Central Coast Watershed Studies

CCoWS

Summary of Precipitation and Streamflow for Potrero and San Clemente Creeks in Water-Year 2007

Santa Lucia Preserve
Monterey County, California

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Publication No. WI-2008-01

1 March 2008

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Executive Summary

In March 2007 CSU-Monterey Bay began hydrologic monitoring of Santa Lucia Preserve for the Santa Lucia Conservancy. This project is a continuation of monitoring begun by Balance Hydrologics as part of the permit requirements for land development. The purpose of this annual report is to present data summaries for the 2007 water year (October 1, 2006 to September 31, 2007). Rainfall in water year 2007 was very low, representing the 15 year drought rainfall. Streamflow was relatively low as well as indicated by baseflow conditions approaching the drought conditions of water-year 1991 (Croyle and Smith, 2007).

This report can be cited as:

Croyle, Z. and Smith, D., 2008, Summary of Precipitation and Streamflow for Potrero and San Clemente Creeks in Water-Year 2007, Santa Lucia Preserve, Monterey County, California: Prepared for the Santa Lucia Conservancy. The Watershed Institute, California State University Monterey Bay, Publication No. WI-2008-1, 30pp.

Acknowledgements

We are grateful for the assistance of:

- Jim Sulentich (Santa Lucia Conservancy)
- Chris Hauser (Santa Lucia Conservancy)
- Cory Isom and Leif Utegaard (Santa Lucia Conservancy)
- Scott Brown and Barry Hecht (Balance Hydrologics)
- Bruce Cyr (CSU-Monterey Bay)

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1 Introduction

This report is a hydrologic data summary for Santa Lucia Preserve for Water Year 2007 (WY-07). Data summaries are presented for streamflow on Potrero and San Clemente Creeks and for precipitation on Santa Lucia Preserve and San Clemente Dam.

Balance Hydrologics has operated four continuously recording streamflow gages on Santa Lucia Preserve. These gages include two on Las Garzas Creek (Moore's Lake inflow and outflow, installed in 2001), one on Potrero Creek (installed in 2002), and one on San Clemente Creek (installed in 2002). Detailed information on gage installation, operation and individual gage sites is available in Balance Hydrologics (2002). WY-07 streamflow data for both gaging stations on Las Garzas Creek can be found in Balance Hydrologics (2007a). Operation of the Potrero Creek and San Clemente Creek streamflow gages was transferred to CSUMB Watershed Institute on June 21, 2007.

2 Precipitation Data

Precipitation data presented here is from a Rain Bird weather station operated by Santa Lucia Preserve. Precipitation data recorded by California American Water Company at nearby San Clemente Dam are also included for comparison.

WY-07 was an extremely dry year, ranking the eighth driest year since 1922 (based on the 86-year San Clemente Dam precipitation record). At San Clemente Dam the total WY-07 rainfall was 11.37 inches (Table 1 and Figure 1). The average rainfall at the Dam is 21.42 inches. Using Log-Pearson Type-III analysis, rainfall at San Clemente Dam should be 11.37 (or less) once every 15 years on average (Figure 2). Total recorded rainfall at Santa Lucia Preserve in WY-07 was 15.5 inches (Table 2 and Figure 3).

3 Streamflow, Temperature, and Conductance Data

The streamflow gaging stations on Potrero and San Clemente each consist of a Campbell CR10X data logger (powered by 10 or 20 watt solar panels), two Druck pressure transducers to measure water depth, Campbell specific conductance

and water temperature probe, as well as staff plates for manual readings (Balance Hydrologics 2002). Data loggers record measurements of pressure, temperature, and conductance at 15-minute intervals.

In WY-07, streamflow gage data was downloaded to a laptop computer during monthly visits, at which time manual discharge measurements were also taken using standard hydrologic practices. A Swoffer (model 3000) current velocity meter was used to measure discharge. A portable Parshall flume was used during the latter part of the dry season when flows became too low to use the Swoffer meter.

3.1 Potrero Creek

The current gage station on Potrero Creek was installed April 29, 2002 and is located upstream of the T-11 well. In WY-07, Potrero Creek had a mean daily flow of 0.19 cfs, a maximum daily flow of 5.15 cfs, and a minimum daily flow of <0.01 cfs; the 7-day low flow was also <0.01 cfs (Table 3). Mean daily streamflow and manual discharge measurements are plotted in Figure 4. Temperature and conductance data are presented in Tables 4 through 7, and in Figure 5.

3.2 San Clemente Creek

The current gage station on San Clemente Creek was installed April 30, 2002 and is located near the Santa Lucia Preserve property boundary. In WY-07, San Clemente Creek had a mean daily flow of 0.42 cfs, a maximum daily flow of 8.09 cfs, and a minimum daily flow of 0.03 cfs; the 7-day low flow was 0.04 cfs (Table 8). Mean daily streamflow and manual discharge measurements are plotted in Figure 6. Temperature and conductance data are presented in Tables 9 through 12, and in Figure 7.

4 Limitations

Streamflow gage data are based on the stage-discharge relationship unique to each stream and gage location. This stage-discharge relationship (rating curve) for each gage has been developed over time by making manual discharge measurements at various ranges of flow and noting the water level (stage) at which a particular flow occurs. As more discharge measurements are made (particularly in the higher range of flows) the rating curves may change and it will be necessary to update the streamflow data to reflect these changes. For

this reason, the streamflow data contained in this report should be considered provisional and caution should be exercised when using these data.

5 References

[Balance Hydrologics 2002]. Brown S, Porter S, Woyshner M, Hecht B. 2002. Hydrologic record for water year 2002: Las Garzas, Potrero, and San Clemente Creeks, Santa Lucia Preserve, Monterey County, California. 53 pp.

[Balance Hydrologics 2006]. Brown S. 2006. Stream gaging and precipitation data summary for water year 2006, Santa Lucia Preserve, Monterey County, California. 30pp.

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[Balance Hydrologics 2007b]. Brown S. 2007. Stream gaging data summary for water year 2007 (through June 20), Potrero and San Clemente Creeks, Santa Lucia Preserve, Monterey County, California. 16pp.

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Available:
http://ccows.csumb.edu/home/pubs/reports/CCoWS_SLP_Annual_Baseflow_Report_071015.pdf

6 Tables

Table 1: Daily precipitation record and monthly totals, water year 2007

_____San Clemente Dam. Monterey County, California

Values are inches

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1						0.01						
2	T	0.02										
3		0.03										
4				0.12				0.06				
5	0.16			0.17								
6												
7												
8					0.06							
9			0.50									
10			1.33		0.33							
11		0.13	0.01		0.75		0.05					
12			0.10				0.04					
13		0.02	0.05		0.11							
14		0.75					0.35					
15			0.01									
16	T						T					
17	T			0.25								
18			0.14				0.04					
19												
20						0.28	0.36					0.03
21						0.40						
22			0.36		0.52		0.21					0.29
23		0.04			0.40							0.09
24										0.02		
25												
26					0.22							
27		0.14	0.72	0.20	0.73	0.67						
28		0.03			0.40							
29				0.10								0.01
30				T								
31												

Total	0.16	1.16	3.22	0.84	3.52	1.36	1.05	0.06	0.00	0.02	0.00	0.42

Annual Total 11.81

(note-T = trace, which is rainfall of less than 0.01 inches)

Table 2: Daily precipitation record and monthly totals, water year 2007

_____Santa Lucia Preserve Golf Course, Monterey County, California

Values are inches

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1				0.01								
2		0.16						0.03				
3												
4				0.36				0.16				
5	0.13			0.05								
6												
7					0.01							
8					0.11	0.01						
9			1.26									
10			2.05		0.35							
11		0.07			1.03		0.10					
12		0.06	0.13	0.03	0.04							
13		0.02	0.01	0.01	0.22							
14		0.53					0.45					
15			0.07				0.04					
16	0.02		0.00									
17			0.23	0.27			0.01					
18							0.04					
19												
20					0.01	0.14	0.29					
21						0.06						
22			0.71		0.70		0.34					0.30
23		0.07			0.32							
24					0.24							
25					0.49							
26		0.01			0.20							
27		0.30	0.73	0.08	1.38	0.62						
28				0.12	0.23							
29		0.01		0.08								
30												
31												

Total	0.15	1.23	5.19	1.01	5.33	0.83	1.27	0.19	0.00	0.00	0.00	0.30

Annual Total 15.50

Table 3: Mean daily flow, Potrero Creek, water year 2007

_____Santa Lucia Preserve, Monterey County, California

Values are cfs (unless otherwise noted), dashes indicate missing data.

Data in italics from Balance Hydrologics 2007b; data in bold from CSUMB.

