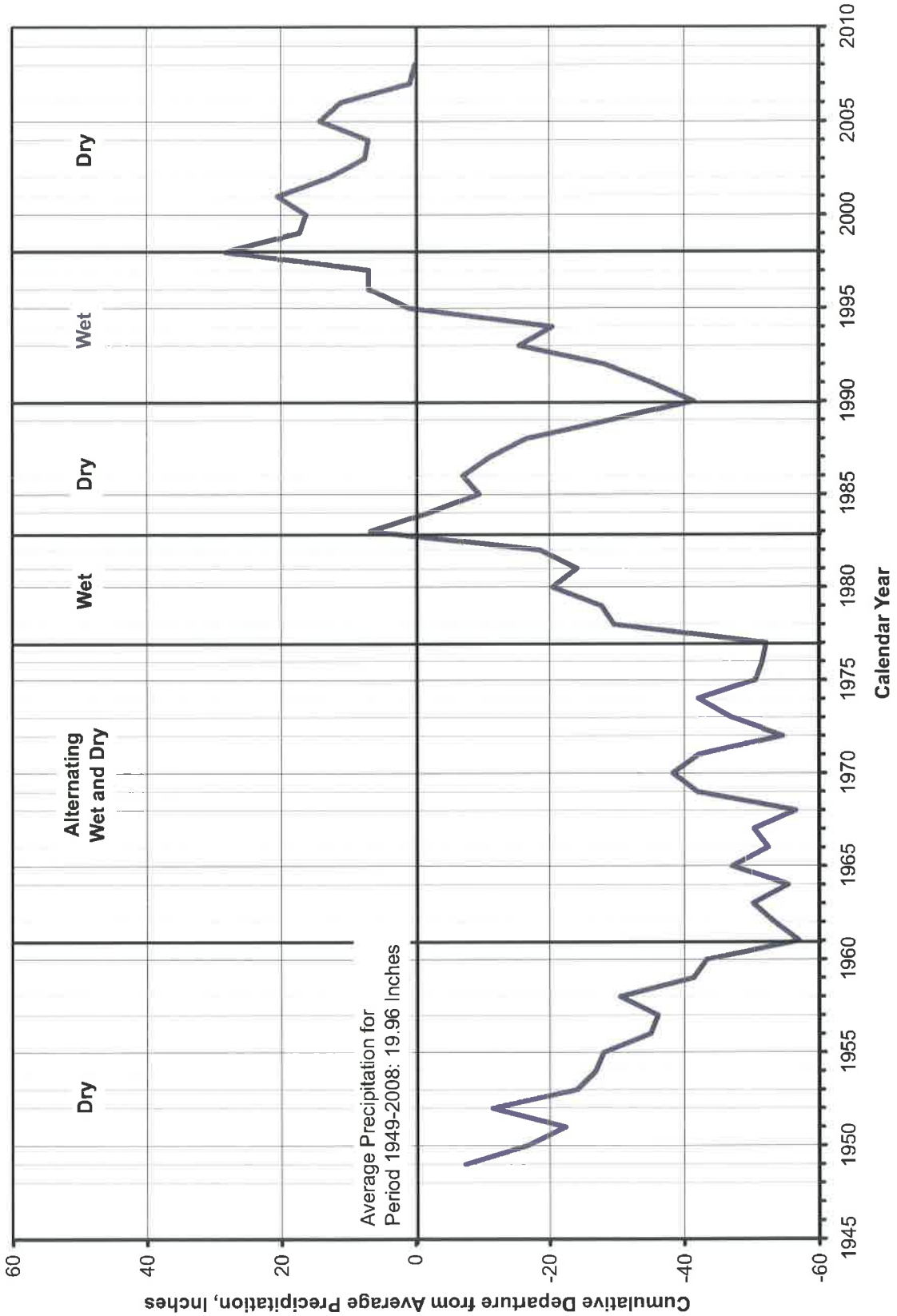
REFERENCES

Geotechnical Consultants, Inc. (1976), *Hydrogeologic Investigation of the Carpinteria Ground Water Basin,* consultant's unpublished report prepared for the Carpinteria County Water District, June 11.