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	*0.12*	*0.13*	*0.1*	*0.13*	*0.12*	*2.16*	*0.22*	*0.11*	*0.13*	**0.04**	**0.10**	**0.08**
2	*0.09*	*0.14*	*0.11*	*0.12*	*0.11*	*1.28*	*0.19*	*0.15*	*0.13*	**0.03**	**0.09**	**0.04**
3	*0.08*	*0.15*	*0.11*	*0.14*	*0.05*	*0.94*	*0.17*	*0.12*	*0.11*	**0.05**	**0.09**	**0.04**
4	*0.1*	*0.14*	*0.11*	*0.61*	*0.06*	*0.83*	*0.19*	*0.15*	*0.12*	**0.06**	**0.09**	**0.06**
5	*0.14*	*0.12*	*0.11*	*0.26*	*0.07*	*0.76*	*0.22*	*0.12*	*0.13*	**0.09**	**0.11**	**0.02**
6	*0.13*	*0.12*	*0.1*	*0.1*	*0.07*	*0.56*	*0.24*	*0.1*	*0.1*	**0.11**	**0.08**	**0.00**
7	*0.13*	*0.13*	*0.09*	*0.09*	*0.11*	*0.6*	*0.26*	*0.13*	*0.09*	**0.06**	**0.05**	**0.01**
8	*0.13*	*0.15*	*0.22*	*0.1*	*0.18*	*0.57*	*0.25*	*0.14*	*0.08*	**0.07**	**0.05**	**0.01**
9	*0.12*	*0.1*	*1.11*	*0.1*	*0.17*	*0.48*	*0.2*	*0.13*	*0.07*	**0.05**	**0.07**	**0.01**
10	*0.15*	*0.07*	*0.54*	*0.1*	*0.46*	*0.43*	*0.15*	*0.14*	*0.08*	**0.06**	**0.06**	**0.01**
11	*0.14*	*0.12*	*0.15*	*0.11*	*0.68*	*0.48*	*0.17*	*0.14*	*0.08*	**0.06**	**0.07**	**0.01**
12	*0.14*	*0.1*	*0.14*	*0.06*	*0.25*	*0.49*	*0.17*	*0.13*	*0.04*	**0.05**	**0.05**	**0.02**
13	*0.15*	*0.22*	*0.13*	*0.02*	*0.26*	*0.47*	*0.11*	*0.12*	*0.03*	**0.03**	**0.02**	**0.01**
14	*0.17*	*0.52*	*0.13*	*0.02*	*0.22*	*0.38*	*0.27*	*0.12*	*0.04*	**0.06**	**0.02**	**0.01**
15	*0.17*	*0.15*	*0.17*	*0.03*	*0.16*	*0.34*	*0.18*	*0.13*	*0.03*	**0.08**	**0.03**	**0.01**
16	*0.18*	*0.14*	--	*0.04*	*0.16*	*0.36*	*0.12*	*0.13*	*0.07*	**0.09**	**0.03**	**0.02**
17	*0.16*	*0.17*	--	*0.16*	*0.17*	*0.33*	*0.14*	*0.13*	*0.06*	**0.07**	**0.02**	**0.02**
18	*0.12*	*0.17*	--	*0.09*	*0.19*	*0.38*	*0.11*	*0.11*	*0.05*	**0.09**	**0.02**	**0.02**
19	*0.11*	*0.16*	--	*0.1*	*0.12*	*0.39*	*0.1*	*0.11*	*0.06*	**0.07**	**0.02**	**0.02**
20	*0.12*	*0.15*	--	*0.12*	*0.14*	*0.38*	*0.16*	*0.08*	**0.11**	**0.06**	**0.03**	**0.01**
21	*0.12*	*0.17*	--	*0.11*	*0.09*	*0.35*	*0.1*	*0.12*	**0.05**	**0.08**	**0.04**	**0.01**
22	*0.11*	*0.16*	--	*0.09*	*0.41*	*0.24*	*0.15*	*0.07*	**0.03**	**0.11**	**0.07**	**0.07**
23	*0.12*	*0.15*	--	*0.08*	*0.57*	*0.24*	*0.13*	*0.05*	**0.03**	**0.11**	**0.06**	**0.03**
24	*0.12*	*0.09*	--	*0.05*	*0.42*	*0.26*	*0.12*	*0.06*	**0.03**	**0.13**	**0.05**	**0.01**
25	*0.11*	*0.15*	--	*0.09*	*0.59*	*0.28*	*0.15*	*0.07*	**0.03**	**0.15**	**0.04**	**0.01**
26	*0.08*	*0.2*	--	*0.11*	*0.95*	*0.37*	*0.15*	*0.11*	**0.04**	**0.15**	**0.05**	**0.01**
27	*0.08*	*0.24*	--	*0.18*	*4.7*	*0.48*	*0.13*	*0.12*	**0.06**	**0.12**	**0.06**	**0.01**
28	*0.08*	*0.17*	--	*0.16*	*5.15*	*0.25*	*0.14*	*0.12*	**0.05**	**0.11**	**0.05**	**0.02**
29	*0.09*	*0.12*	--	*0.12*		*0.19*	*0.14*	*0.11*	**0.06**	**0.10**	**0.04**	**0.01**
30	*0.13*	*0.09*	--	*0.11*		*0.18*	*0.14*	*0.12*	**0.05**	**0.11**	**0.05**	**0.00**
31	*0.14*		*0.18*	*0.14*		*0.2*		*0.11*		**0.10**	**0.04**	
Mean	0.12	0.16	0.22	0.12	0.59	0.50	0.17	0.11	0.07	0.08	0.05	0.02
Max Day	0.18	0.52	1.11	0.61	5.15	2.16	0.27	0.15	0.13	0.15	0.11	0.08
Min Day	0.08	0.07	0.09	0.02	0.05	0.18	0.10	0.05	0.03	0.03	0.02	<0.01
Yield (ac-ft)	7.60	9.30	13.45	7.42	32.99	31.04	9.86	7.04	4.04	5.10	3.22	1.24

Water Year 2007 Annual Summary		
Mean Daily Flow	0.19	cfs
Max. Daily Flow	5.15	cfs
Min. Daily Flow	<0.01	cfs
7-Day Low Flow	<0.01	cfs
Total Yield	132.30	ac-ft
Normalized Yield	0.04	ac-ft/ac

yr	day	cfs
1992	7/10	0.02
1993	7/21	0.04
1994	8/14	0.02
1995	9/19	0.02
2002	8/8	0.01
2003	8/23	0.01
2004	8/27	0.00
2005	9/30	0.05
2006	9/17	0.06
2007	9/6	<.01

Approximate date and value of first minimum daily mean flow near the end of each water year.

Table 4: Mean Daily Water Temperature (°C)

Potrero Creek, Water Year 2007

dashes indicate missing data

Data in italics from Balance Hydrologics 2007b; data in bold from CSUMB

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	*12.4*	*9.7*	*6.5*	*7.1*	*7.8*	*8.1*	*9.9*	*10.5*	*11.6*	**11.90**	**13.60**	**14.14**
2	*12*	*10.9*	*6.5*	*6.9*	*7.8*	*8.1*	*9.7*	*10.8*	*11.6*	**11.88**	**13.68**	**13.91**
3	*11.1*	*11.7*	*6.5*	*7.2*	*6.9*	*8.2*	*9.6*	*10.7*	*11.6*	**12.20**	**13.53**	**13.71**
4	*11.7*	*11.8*	*6.4*	*8.1*	*6.9*	*8.8*	*9.9*	*10.9*	*12*	**12.33**	**13.26**	**13.81**
5	*12.3*	*11.1*	*6.4*	*7.6*	*7.2*	*9.5*	*10.3*	*10.7*	*12.4*	**12.49**	**13.36**	**13.75**
6	*11.5*	*11.3*	*6.2*	*6.2*	*7.3*	*8.9*	*10.6*	*10.5*	*12.3*	**12.61**	**13.58**	**13.59**
7	*12.2*	*11.6*	*6.1*	*6.1*	*7.9*	*9.7*	*10.9*	*11*	*11.9*	**12.67**	**13.17**	**13.75**
8	*11.7*	*11.8*	*6.4*	*6.3*	*8.6*	*10*	*11*	*11.4*	*11.8*	**12.60**	**13.18**	**13.60**
9	*11.6*	*10.4*	*8.2*	*6.4*	*9.2*	*9.7*	*10.6*	*11.4*	*11.7*	**12.65**	**13.46**	**13.84**
10	*12.3*	*9.3*	*8.9*	*6.4*	*9.8*	*9.5*	*10.1*	*11.4*	*12.1*	**12.87**	**13.38**	**13.55**
11	*12*	*9.6*	*8.2*	*6.7*	*10.4*	*10*	*10.1*	*11.3*	*12.1*	**12.97**	**13.48**	**13.47**
12	*11.5*	*9*	*8.8*	*6*	*9.2*	*10.5*	*10.3*	*11.2*	*11.7*	**12.77**	**13.49**	**13.73**
13	*11.4*	*9.5*	*9.8*	*4.8*	*9.4*	*10.8*	*9.7*	*11.2*	*11.8*	**12.67**	**12.98**	**13.60**
14	*12.2*	*10.9*	*10.2*	*4.1*	*9.5*	*10.5*	*9.8*	*11.1*	*12.1*	**12.93**	**12.65**	**13.66**
15	*12.4*	*9.9*	*10.2*	*3.9*	*9*	*10.1*	*10.2*	*11.2*	*12*	**13.21**	**12.81**	**13.55**
16	*12.4*	*9.6*	--	*3.7*	*9*	*10.4*	*9.9*	*11.2*	*12.2*	**13.35**	**12.97**	**13.43**
17	*12.3*	*10.6*	--	*4.4*	*9.3*	*10.2*	*10.2*	*11.3*	*11.9*	**13.22**	**12.66**	**13.60**
18	*10.9*	*10.6*	--	*4.5*	*9.8*	*10.8*	*10.1*	*11.1*	*11.9*	**13.50**	**12.55**	**13.56**
19	*10.5*	*10.4*	--	*4.5*	*9.2*	*11.1*	*9.7*	*11.1*	*12.2*	**13.43**	**12.57**	**13.49**
20	*10.8*	*10.3*	--	*4.95*	*9.49*	*11*	*9.8*	*10.7*	*12.37*	**13.23**	**13.02**	**13.13**
21	*11*	*10.5*	--	*5*	*8.86*	*10.8*	*9.52*	*11.3*	**12.50**	**13.48**	**13.42**	**12.88**
22	*10.6*	*10.3*	--	*4.8*	*9.4*	*10.1*	*10.2*	*10.9*	**12.20**	**13.68**	**13.74**	**13.04**
23	*10.5*	*10.1*	--	*4.65*	*8.41*	*10.2*	*10.3*	*10.7*	**11.98**	**14.03**	**13.84**	**12.80**
24	*10.5*	*8.2*	--	*4.74*	*7.78*	*10.5*	*9.92*	*10.7*	**11.70**	**14.20**	**13.79**	**12.53**
25	*10.4*	*8.79*	--	*5.67*	*9.12*	*10.9*	*10.3*	*10.7*	**11.59**	**14.01**	**13.49**	**12.50**
26	*9.3*	*9.63*	--	*6.07*	*9.49*	*10.9*	*10.4*	*11*	**11.70**	**13.87**	**13.74**	**12.51**
27	*9.12*	*9.58*	--	*6.87*	*8.92*	*10.5*	*10.3*	*11.2*	**12.00**	**13.76**	**13.95**	**12.46**
28	*9.17*	*8.45*	--	*7.22*	*8.49*	*9.85*	*10.7*	*11.4*	**11.99**	**13.71**	**13.78**	**12.72**
29	*9*	*7.4*	--	*7.1*		*9.3*	*10.9*	*11.3*	**12.28**	**13.75**	**13.85**	**12.43**
30	*9.9*	*6.6*	--	*7.1*		*9.4*	*10.9*	*11.5*	**12.16**	**13.75**	**13.95**	**11.73**
31	*10.2*		*7.5*	*7.9*		*9.5*		*11.5*		**13.58**	**14.23**	
Mean Day	11.12	9.99	7.68	5.90	8.72	9.93	10.20	11.07	11.98	13.14	13.39	13.28
Max Day	12.40	11.80	10.20	8.10	10.40	11.10	11.00	11.50	12.50	14.20	14.23	14.14
Min Day	9.00	6.60	6.10	3.70	6.90	8.10	9.52	10.50	11.59	11.88	12.55	11.73

Table 5: Maximum Daily Water Temperature (°C)

Potrero Creek, Water Year 2007

dashes indicate missing data

Data in italics from Balance Hydrologics 2007b; data in bold from CSUMB

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	*12.80*	*10.40*	*7.20*	*7.80*	*8.10*	*8.70*	*10.40*	*11.10*	*11.70*	**12.24**	**13.75**	**14.39**
2	*12.50*	*11.50*	*7.10*	*7.50*	*8.00*	*8.70*	*10.40*	*11.10*	*11.70*	**12.28**	**13.86**	**14.31**
3	*11.80*	*12.10*	*7.20*	*7.70*	*7.50*	*9.00*	*10.20*	*11.00*	*11.90*	**12.48**	**13.76**	**14.10**
4	*12.20*	*12.10*	*7.00*	*8.40*	*7.50*	*9.60*	*10.40*	*11.00*	*12.40*	**12.63**	**13.64**	**14.09**
5	*12.50*	*11.60*	*7.00*	*8.30*	*7.80*	*10.00*	*10.60*	*11.00*	*12.50*	**12.67**	**13.57**	**14.06**
6	*12.30*	*11.80*	*6.70*	*6.70*	*7.80*	*9.50*	*10.80*	*11.10*	*12.50*	**12.79**	**13.71**	**13.87**
7	*12.50*	*11.90*	*6.70*	*6.80*	*8.40*	*10.10*	*11.40*	*11.60*	*12.20*	**12.78**	**13.55**	**13.95**
8	*12.30*	*12.00*	*7.50*	*6.70*	*9.00*	*10.40*	*11.30*	*11.90*	*12.00*	**12.76**	**13.43**	**13.87**
9	*12.10*	*11.30*	*8.80*	*6.70*	*9.50*	*10.20*	*11.00*	*11.90*	*12.00*	**12.91**	**13.65**	**14.00**
10	*12.60*	*9.90*	*9.10*	*6.80*	*10.40*	*10.10*	*10.70*	*11.60*	*12.30*	**13.03**	**13.61**	**13.90**
11	*12.50*	*10.10*	*8.80*	*6.90*	*10.60*	*10.80*	*10.50*	*11.60*	*12.30*	**13.18**	**13.62**	**13.65**
12	*12.10*	*9.50*	*9.50*	*6.60*	*10.10*	*11.20*	*10.60*	*11.40*	*12.10*	**13.15**	**13.64**	**13.89**
13	*12.00*	*10.40*	*10.20*	*5.60*	*9.70*	*11.30*	*10.30*	*11.50*	*12.30*	**12.98**	**13.53**	**13.82**
14	*12.40*	*11.20*	*10.40*	*4.60*	*9.90*	*11.10*	*10.10*	*11.40*	*12.40*	**13.18**	**13.11**	**13.84**
15	*12.50*	*10.50*	*10.40*	*4.20*	*9.50*	*10.80*	*10.40*	*11.30*	*12.40*	**13.47**	**13.14**	**13.83**
16	*12.60*	*10.30*	*--*	*4.00*	*9.70*	*10.90*	*10.30*	*11.40*	*12.30*	**13.47**	**13.21**	**13.61**
17	*12.60*	*10.90*	*--*	*4.80*	*9.80*	*10.70*	*10.50*	*11.60*	*12.20*	**13.45**	**13.15**	**13.75**
18	*11.80*	*10.90*	*--*	*4.70*	*10.00*	*11.30*	*10.40*	*11.50*	*12.20*	**13.75**	**12.84**	**13.72**
19	*11.30*	*10.80*	*--*	*5.00*	*9.90*	*11.40*	*10.10*	*11.30*	*12.50*	**13.73**	**12.93**	**13.57**
20	*11.50*	*10.80*	*--*	*5.30*	*9.80*	*11.30*	*10.10*	*11.10*	**12.50**	**13.53**	**13.41**	**13.43**
21	*11.60*	*10.90*	*--*	*5.30*	*9.40*	*11.10*	*9.90*	*11.60*	**12.71**	**13.78**	**13.72**	**13.06**
22	*11.30*	*10.70*	*--*	*5.20*	*9.60*	*10.70*	*10.60*	*11.50*	**12.62**	**13.93**	**13.86**	**13.18**
23	*11.10*	*10.40*	*--*	*5.00*	*9.00*	*10.70*	*10.70*	*11.20*	**12.34**	**14.26**	**14.04**	**13.14**
24	*11.00*	*9.00*	*--*	*5.30*	*8.70*	*10.90*	*10.50*	*11.10*	**12.05**	**14.27**	**13.96**	**12.84**
25	*11.00*	*9.40*	*--*	*6.00*	*9.60*	*11.30*	*10.50*	*11.00*	**11.94**	**14.15**	**13.87**	**12.75**
26	*10.10*	*9.90*	*--*	*6.60*	*9.80*	*11.30*	*10.80*	*11.20*	**11.91**	**13.99**	**13.97**	**12.76**
27	*10.00*	*9.90*	*--*	*7.30*	*9.70*	*11.10*	*10.90*	*11.40*	**12.29**	**13.92**	**14.09**	**12.73**
28	*9.90*	*9.20*	*--*	*7.40*	*8.80*	*10.30*	*11.10*	*11.70*	**12.33**	**13.90**	**14.02**	**12.90**
29	*9.70*	*8.00*	*--*	*7.50*		*10.00*	*11.10*	*11.60*	**12.56**	**13.92**	**14.06**	**12.89**
30	*10.20*	*7.20*	*--*	*7.60*		*10.00*	*11.30*	*11.70*	**12.52**	**13.90**	**14.21**	**12.22**
31	*10.50*		*7.80*	*8.10*		*10.20*		*11.70*		**13.75**	**14.43**	
Mean Day	11.65	10.49	8.21	6.34	9.20	10.47	10.60	11.39	12.26	13.36	13.66	13.54
Max Day	12.80	12.10	10.40	8.40	10.60	11.40	11.40	11.90	12.71	14.27	14.43	14.39
Min Day	9.70	7.20	6.70	4.00	7.50	8.70	9.90	11.00	11.70	12.24	12.84	12.22