_____ (1986), *Hydrogeologic Update, Carpinteria Groundwater Basin*, consultant's unpublished report prepared for the Carpinteria County Water District, July.

Integrated Water Resources, Inc. (IWR, 2003) *Perennial Yield Review of the Carpinteria Valley Groundwater Basin*, consultant's unpublished report prepared for the Carpinteria County Water District, February 25.

FIGURES



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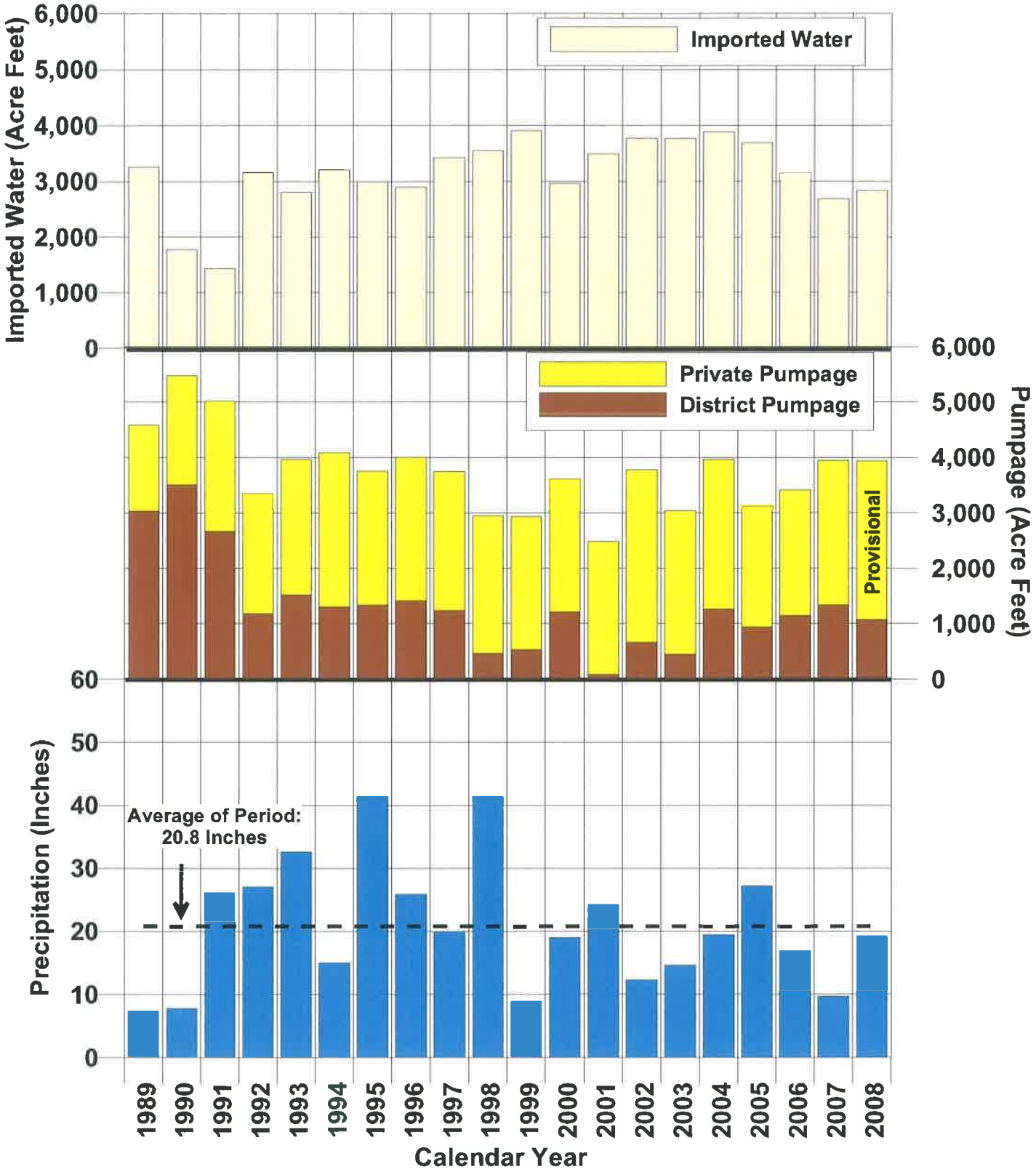
CUMULATIVE DEPARTURE FROM AVERAGE PRECIPITATION
Carpinteria Fire Station
Carpinteria Valley Water District