Table 6: Minimum Daily Water Temperature (°C)

Potrero Creek, Water Year 2007

dashes indicate missing data

Data in italics from Balance Hydrologics 2007b; data in bold from CSUMB

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	*12.10*	*9.10*	*5.80*	*6.50*	*7.50*	*7.50*	*9.50*	*9.90*	*11.60*	**11.60**	**13.44**	**13.86**
2	*11.50*	*10.40*	*5.80*	*6.20*	*7.50*	*7.40*	*9.00*	*10.60*	*11.50*	**11.54**	**13.53**	**13.56**
3	*10.30*	*11.50*	*5.90*	*6.70*	*6.20*	*7.50*	*8.80*	*10.50*	*11.30*	**11.95**	**13.32**	**13.41**
4	*11.40*	*11.40*	*5.70*	*7.70*	*6.30*	*8.20*	*9.50*	*10.70*	*11.80*	**12.08**	**13.04**	**13.59**
5	*12.10*	*10.60*	*5.80*	*6.70*	*6.60*	*9.00*	*10.10*	*10.40*	*12.30*	**12.31**	**13.24**	**13.46**
6	*10.80*	*10.90*	*5.60*	*5.60*	*6.70*	*8.10*	*10.50*	*9.90*	*12.10*	**12.45**	**13.50**	**13.36**
7	*12.00*	*11.20*	*5.50*	*5.50*	*7.70*	*9.30*	*10.50*	*10.60*	*11.70*	**12.62**	**12.94**	**13.62**
8	*11.10*	*11.30*	*5.80*	*5.80*	*8.40*	*9.70*	*10.70*	*11.00*	*11.60*	**12.47**	**12.98**	**13.41**
9	*10.90*	*9.80*	*7.50*	*6.00*	*9.00*	*9.30*	*10.30*	*11.00*	*11.40*	**12.47**	**13.31**	**13.74**
10	*12.10*	*8.40*	*8.80*	*6.10*	*9.50*	*8.70*	*9.30*	*11.30*	*11.90*	**12.76**	**13.17**	**13.32**
11	*11.50*	*9.10*	*7.60*	*6.60*	*10.10*	*9.30*	*9.70*	*11.20*	*12.00*	**12.79**	**13.38**	**13.31**
12	*10.90*	*8.20*	*8.50*	*5.60*	*8.50*	*9.80*	*10.10*	*11.10*	*11.40*	**12.49**	**13.31**	**13.62**
13	*10.70*	*9.00*	*9.50*	*4.50*	*9.20*	*10.30*	*8.90*	*11.00*	*11.40*	**12.37**	**12.64**	**13.38**
14	*12.00*	*10.50*	*10.00*	*3.80*	*9.30*	*9.80*	*9.50*	*10.90*	*11.70*	**12.71**	**12.30**	**13.47**
15	*12.40*	*9.30*	*10.10*	*3.60*	*8.30*	*9.30*	*9.90*	*11.10*	*11.70*	**13.03**	**12.56**	**13.32**
16	*12.20*	*8.80*	--	*3.40*	*8.30*	*9.90*	*9.40*	*11.00*	*12.20*	**13.21**	**12.71**	**13.29**
17	*11.90*	*10.30*	--	*4.00*	*8.60*	*9.80*	*10.10*	*11.20*	*11.80*	**12.98**	**12.30**	**13.50**
18	*10.10*	*10.10*	--	*4.20*	*9.80*	*10.50*	*9.80*	*10.70*	*11.70*	**13.35**	**12.23**	**13.44**
19	*9.70*	*9.80*	--	*4.10*	*8.40*	*10.70*	*9.40*	*10.90*	*12.10*	**13.19**	**12.24**	**13.43**
20	*10.10*	*9.78*	--	*4.63*	*9.01*	*10.83*	*9.58*	*10.37*	**12.29**	**12.95**	**12.76**	**12.96**
21	*10.36*	*10.24*	--	*4.69*	*8.31*	*10.52*	*9.09*	*11.05*	**12.32**	**13.27**	**13.21**	**12.71**
22	*9.88*	*9.88*	--	*4.47*	*9.00*	*9.26*	*9.92*	*10.39*	**11.90**	**13.46**	**13.63**	**12.95**
23	*9.83*	*9.07*	--	*4.32*	*7.99*	*9.52*	*9.93*	*10.26*	**11.69**	**13.90**	**13.69**	**12.59**
24	*9.73*	*7.33*	--	*4.36*	*6.89*	*10.21*	*9.28*	*10.39*	**11.42**	**14.15**	**13.62**	**12.26**
25	*9.66*	*8.29*	--	*5.28*	*8.72*	*10.61*	*10.13*	*10.48*	**11.22**	**13.93**	**13.21**	**12.24**
26	*8.29*	*9.39*	--	*5.68*	*9.26*	*10.49*	*10.04*	*10.95*	**11.52**	**13.81**	**13.60**	**12.24**
27	*8.20*	*9.20*	--	*6.57*	*8.46*	*10.32*	*9.79*	*11.12*	**11.85**	**13.62**	**13.83**	**12.27**
28	*8.34*	*7.88*	--	*7.02*	*8.19*	*9.22*	*10.32*	*11.23*	**11.67**	**13.54**	**13.55**	**12.58**
29	*8.20*	*6.80*	--	*6.80*		*8.40*	*10.60*	*11.10*	**12.04**	**13.61**	**13.64**	**12.18**
30	*9.60*	*6.00*	--	*6.70*		*8.60*	*10.50*	*11.40*	**11.89**	**13.63**	**13.74**	**11.41**
31	*9.70*		*7.10*	*7.60*		*8.90*		*11.40*		**13.43**	**14.07**	
Mean Day	10.57	9.45	7.19	5.51	8.28	9.39	9.81	10.81	11.77	12.96	13.18	13.08
Max Day	12.40	11.50	10.10	7.70	10.10	10.83	10.70	11.40	12.32	14.15	14.07	13.86
Min Day	8.20	6.00	5.50	3.40	6.20	7.40	8.80	9.90	11.22	11.54	12.23	11.41

Table 7: Mean Daily Specific Conductance (umhos/cm @ 25 C)