FIGURE 1



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WATER USE AND PRECIPITATION DATA
Carpinteria Valley Water District

FIGURE 2

PLATES

APPENDIX A
SUPPORTING DATA

State of California | Department of Water Resources | The Resources Agency

PUBLIC WATER SYSTEM STATISTICS

Calendar Year 2007

Carpinteria Valley WD
Robert McDonald, District Engineer
PO BOX 578
CARPINTERIA, CA 93013
PWS# 4210001 SD

1. General Information

Please follow the provided instructions.

Contact : Robert McDonald
Title: District Engineer
Phone: 805-684-2816
Fax: 805-684-3170
E-mail: bob@cvwd.net
Website: www.cvwd.net
County: **Santa Barbara**
Population served: **18685**
Names of communities served: City of Carpinteria and unincorporated areas of Santa Barbara County

2. Active Service Connections

Customer Class	Potable Water		Recycled Water	
	Metered	Unmetered	Metered	Unmetered
Single Family Residential	3026	0	0	0
Multi-family Residential	317	0	0	0
Commercial/Institutional	275	0	0	0
Industrial	70	0	0	0
Landscape Irrigation	0	0	0	0
Other	121	0	0	0
Agricultural Irrigation	423	0	0	0
TOTAL	4232	0	0	0

3. Total Water Into the System - Units of production:

☑ acre-feet ☐ million gallons ☐ hundred cubic feet

		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Potable	*Wells*	90.58	42.00	127.11	152.00	207.70	165.00	174.00	147.00	123.00	25.75	58.91	26.65	1339.7
	Surface	234.00	110.00	137.00	233.00	296.00	281.00	346.00	354.00	50.00	89.00	215.00	139.00	2484
	Purchased 1/	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	0.00	0.00	200
	Total Potable	324.58	152	264.11	385	503.7	446	520	501	273	214.75	273.91	165.65	4023.7
Untreated Water														
Recycled 2/														

1/ Potable wholesale supplier(s): State Water Project

2/ Recycled wholesale supplier(s):

Level of treatment:

4. Metered Water Deliveries - Units of delivery:

☑ acre-feet ☐ million gallons ☐ hundred cubic feet

If recycled is included, ✓box ↓	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
A.SingleFamilyResidential ☐	79.79	58.46	68.10	91.59	98.58	107.23	115.81	124.61	98.45	104.16	89.19	66.67	1102.638
B.Multi-family Residential ☐	42.86	31.32	35.47	42.62	43.06	47.81	47.92	54.48	42.26	46.37	39.75	31.34	505.2709
C.Commercial/Institutional ☐	37.37	25.08	30.25	43.71	54.72	52.98	68.68	65.66	52.64	47.71	41.73	27.81	548.3471
D.Industrial ☐	11.40	5.73	8.78	10.20	9.56	12.32	11.45	14.31	11.29	12.30	10.22	6.95	124.5225
E.Landscape Irrigation ☐													
F.Other ☐													
Total Urban Retail *(A thru F)*	171.4256	120.5969	142.5918	188.1221	205.9183	220.3352	243.8636	259.0657	204.6465	210.551	180.8907	132.7709	2280.778
Agricultural Irrigation ☐	167.17	68.43	123.52	172.71	221.32	210.58	268.93	277.39	197.35	221.17	171.36	128.64	2228.579
Wholesale *(to other agencies)* ☐													

State of California | DEPARTMENT OF WATER RESOURCES | California Natural Resources Agency

PUBLIC WATER SYSTEM STATISTICS

Calendar Year 2008

Carpinteria Valley WD
Robert McDonald, District Engineer
1301 SANTA YNEZ AVENUE
CARPINTERIA, CA 93013
PWS# 4210001 SD

1. General Information

Please follow the provided instructions.

Contact : Robert McDonald
Title: District Engineer
Phone: 805-684-2816
Fax: 805-684-3170
E-mail: bob@cvwd.net
Website: www.cvwd.net
County: **Santa Barbara**
Population served: **18685 (estimate)**
Names of communities served: City of Carpinteria and unincorporated areas of Santa Barbara County

2. Active Service Connections

Customer Class	Potable Water		Recycled Water	
	Metered	Unmetered	Metered	Unmetered
Single Family Residential	3068	0	0	0
Multi-family Residential	317	0	0	0
Commercial/Institutional	269	0	0	0
Industrial	60	0	0	0
Landscape Irrigation	0	0	0	0
Other	124	0	0	0
Agricultural Irrigation	430	0	0	0
TOTAL	4268	0	0	0

3. Total Water Into the System - Units of production:

☑ acre-feet ☐ million gallons ☐ hundred cubic feet

		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Potable	*Wells*	12	17	17.45	16.81	8.91	20.7	143.47	182.77	159.87	171.96	159.77	163.6	1074.31
	Surface	0	0	0	0	0	0	0	0	0	0	0	0	0
	Purchased 1/	96	75	282	376	385	440	292	233	241	274	126	22	2842
	Total Potable	108	92	299.45	392.81	393.91	460.7	435.47	415.77	400.87	445.96	285.77	185.6	3916.31
Untreated Water		0	0	0	0	0	0	0	0	0	0	0	0	0
Recycled 2/		0	0	0	0	0	0	0	0	0	0	0	0	0

1/ Potable wholesale supplier(s): Cachuma Water Project & State

2/ Recycled wholesale supplier(s):

Level of treatment:

4. Metered Water Deliveries - Units of delivery:

☐ acre-feet ☐ million gallons ☑ hundred cubic feet

If recycled is included, ✓box ↓	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
A.SingleFamilyResidential ☐	34287	29459	35181	48465	49830	55445	52469	56318	53527	45238	33963	30997	525179
B.Multi-family Residential ☐	10242	8799	10508	14476	14884	16561	15673	16822	15989	13513	10145	9259	156871
C.Commercial/Institutional ☐	11580	10400	12687	19543	21693	24857	22490	24839	21546	18937	12466	10163	211201
D.Industrial ☐	2671	2666	4487	4585	4817	5170	4959	5479	5558	4826	3731	3093	52042
E.Landscape Irrigation ☐	0	0	0	0	0	0	0	0	0	0	0	0	0
F.Other ☐													
Total Urban Retail *(A thru F)*	58780	51324	62863	87069	91224	102033	95591	103458	96620	82514	60305	53512	945293
Agricultural Irrigation ☐	32622	23463	55471	97714	97132	114479	106359	116945	109360	86702	52208	31204	923659
Wholesale *(to other agencies)* ☐	0	0	0	0	0	0	0	0	0	0	0	0	0

2008 Landuse

Calendar-year Well Extraction Estimate (Acre-feet - AF)

2008 Low* DT**	2008 Average DT	2008 High* DT	Long-term DT
1786	**2865**	4062	2473

Water-year Well Extraction Estimate (Acre-feet - AF)

2008 Low DT	2008 Average DT	2008 High DT	Long-term DT
1781	**2801**	3936	2569

Fiscal-year Well Extraction Estimate (Acre-feet - AF)

2008 Low DT	2008 Average DT	2008 High DT	Long-term DT
1861	**2905**	4077	2913

Determining Factors (Calendar-year)

	2008 Low DT	2008 Average DT	2008 High DT	Long-term DT	Acres Used for DT
Avocado	1.11	1.42	1.72	1.18	142
Cherimoyas / Fruit Trees	1.39	2.15	2.92	1.99	28
Covered Nurseries	2.19	3.68	5.17	3.28	56
Mixed Field Crops	0.75	1.26	1.77	1.29	0***
Lemons	0.01	0.75	1.48	0.88	13.5
Open Nurseries	0.75	1.26	1.77	1.29	82
Turf / Pasture	1.50	1.50	1.50	1.50	****