Potrero Creek, Water Year 2007

dashes indicate missing data

Data in italics from Balance Hydrologics 2007b; data in bold from CSUMB

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	*917*	*946*	*969*	*980*	*1010*	*262*	*805*	*823*	*1036*	**1102**	**1085**	**936**
2	*918*	*950*	*970*	*980*	*1009*	*345*	*796*	*827*	*1066*	**1092**	**1075**	**935**
3	*919*	*955*	*970*	*984*	*1004*	*521*	*789*	*833*	*1104*	**1084**	**1064**	**936**
4	*920*	*952*	*970*	*990*	*999*	*602*	*787*	*847*	*1131*	**1079**	**1055**	**938**
5	*924*	*951*	*971*	*985*	*997*	*614*	*784*	*869*	*1144*	**1074**	**1047**	**942**
6	*925*	*952*	*971*	*971*	*994*	*614*	*782*	*893*	*1155*	**1070**	**1039**	**1025**
7	*926*	*954*	*971*	*986*	*998*	*599*	*780*	*915*	*1166*	**1066**	**1030**	**1118**
8	*924*	*956*	*972*	*1004*	*1009*	*635*	*775*	*929*	*1178*	**1064**	**1023**	**1166**
9	*925*	*954*	*984*	*1027*	*1009*	*658*	*771*	*935*	*1189*	**1065**	**1016**	**1165**
10	*929*	*957*	*1048*	*1044*	*1006*	*678*	*767*	*938*	*1192*	**1072**	**1009**	**1158**
11	*928*	*964*	*938*	*1054*	*935*	*703*	*767*	*939*	*1176*	**1078**	**1003**	**1151**
12	*928*	*959*	*938*	*1061*	*932*	*728*	*768*	*941*	*1144*	**1088**	**997**	**1143**
13	*929*	*960*	*952*	*1060*	*945*	*760*	*768*	*946*	*1117*	**1097**	**991**	**1134**
14	*931*	*949*	*963*	*1059*	*963*	*792*	*781*	*952*	*1091*	**1105**	**985**	**1126**
15	*931*	*929*	*952*	*1055*	*979*	*818*	*787*	*960*	*1067*	**1109**	**981**	**1118**
16	*931*	*947*	--	*1049*	*986*	*840*	*785*	*969*	*1053*	**1110**	**975**	**1111**
17	*931*	*956*	--	*1048*	*993*	*854*	*787*	*980*	*1043*	**1110**	**969**	**1105**
18	*932*	*961*	--	*1043*	*1006*	*864*	*786*	*987*	*1037*	**1113**	**964**	**1098**
19	*934*	*964*	--	*1034*	*1004*	*868*	*784*	*993*	*1032*	**1117**	**960**	**1092**
20	*935*	*966*	--	*1032*	*1011*	*869*	*784*	*996*	*1029*	**1121**	**957**	**1086**
21	*937*	*967*	--	*1028*	*1004*	*867*	*782*	*1003*	**1111**	**1127**	**954**	**1080**
22	*938*	*968*	--	*1023*	*984*	*863*	*784*	*1005*	**1123**	**1132**	**952**	**1075**
23	*939*	*968*	--	*1018*	*860*	*864*	*783*	*1007*	**1134**	**1135**	**950**	**1070**
24	*939*	*969*	--	*1013*	*818*	*866*	*793*	*1010*	**1143**	**1138**	**947**	**1065**
25	*940*	*969*	--	*1016*	*802*	*868*	*803*	*1011*	**1147**	**1141**	**944**	**1061**
26	*941*	*970*	--	*1017*	*783*	*866*	*809*	*1014*	**1145**	**1141**	**943**	**1055**
27	*943*	*969*	--	*1020*	*269*	*859*	*813*	*1016*	**1141**	**1138**	**942**	**1049**
28	*944*	*969*	--	*1018*	*225*	*850*	*819*	*1018*	**1133**	**1130**	**939**	**1046**
29	*945*	*969*	--	*1003*		*841*	*822*	*1020*	**1123**	**1119**	**938**	**1042**
30	*945*	*969*	--	*1003*		*829*	*823*	*1023*	**1112**	**1107**	**937**	**1039**
31	*946*		*976*	*1009*		*813*		*1026*		**1096**	**938**	
Mean Day	932	959	970	1020	912	742	789	956	1115	1104	987	1069
Max Day	946	970	1048	1061	1011	869	823	1026	1192	1141	1085	1166
Min Day	917	929	938	971	225	262	767	823	1029	1064	937	935

Table 8: Mean daily flow, San Clemente Creek, water year 2007

_____Santa Lucia Preserve, Monterey County, California

Values are cfs (unless otherwise noted), dashes indicate missing data

(note–data in italics from Balance Hydrologics 2007b; data in bold from CSUMB.)

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	*0.2*	*0.13*	*0.17*	*0.53*	*0.42*	*3.47*	*0.59*	*0.38*	*0.28*	**0.14**	**0.04**	**0.08**
2	*0.2*	*0.14*	*0.18*	*0.51*	*0.41*	*2.61*	*0.56*	*0.39*	*0.28*	**0.13**	**0.04**	**0.09**
3	*0.19*	*0.14*	*0.18*	*0.48*	*0.41*	*2.13*	*0.55*	*0.41*	*0.28*	**0.12**	**0.04**	**0.09**
4	*0.21*	*0.14*	*0.17*	*0.61*	*0.4*	*1.78*	*0.54*	*0.5*	*0.27*	**0.12**	**0.03**	**0.11**
5	*0.26*	*0.13*	*0.18*	*0.67*	*0.4*	*1.53*	*0.53*	*0.54*	*0.27*	**0.10**	**0.04**	**0.09**
6	*0.24*	*0.12*	*0.18*	*0.54*	*0.38*	*1.36*	*0.52*	*0.49*	*0.27*	**0.08**	**0.04**	**0.09**
7	*0.24*	*0.11*	*0.18*	*0.52*	*0.4*	*1.25*	*0.52*	*0.46*	*0.27*	**0.08**	**0.04**	**0.11**
8	*0.22*	*0.11*	*0.3*	*0.5*	*0.43*	*1.16*	*0.49*	*0.39*	*0.27*	**0.08**	**0.04**	**0.12**
9	*0.21*	*0.11*	*1.04*	*0.49*	*0.44*	*1.09*	*0.47*	*0.35*	*0.26*	**0.07**	**0.04**	**0.13**
10	*0.21*	*0.11*	*1.91*	*0.47*	*0.65*	*1.01*	*0.47*	*0.33*	*0.25*	**0.07**	**0.04**	**0.13**
11	*0.21*	*0.14*	*0.82*	*0.45*	*2.23*	*0.97*	*0.49*	*0.33*	*0.25*	**0.07**	**0.04**	**0.14**
12	*0.2*	*0.13*	*0.6*	*0.44*	*1.22*	*0.93*	*0.49*	*0.33*	*0.25*	**0.07**	**0.04**	**0.15**
13	*0.21*	*0.15*	*0.57*	*0.42*	*1.05*	*0.89*	*0.48*	*0.34*	*0.24*	**0.06**	**0.04**	**0.15**
14	*0.21*	*0.21*	*0.52*	*0.42*	*0.89*	*0.85*	*0.59*	*0.33*	*0.23*	**0.06**	**0.04**	**0.14**
15	*0.21*	*0.15*	*0.49*	*0.41*	*0.79*	*0.81*	*0.62*	*0.32*	*0.21*	**0.06**	**0.04**	**0.15**
16	*0.21*	*0.15*	*0.47*	*0.43*	*0.74*	*0.8*	*0.5*	*0.33*	*0.21*	**0.06**	**0.04**	**0.16**
17	*0.2*	*0.15*	*0.51*	*0.57*	*0.71*	*0.76*	*0.47*	*0.33*	*0.22*	**0.06**	**0.04**	**0.16**
18	*0.17*	*0.15*	*0.48*	*0.49*	*0.67*	*0.73*	*0.49*	*0.32*	*0.21*	**0.06**	**0.05**	**0.17**
19	*0.16*	*0.14*	*--*	*0.47*	*0.63*	*0.71*	*0.49*	*0.32*	*0.21*	**0.06**	**0.04**	**0.18**
20	*0.15*	*0.14*	*--*	*0.46*	*0.6*	*0.77*	*0.63*	*0.32*	**0.22**	**0.06**	**0.04**	**0.17**
21	*0.15*	*0.14*	*--*	*0.43*	*0.6*	*0.79*	*0.55*	*0.32*	**0.20**	**0.06**	**0.04**	**0.16**
22	*0.14*	*0.14*	*--*	*0.41*	*1.42*	*0.72*	*0.66*	*0.31*	**0.19**	**0.06**	**0.04**	**0.22**
23	*0.13*	*0.14*	*--*	*0.41*	*1.52*	*0.68*	*0.56*	*0.31*	**0.18**	**0.05**	**0.05**	**0.20**
24	*0.13*	*0.14*	*--*	*0.42*	*1.13*	*0.66*	*0.51*	*0.31*	**0.17**	**0.05**	**0.05**	**0.19**
25	*0.13*	*0.16*	*--*	*0.41*	*1.57*	*0.64*	*0.49*	*0.3*	**0.18**	**0.05**	**0.05**	**0.19**
26	*0.12*	*0.16*	*--*	*0.42*	*4.34*	*0.65*	*0.51*	*0.3*	**0.16**	**0.06**	**0.06**	**0.19**
27	*0.13*	*0.2*	*--*	*0.47*	*8.09*	*1.02*	*0.49*	*0.29*	**0.16**	**0.05**	**0.07**	**0.19**
28	*0.12*	*0.17*	*--*	*0.48*	*5.66*	*0.78*	*0.46*	*0.29*	**0.15**	**0.05**	**0.06**	**0.21**
29	*0.12*	*0.16*	*--*	*0.47*		*0.68*	*0.41*	*0.29*	**0.15**	**0.04**	**0.06**	**0.21**
30	*0.13*	*0.17*	*--*	*0.45*		*0.65*	*0.39*	*0.29*	**0.14**	**0.04**	**0.07**	**0.21**
31	*0.13*		*0.55*	*0.44*		*0.62*		*0.29*		**0.05**	**0.07**	
Mean	0.18	0.14	0.50	0.47	1.36	1.08	0.52	0.35	0.22	0.07	0.05	0.15
Max Day	0.26	0.21	1.91	0.67	8.09	3.47	0.66	0.54	0.28	0.14	0.07	0.22
Min Day	0.12	0.11	0.17	0.41	0.38	0.62	0.39	0.29	0.14	0.04	0.03	0.08
Yield (a-f)	10.99	8.59	30.74	29.14	75.77	66.45	30.78	21.44	13.13	4.28	2.79	9.06

Water Year 2007 Annual Summary		
Mean Daily Flow	0.42	cfs
Max. Daily Flow	8.09	cfs
Min. Daily Flow	0.03	cfs
7-Day Low Flow	0.04	cfs
Total Yield	307.4	ac-ft
Normalized Yield	0.09	ac-ft/ac

yr	day	cfs
1991	9/17	0.03
1992	8/27	0.06
1993	8/27	0.10
1994	7/16	0.04
1995	9/29	0.14
2002	8/25	0.01
2003	9/14	0.03
2004	8/27	0.02
2005	9/30	0.11
2006	9/23	0.17
2007	8/4	0.03

Approximate date and value of first minimum daily mean flow near the end of each water year.

Table 9: Mean Daily Water Temperature (ºC)

San Clemente Creek, Water Year 2007

dashes indicate missing data

Data in italics from Balance Hydrologics 2007b; data in bold from CSUMB

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	--	*9.3*	*6.0*	*6.4*	*7.2*	*7.5*	*9.9*	*10.9*	*12.5*	**12.7**	**14.2**	**16.5**
2	--	*11.1*	*6.2*	*6.6*	*6.7*	*7.6*	*9.6*	*10.7*	*12.4*	**13.2**	**14.5**	**15.5**
3	--	*11.9*	*6.3*	*7.1*	*6.0*	*7.7*	*9.6*	*10.5*	*12.4*	**14.1**	**14.6**	**15.3**
4	--	*11.2*	*6.2*	*8.2*	*6.5*	*8.6*	*10.3*	*10.6*	*13.0*	**14.7**	**14.8**	**15.1**
5	--	*10.7*	*6.3*	*6.6*	*7.3*	*9.1*	*11.1*	*10.4*	*13.1*	**15.5**	**14.3**	**14.2**
6	--	*11.1*	*6.3*	*5.3*	*7.2*	*8.7*	*10.7*	*10.5*	*12.2*	**15.1**	**14.2**	**14.5**
7	*11.7*	*11.6*	*6.2*	*5.6*	*8.1*	*9.6*	*11.4*	*11.8*	*11.6*	**14.5**	**13.6**	**14.8**
8	*11.6*	*11.6*	*7.5*	*5.7*	*9.2*	*9.6*	*10.4*	*12.6*	*11.6*	**14.1**	**13.7**	**14.2**
9	*11.6*	*9.9*	*9.3*	*6.0*	*9.9*	*8.6*	*9.9*	*12.4*	*11.9*	**14.3**	**13.5**	**14.2**
10	*11.8*	*8.5*	*9.1*	*6.2*	*10.6*	*8.5*	*9.3*	*12.1*	*12.6*	**14.1**	**13.7**	**13.9**
11	*11.7*	*9.0*	*7.9*	*6.2*	*10.3*	*9.4*	*9.3*	*11.3*	*12.5*	**14.5**	**13.6**	**13.8**
12	*11.4*	*8.6*	*9.0*	*4.8*	*8.4*	*10.2*	*9.4*	*11.0*	*12.1*	**14.0**	**13.1**	**14.0**
13	*11.3*	*9.3*	*10.0*	*2.9*	*8.8*	*10.5*	*8.6*	*10.8*	*13.4*	**14.1**	**13.2**	**13.5**
14	*12.1*	*10.7*	*10.2*	*2.6*	*8.8*	*10.0*	*8.8*	*11.0*	*14.7*	**14.6**	**13.4**	**13.3**
15	*12.1*	*9.2*	*9.7*	*2.6*	*8.2*	*9.5*	*9.4*	*11.4*	*15.0*	**14.8**	**13.8**	**13.0**
16	*11.9*	*9.2*	*8.3*	*2.7*	*8.7*	*10.4*	*9.2*	*11.4*	*14.0*	**14.8**	**13.7**	**13.1**
17	*11.7*	*10.4*	*7.8*	*4.2*	*9.0*	*10.4*	*9.5*	*11.2*	*12.9*	**14.4**	**13.0**	**13.4**
18	*10.2*	*10.4*	*6.2*	*3.7*	*9.2*	*10.2*	*9.1*	*11.2*	*13.9*	**14.8**	**13.1**	**12.9**
19	*10.0*	*10.2*	--	*3.9*	*8.0*	*9.9*	*8.5*	*11.4*	*13.9*	**14.2**	**13.2**	**12.6**
20	*10.6*	*10.3*	--	*4.6*	*8.2*	*10.2*	*9.0*	*10.8*	*13.4*	**14.1**	**14.2**	**12.2**
21	*11.0*	*10.4*	--	*4.6*	*7.3*	*9.7*	*8.6*	*12.1*	**13.4**	**14.8**	**14.8**	**12.3**
22	*11.1*	*10.1*	--	*4.1*	*8.1*	*8.9*	*9.8*	*11.2*	**13.2**	**15.0**	**15.1**	**12.6**
23	*11.1*	*9.6*	--	*4.3*	*7.2*	*9.6*	*9.8*	*11.4*	**12.9**	**15.4**	**14.5**	**12.1**
24	*11.1*	*7.3*	--	*4.7*	*6.8*	*9.9*	*9.6*	*11.9*	**12.2**	**15.9**	**14.5**	**11.7**
25	*10.3*	*8.7*	--	*5.1*	*8.4*	*10.2*	*9.7*	*11.9*	**12.3**	**14.9**	**14.4**	**12.0**
26	*9.1*	*9.5*	--	*5.8*	*8.6*	*10.2*	*10.3*	*12.2*	**12.7**	**14.7**	**14.5**	**12.2**
27	*9.2*	*9.1*	--	*7.3*	*7.9*	*9.0*	*11.1*	*12.2*	**12.8**	**14.4**	**14.5**	**12.4**
28	*9.4*	*8.2*	--	*6.8*	*7.3*	*8.6*	*12.1*	*12.2*	**13.3**	**14.3**	**15.2**	**12.6**
29	*9.2*	*6.7*	--	*6.9*		*8.2*	*12.1*	*12.2*	**13.8**	**14.4**	**16.0**	**11.5**
30	*9.3*	*5.8*	--	*7.0*		*8.9*	*11.4*	*12.4*	**13.1**	**14.4**	**16.4**	**10.7**
31	*9.6*		*7.5*	*7.6*		*9.5*		*12.3*		**14.3**	**16.9**	
Mean Day	10.8	9.7	7.7	5.4	8.1	9.3	9.9	11.5	13.0	14.5	14.3	13.3
Max Day	12.1	11.9	10.2	8.2	10.6	10.5	12.1	12.6	15.0	15.9	16.9	16.5
Min Day	9.1	5.8	6.0	2.6	6.0	7.5	8.5	10.4	11.6	12.7	13.0	10.7

Table 10: Maximum Daily Water Temperature (°C)