* Low / High = 95% Confidence Interval Values for Average
** DT = Determining Factors
*** Insufficient number of parcels for calculating values (1); open nursery values entered
**** Derived from long-term rainfall / evapotranspiration data

Santa Barbara County Flood Control District

123 E. Anapamu St., Santa Barbara, CA 93101
(805) 568-3440, Fax (805) 568-3434

Official Rainfall Record

Monthly Depth Durations and Expected Return Periods

Station: 208 **Station Type: Data Logger w/TB & Wedge** **Latitude: 342353 Longitude: 1193106**

Station Name: Carpinteria Fire Station **Elevation: 15**

WY	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	WY
1948-49	0.00	0.00	0.00	2.96	1.60	1.14	1.95	0.00	1.44	0.10	0.00	0.00	9.19
1949-50	0.00	0.00	2.71	3.51	2.51	3.06	1.33	0.43	0.00	0.15	0.10	0.00	13.80
1950-51	0.70	0.68	1.46	0.32	2.13	1.44	0.63	1.63	0.00	0.00	0.00	0.10	9.09
1951-52	0.00	0.90	2.05	5.48	12.08	0.05	7.18	2.27	0.00	0.00	0.00	0.00	30.01
1952-53	0.00	0.00	4.00	5.20	1.70	0.00	1.27	1.71	0.00	0.00	0.00	0.00	13.88
1953-54	0.00	0.00	2.60	0.15	6.25	2.70	4.35	0.38	0.00	0.00	0.00	0.00	16.43
1954-55	0.00	0.00	1.75	1.75	4.95	2.25	0.35	3.05	0.60	0.00	0.00	0.00	14.70
1955-56	0.00	0.00	1.65	5.93	7.80	0.82	0.00	2.83	1.12	0.00	0.00	0.00	20.15
1956-57	0.00	0.08	0.00	0.30	4.60	3.46	0.49	1.76	1.03	0.00	0.00	0.00	11.72
1957-58	0.00	1.70	0.80	5.00	3.08	8.77	6.51	5.68	0.32	0.00	0.00	0.00	31.86
1958-59	1.19	0.00	0.00	0.08	2.20	4.67	0.00	1.33	0.00	0.00	0.00	0.00	9.47
1959-60	0.00	0.00	0.00	0.92	3.60	3.72	1.26	2.17	0.00	0.00	0.00	0.00	11.67
1960-61	0.00	0.06	7.11	0.00	1.30	0.05	0.70	0.00	0.00	0.00	0.00	0.00	9.22
1961-62	0.20	0.00	2.93	1.12	2.62	19.09	1.43	0.00	0.00	0.00	0.00	0.00	27.39
1962-63	0.00	0.55	0.00	0.00	1.00	6.65	4.15	2.88	0.30	1.14	0.00	0.00	16.67
1963-64	2.10	1.15	3.69	0.00	1.70	0.00	2.00	2.57	0.10	0.00	0.00	0.00	13.31
1964-65	0.00	0.87	2.42	5.13	1.15	0.67	2.45	8.37	0.16	0.06	0.00	0.00	21.28
1965-66	0.21	0.00	11.02	4.17	1.98	1.14	0.11	0.00	0.23	0.00	0.00	0.00	18.86
1966-67	0.00	0.00	3.70	7.51	6.74	0.48	3.08	4.81	0.00	0.00	0.00	0.00	26.32
1967-68	0.40	0.00	5.39	1.20	2.01	1.69	4.40	1.04	0.00	0.00	0.00	0.14	16.27
1968-69	0.00	1.36	0.75	2.27	18.31	10.62	0.54	2.03	0.18	0.09	0.00	0.00	36.15
1969-70	0.00	0.00	2.55	0.24	3.40	2.57	6.51	0.00	0.00	0.00	0.00	0.00	15.27
1970-71	0.00	0.06	5.31	5.71	1.32	2.36	0.97	0.62	2.34	0.00	0.00	0.00	18.69
1971-72	0.00	0.15	0.62	7.81	0.70	0.00	0.00	0.19	0.00	0.12	0.00	0.00	9.59
1972-73	0.00	0.25	5.24	0.99	6.94	11.75	3.42	0.06	0.23	0.05	0.00	0.14	29.07
1973-74	0.00	0.64	3.14	1.34	9.79	0.16	4.74	0.28	0.00	0.00	0.00	0.00	20.09
1974-75	0.00	1.00	0.15	8.67	0.00	4.62	4.70	1.29	0.00	0.00	0.00	0.00	20.43
1975-76	0.16	0.20	0.11	0.31	0.00	7.40	2.59	1.01	0.03	0.26	0.00	0.00	12.07
1976-77	6.35	0.00	0.51	0.82	4.33	0.26	1.90	0.00	4.39	0.12	0.00	0.68	19.36
1977-78	0.00	0.00	0.30	7.40	9.91	10.81	12.79	2.74	0.00	0.10	0.00	0.09	44.14
1978-79	1.55	0.10	2.03	2.41	3.63	5.68	8.56	0.00	0.09	0.00	0.00	0.18	24.23
1979-80	0.80	0.73	0.73	1.38	7.62	13.14	4.13	0.85	0.21	0.00	0.05	0.00	29.64
1980-81	0.03	0.00	0.00	1.21	3.19	2.24	6.38	0.91	0.00	0.00	0.00	0.00	13.96
1981-82	0.56	0.00	2.08	1.00	3.47	0.62	6.23	3.03	0.15	0.12	0.00	0.00	17.26
1982-83	1.47	0.65	6.22	3.49	9.98	7.05	8.44	4.19	0.35	0.20	0.00	1.84	43.88
1983-84	1.09	4.41	3.94	3.71	0.04	0.00	0.39	0.27	0.29	0.00	0.00	0.65	14.79
1984-85	0.62	0.51	2.86	5.67	1.68	2.09	1.69	0.14	0.00	0.00	0.00	0.00	15.26
1985-86	0.08	0.73	5.03	0.98	2.35	8.61	6.20	1.80	0.00	0.00	0.00	0.00	25.78
1986-87	1.61	0.00	1.41	0.41	2.33	2.54	3.54	0.15	0.00	0.00	0.00	0.00	11.99
1987-88	0.00	1.52	1.92	3.92	2.90	2.72	0.60	3.76	0.00	0.00	0.00	0.00	17.34
1988-89	0.10	0.00	1.18	3.28	0.50	3.58	0.60	0.78	0.25	0.00	0.00	0.00	10.27
1989-90	0.08	1.07	0.47	0.00	3.13	3.04	0.16	0.10	0.88	0.00	0.00	0.00	8.93
1990-91	0.06	0.00	0.32	0.06	1.79	2.55	14.92	0.04	0.00	0.30	0.02	0.05	20.11
1991-92	0.00	0.62	0.21	5.63	3.10	10.46	4.46	0.00	0.34	0.10	0.47	0.00	25.39
1992-93	0.00	1.94	0.00	6.18	13.88	8.32	6.08	0.00	0.10	0.87	0.08	0.00	37.45
1993-94	0.00	0.10	1.54	1.65	1.09	6.51	2.32	0.73	0.40	0.00	0.00	0.00	14.34
1994-95	0.47	0.45	1.78	1.27	21.42	1.92	12.22	0.39	0.98	0.69	0.00	0.00	41.59
1995-96	0.00	0.00	0.24	3.49	2.27	9.54	2.31	1.28	0.42	0.00	0.00	0.00	19.55
1996-97	0.00	3.03	0.00	7.01	7.83	0.10	0.00	0.00	0.00	0.10	0.00	0.00	18.07
1997-98	0.00	0.09	3.22	8.64	4.97	23.55	4.16	2.38	4.31	0.16	0.00	0.00	51.48
1998-99	0.12	0.00	0.75	0.95	2.26	0.86	3.16	1.87	0.00	0.02	0.00	0.00	9.99
1999-00	0.02	0.00	0.72	0.00	1.43	8.66	2.74	3.90	0.00	0.00	0.00	0.00	17.47
2000-01	0.00	2.18	0.00	0.08	6.30	5.24	4.73	1.67	0.18	0.02	0.03	0.00	20.43
2001-02	0.04	0.49	3.75	1.78	0.59	0.31	0.37	0.11	0.14	0.01	0.05	0.02	7.66
2002-03	0.20	0.01	5.88	4.59	0.09	2.91	4.46	1.90	1.72	0.19	0.02	0.00	21.97
2003-04	0.04	0.09	1.31	1.89	0.42	5.18	0.57	0.01	0.02	0.01	0.03	0.00	9.57
2004-05	0.00	4.46	0.10	8.62	11.20	7.41	3.96	0.74	1.01	0.02	0.00	0.04	37.56
2005-06	0.20	1.08	0.82	0.72	2.82	2.88	3.26	5.88	0.90	0.00	0.00	0.02	18.58
2006-07	0.01	0.09	0.26	0.72	3.24	1.86	0.18	0.70	0.00	0.02	0.01	0.02	7.11