San Clemente Creek, Water Year 2007

dashes indicate missing data

Data in italics from Balance Hydrologics 2007b; data in bold from CSUMB

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	--	*10.4*	*6.9*	*7.0*	*7.5*	*8.3*	*10.8*	*12.1*	*13.7*	**14.3**	**15.9**	**17.4**
2	--	*11.8*	*6.9*	*7.6*	*7.2*	*8.4*	*10.8*	*11.4*	*13.9*	**15.0**	**16.2**	**16.6**
3	--	*12.3*	*7.1*	*7.8*	*6.9*	*9.0*	*10.9*	*11.0*	*14.0*	**15.7**	**16.4**	**16.2**
4	--	*11.8*	*7.0*	*8.5*	*7.5*	*9.6*	*11.3*	*11.2*	*14.3*	**16.5**	**16.6**	**15.9**
5	--	*11.3*	*7.2*	*7.8*	*8.3*	*9.8*	*11.9*	*11.5*	*13.7*	**17.1**	**15.7**	**15.3**
6	--	*11.9*	*7.0*	*5.8*	*7.9*	*9.6*	*11.4*	*12.0*	*13.2*	**16.7**	**15.6**	**15.6**
7	*12.3*	*12.3*	*7.1*	*6.4*	*8.9*	*10.2*	*12.3*	*13.4*	*13.1*	**15.8**	**15.3**	**15.5**
8	*12.5*	*12.1*	*8.9*	*6.5*	*9.6*	*10.1*	*11.3*	*14.1*	*13.2*	**15.7**	**15.5**	**15.1**
9	*12.5*	*10.8*	*9.7*	*6.9*	*10.4*	*9.3*	*10.9*	*13.7*	*13.6*	**15.8**	**15.3**	**15.1**
10	*12.3*	*9.5*	*9.4*	*6.9*	*11.0*	*9.7*	*10.3*	*13.4*	*14.4*	**15.0**	**15.5**	**14.9**
11	*12.2*	*9.6*	*8.5*	*6.9*	*10.9*	*10.6*	*9.9*	*12.6*	*14.1*	**15.9**	**15.2**	**14.7**
12	*12.1*	*9.4*	*9.8*	*5.8*	*9.3*	*11.3*	*10.0*	*12.2*	*13.9*	**15.6**	**15.0**	**14.6**
13	*11.9*	*10.6*	*10.5*	*3.7*	*9.1*	*11.5*	*10.0*	*12.2*	*15.2*	**15.7**	**15.1**	**14.2**
14	*12.4*	*11.0*	*10.5*	*3.3*	*9.1*	*11.0*	*9.3*	*12.5*	*16.4*	**16.2**	**15.3**	**14.2**
15	*12.3*	*9.9*	*10.2*	*3.3*	*9.0*	*10.8*	*10.0*	*12.5*	*16.4*	**16.4**	**15.6**	**13.8**
16	*12.4*	*10.0*	*8.9*	*3.5*	*9.5*	*11.5*	*10.4*	*12.8*	*15.3*	**16.4**	**15.7**	**13.9**
17	*12.1*	*11.1*	*8.2*	*4.6*	*9.8*	*11.1*	*10.4*	*12.6*	*14.5*	**16.0**	**14.9**	**14.0**
18	*11.0*	*11.0*	*7.1*	*4.1*	*9.4*	*11.0*	*9.7*	*12.8*	*15.5*	**15.9**	**14.9**	**13.6**
19	*11.0*	*10.9*	--	*4.8*	*8.9*	*10.6*	*9.1*	*12.9*	*15.1*	**15.9**	**14.9**	**13.1**
20	*11.6*	*11.0*	--	*5.3*	*8.8*	*10.6*	*9.7*	*12.1*	*15.2*	**15.8**	**16.0**	**12.8**
21	*12.0*	*11.1*	--	*5.2*	*8.1*	*10.2*	*9.5*	*13.6*	**15.0**	**16.6**	**16.5**	**13.0**
22	*11.9*	*10.6*	--	*4.8*	*8.3*	*10.1*	*10.5*	*12.7*	**14.9**	**16.8**	**16.6**	**13.0**
23	*12.1*	*9.8*	--	*5.1*	*7.6*	*10.7*	*10.9*	*13.0*	**14.5**	**16.5**	**15.8**	**12.8**
24	*11.8*	*8.3*	--	*5.7*	*7.9*	*10.6*	*10.9*	*13.4*	**13.7**	**17.5**	**15.8**	**12.7**
25	*11.3*	*9.2*	--	*5.8*	*8.7*	*11.0*	*10.7*	*13.3*	**14.0**	**16.5**	**15.5**	**13.0**
26	*10.1*	*9.7*	--	*6.7*	*9.0*	*11.1*	*11.6*	*13.7*	**14.3**	**16.4**	**15.6**	**13.3**
27	*10.4*	*9.5*	--	*7.8*	*8.6*	*9.8*	*12.6*	*13.5*	**14.4**	**16.2**	**15.6**	**13.2**
28	*10.4*	*8.7*	--	*7.5*	*8.0*	*9.2*	*13.4*	*13.5*	**14.8**	**16.1**	**16.3**	**13.0**
29	*10.0*	*7.6*	--	*7.6*		*9.5*	*13.3*	*13.5*	**15.5**	**16.1**	**17.1**	**12.4**
30	*9.8*	*6.5*	--	*7.6*		*10.2*	*12.6*	*13.7*	**14.7**	**16.1**	**17.4**	**11.8**
31	*10.1*		*7.8*	*7.8*		*10.6*		*13.6*		**16.0**	**17.7**	
Mean Day	11.5	10.3	8.4	6.1	8.8	10.2	10.9	12.8	14.5	16.1	15.8	14.2
Max Day	12.5	12.3	10.5	8.5	11.0	11.5	13.4	14.1	16.4	17.5	17.7	17.4
Min Day	9.8	6.5	6.9	3.3	6.9	8.3	9.1	11.0	13.1	14.3	14.9	11.8

Table 11: Minimum Daily Water Temperature (°C)

San Clemente Creek, Water Year 2007

dashes indicate missing data

Data in italics from Balance Hydrologics 2007b; data in bold from CSUMB

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	--	*8.3*	*5.2*	*5.7*	*6.5*	*6.7*	*8.9*	*9.4*	*11.6*	**11.0**	**12.6**	**15.7**
2	--	*10.4*	*5.3*	*5.8*	*6.0*	*6.5*	*8.4*	*10.1*	*11.2*	**11.3**	**13.1**	**14.3**
3	--	*11.5*	*5.5*	*6.5*	*5.0*	*6.4*	*8.2*	*10.1*	*10.8*	**12.7**	**12.8**	**14.2**
4	--	*10.4*	*5.3*	*7.7*	*5.5*	*7.5*	*9.3*	*10.2*	*11.6*	**12.7**	**13.4**	**14.4**
5	--	*9.9*	*5.4*	*5.8*	*6.3*	*8.3*	*10.4*	*9.2*	*12.5*	**14.3**	**13.4**	**12.7**
6	--	*10.2*	*5.4*	*4.7*	*6.2*	*7.4*	*9.6*	*8.7*	*11.6*	**13.8**	**13.5**	**13.5**
7	*10.9*	*10.9*	*5.3*	*4.9*	*7.5*	*9.0*	*10.5*	*10.1*	*10.0*	**13.7**	**12.5**	**14.2**
8	*10.6*	*10.9*	*6.1*	*4.9*	*8.9*	*8.9*	*9.3*	*11.0*	*10.1*	**12.8**	**12.6**	**13.2**
9	*10.6*	*9.1*	*8.9*	*5.0*	*9.5*	*7.8*	*9.1*	*10.9*	*10.1*	**12.8**	**11.8**	**13.5**
10	*11.3*	*7.3*	*8.5*	*5.3*	*10.1*	*7.3*	*7.9*	*11.0*	*11.1*	**13.0**	**12.1**	**12.9**
11	*11.0*	*8.2*	*7.1*	*5.8*	*9.3*	*8.3*	*8.4*	*10.0*	*11.2*	**13.7**	**12.3**	**12.8**
12	*10.6*	*7.9*	*8.2*	*3.7*	*7.5*	*8.9*	*8.9*	*10.3*	*10.0*	**12.6**	**11.5**	**13.6**
13	*10.4*	*8.2*	*9.5*	*2.2*	*8.6*	*9.4*	*7.1*	*9.2*	*11.5*	**12.4**	**11.5**	**12.6**
14	*11.9*	*9.7*	*9.6*	*1.7*	*8.3*	*9.0*	*8.2*	*9.4*	*13.1*	**13.2**	**11.7**	**12.4**
15	*11.9*	*8.4*	*8.9*	*1.8*	*7.4*	*8.2*	*8.9*	*10.6*	*13.5*	**13.3**	**12.5**	**12.1**
16	*11.4*	*8.4*	*7.9*	*1.8*	*7.8*	*9.3*	*7.8*	*10.3*	*13.0*	**13.9**	**12.6**	**12.3**
17	*11.0*	*9.8*	*7.2*	*3.5*	*8.1*	*9.5*	*9.0*	*9.7*	*11.1*	**13.1**	**11.4**	**12.8**
18	*9.2*	*9.8*	*5.7*	*3.1*	*8.9*	*9.4*	*8.7*	*9.8*	*12.4*	**14.0**	**11.6**	**12.1**
19	*9.0*	*9.5*	--	*3.2*	*7.4*	*8.7*	*7.7*	*10.2*	*12.5*	**12.8**	**11.6**	**12.2**
20	*9.7*	*9.6*	--	*3.9*	*7.7*	*9.9*	*8.5*	*9.4*	*12.8*	**12.6**	**12.8**	**11.6**
21	*10.0*	*9.8*	--	*4.0*	*6.3*	*9.2*	*7.4*	*11.2*	**11.8**	**13.4**	**13.6**	**11.5**
22	*10.1*	*9.6*	--	*3.3*	*7.6*	*7.6*	*9.2*	*9.4*	**11.6**	**13.5**	**14.1**	**12.2**
23	*10.1*	*8.3*	--	*3.5*	*6.8*	*8.3*	*8.7*	*9.7*	**11.2**	**14.3**	**13.5**	**11.2**
24	*10.2*	*6.4*	--	*3.8*	*5.7*	*9.0*	*8.0*	*10.2*	**10.6**	**15.1**	**13.3**	**10.7**
25	*9.4*	*8.0*	--	*4.4*	*7.9*	*9.3*	*8.6*	*10.3*	**10.2**	**13.7**	**13.1**	**10.9**
26	*8.0*	*9.2*	--	*4.9*	*8.1*	*9.5*	*9.0*	*11.1*	**11.2**	**13.6**	**13.8**	**11.2**
27	*8.1*	*8.7*	--	*6.7*	*7.3*	*8.6*	*9.3*	*11.1*	**11.2**	**12.9**	**13.4**	**11.5**
28	*8.2*	*7.6*	--	*6.2*	*6.6*	*7.5*	*10.6*	*10.9*	**11.6**	**12.6**	**14.1**	**12.2**
29	*8.2*	*6.1*	--	*6.2*		*6.8*	*10.9*	*10.9*	**12.6**	**12.9**	**15.0**	**10.6**
30	*8.6*	*5.2*	--	*6.1*		*7.4*	*9.9*	*11.5*	**11.7**	**12.8**	**15.6**	**9.6**
31	*9.0*		*7.0*	*7.4*		*8.0*		*11.4*		**13.0**	**16.3**	
Mean Day	10.0	8.9	6.9	4.6	7.5	8.3	8.9	10.2	11.5	13.1	13.0	12.5
Max Day	11.9	11.5	9.6	7.7	10.1	9.9	10.9	11.5	13.5	15.1	16.3	15.7
Min Day	8.0	5.2	5.2	1.7	5.0	6.4	7.1	8.7	10.0	11.0	11.4	9.6