Santa Barbara County Flood Control District

123 E. Anapamu St., Santa Barbara, CA 93101
(805) 568-3440, Fax (805) 568-3434

Official Rainfall Record

Monthly Depth Durations and Expected Return Periods

Station: 208 **Station Type: Data Logger w/TB & Wedge** **Latitude: 342353 Longitude: 1193106**

Station Name: Carpinteria Fire Station **Elevation: 15**

WY	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	WY
Total	20.46	34.00	120.73	167.03	251.22	261.97	198.62	88.71	25.21	5.02	0.86	3.97	1177.80
N	59	59	59	59	59	59	59	59	59	59	59	59	59
Mean	0.35	0.58	2.05	2.83	4.26	4.44	3.37	1.50	0.43	0.09	0.01	0.07	19.96
Max	6.35	4.46	11.02	8.67	21.42	23.55	14.92	8.37	4.39	1.14	0.47	1.84	51.48
Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.11
StdDev	0.92	0.96	2.19	2.65	4.35	4.72	3.26	1.73	0.87	0.21	0.06	0.26	10.10
CV	2.65	1.67	1.07	0.94	1.02	1.06	0.97	1.15	2.05	2.41	4.31	3.92	0.51
Reg CV	2.68	1.28	1.03	0.84	0.90	0.99	0.87	1.11	1.83	2.91	3.81	4.10	0.44
Reg Skew	3.80	1.80	1.40	1.00	1.60	1.10	1.10	1.70	2.60	3.60	4.40	4.80	1.10
FIC	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Return Period in Years													
2	0.00	0.37	1.56	2.45	3.30	3.65	2.84	1.05	0.14	0.00	0.00	0.00	18.38
5	0.59	1.05	3.54	4.64	6.86	7.74	5.56	2.61	0.80	0.16	0.02	0.09	26.55
10	1.31	1.55	4.87	6.02	9.35	10.33	7.29	3.71	1.38	0.35	0.07	0.30	31.73
25	2.44	2.19	6.54	7.68	12.54	13.50	9.40	5.14	2.20	0.64	0.14	0.66	38.06
50	3.38	2.68	7.74	8.87	14.91	15.83	10.95	6.19	2.84	0.89	0.20	0.98	42.71
100	4.35	3.16	8.94	10.01	17.25	18.02	12.42	7.24	3.50	1.14	0.26	1.32	47.10
200	5.37	3.64	10.12	11.13	19.55	20.18	13.85	8.30	4.16	1.40	0.33	1.68	51.41
500	7.43	4.44	11.97	12.75	23.34	23.34	15.96	10.03	5.31	1.92	0.47	2.44	57.73
1000	7.82	4.74	12.80	13.60	24.84	24.97	17.04	10.70	5.74	2.02	0.49	2.56	60.98
10000	11.47	6.31	16.53	17.00	32.31	31.65	21.50	14.09	8.04	2.95	0.74	3.89	74.33