Table 12: Mean Daily Specific Conductance (umhos/cm @ 25 C)

San Clemente Creek, Water Year 2007

dashes indicate missing data

Data in italics from Balance Hydrologics 2007b; data in bold from CSUMB

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	--	*339*	*334*	*268*	*274*	*225*	*257*	*277*	*311*	**341**	**357**	**357**
2	--	*343*	*336*	*270*	*274*	*228*	*258*	*276*	*302*	**340**	**356**	**357**
3	--	*343*	*338*	*273*	*274*	*229*	*262*	*275*	*306*	**344**	**355**	**357**
4	--	*341*	*336*	*279*	*275*	*228*	*270*	*279*	*309*	**348**	**356**	**356**
5	--	*339*	*336*	*271*	*275*	*231*	*282*	*284*	*312*	**350**	**356**	**356**
6	--	*341*	*335*	*264*	*276*	*234*	*281*	*294*	*313*	**352**	**357**	**354**
7	*366*	*343*	*334*	*266*	*277*	*237*	*292*	*283*	*312*	**354**	**357**	**353**
8	*360*	*347*	*334*	*268*	*275*	*242*	*303*	*283*	*314*	**355**	**354**	**353**
9	*359*	*341*	*324*	*269*	*273*	*242*	*292*	*286*	*316*	**355**	**350**	**352**
10	*359*	*337*	*257*	*273*	*265*	*242*	*288*	*290*	*318*	**355**	**349**	**352**
11	*357*	*336*	*254*	*276*	*225*	*240*	*295*	*293*	*320*	**356**	**349**	**351**
12	*356*	*334*	*274*	*278*	*227*	*242*	*299*	*295*	*320*	**357**	**351**	**350**
13	*352*	*332*	*278*	*279*	*235*	*243*	*304*	*295*	*321*	**354**	**351**	**351**
14	*354*	*336*	*285*	*279*	*244*	*246*	*287*	*298*	*325*	**352**	**350**	**350**
15	*353*	*328*	*282*	*279*	*249*	*247*	*256*	*301*	*326*	**355**	**349**	**350**
16	*350*	*331*	*282*	*279*	*253*	*246*	*263*	*301*	*326*	**355**	**349**	**350**
17	*350*	*334*	*286*	*271*	*259*	*247*	*279*	*301*	*328*	**354**	**350**	**350**
18	*348*	*334*	*284*	*269*	*264*	*248*	*286*	*303*	*329*	**353**	**350**	**350**
19	*348*	*334*	--	*273*	*261*	*248*	*285*	*304*	*332*	**355**	**349**	**350**
20	*348*	*335*	--	*275*	*267*	*246*	*272*	*304*	*331*	**352**	**348**	**351**
21	*347*	*335*	--	*279*	*268*	*246*	*262*	*304*	**328**	**350**	**350**	**350**
22	*347*	*335*	--	*280*	*243*	*250*	*263*	*306*	**331**	**350**	**352**	**349**
23	*348*	*335*	--	*280*	*223*	*252*	*262*	*306*	**334**	**350**	**353**	**351**
24	*348*	*332*	--	*278*	*238*	*253*	*277*	*306*	**336**	**352**	**353**	**351**
25	*347*	*334*	--	*278*	*235*	*253*	*285*	*308*	**336**	**353**	**352**	**349**
26	*347*	*339*	--	*277*	*229*	*253*	*289*	*309*	**336**	**354**	**350**	**346**
27	*346*	*340*	--	*274*	*195*	*239*	*294*	*309*	**338**	**356**	**350**	**345**
28	*345*	*339*	--	*268*	*217*	*247*	*292*	*309*	**339**	**357**	**352**	**345**
29	*346*	*338*	--	*268*		*251*	*269*	*310*	**342**	**357**	**353**	**346**
30	*340*	*335*	--	*270*		*252*	*270*	*310*	**342**	**358**	**354**	**345**
31	*338*		*267*	*271*		*254*		*311*		**358**	**356**	
Mean Day	350	337	303	274	253	243	279	297	324	353	352	351
Max Day	366	347	338	280	277	254	304	311	342	358	357	357
Min Day	338	328	254	264	195	225	256	275	302	340	348	345

7 Figures

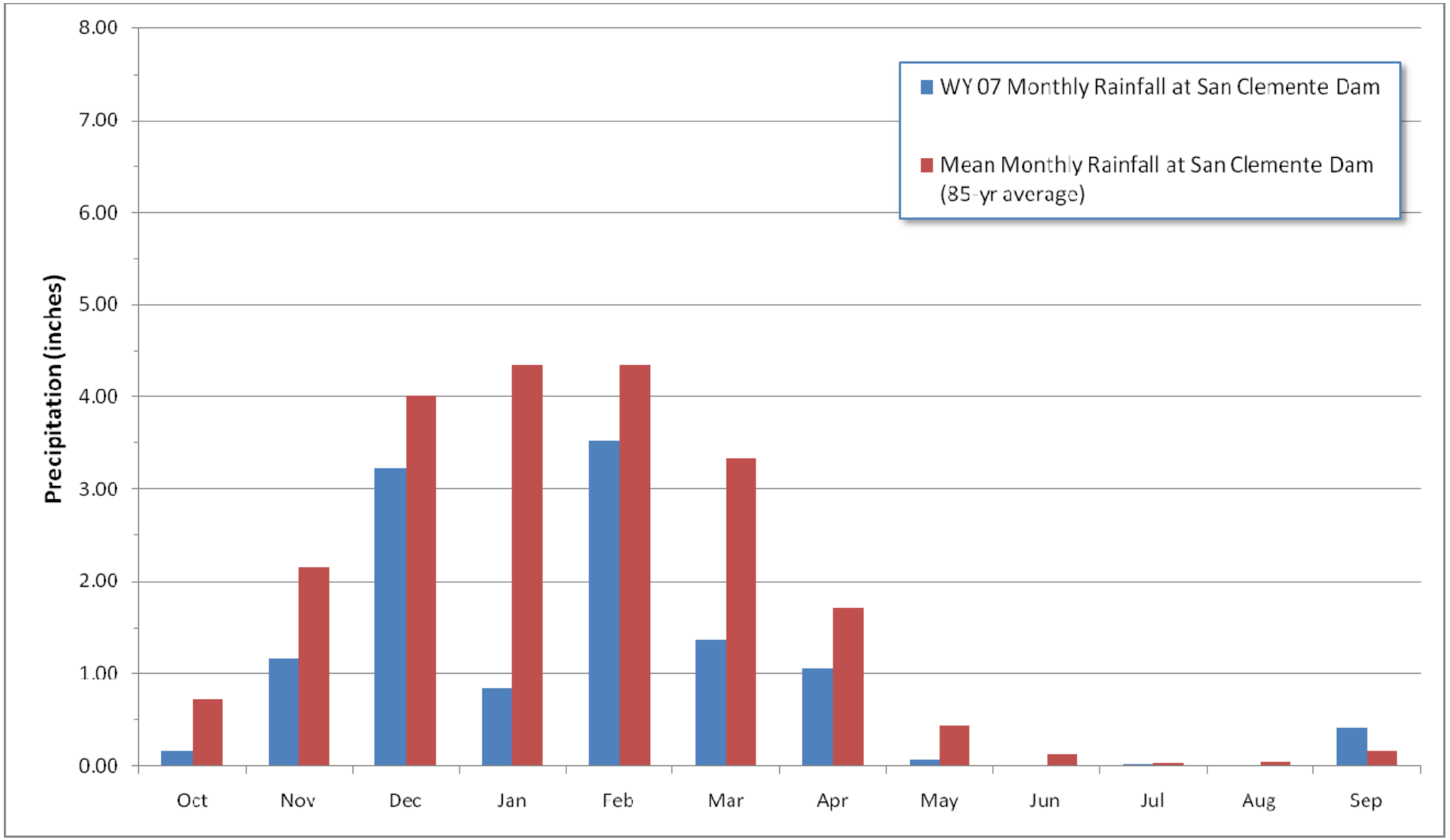

Figure 1. Monthly precipitation at San Clemente Dam for Water Year 2007. WY 2007 precipitation was well below average for all months except September; January was particularly dry. Mean monthly data is based on Water Years 1922 – 2006.

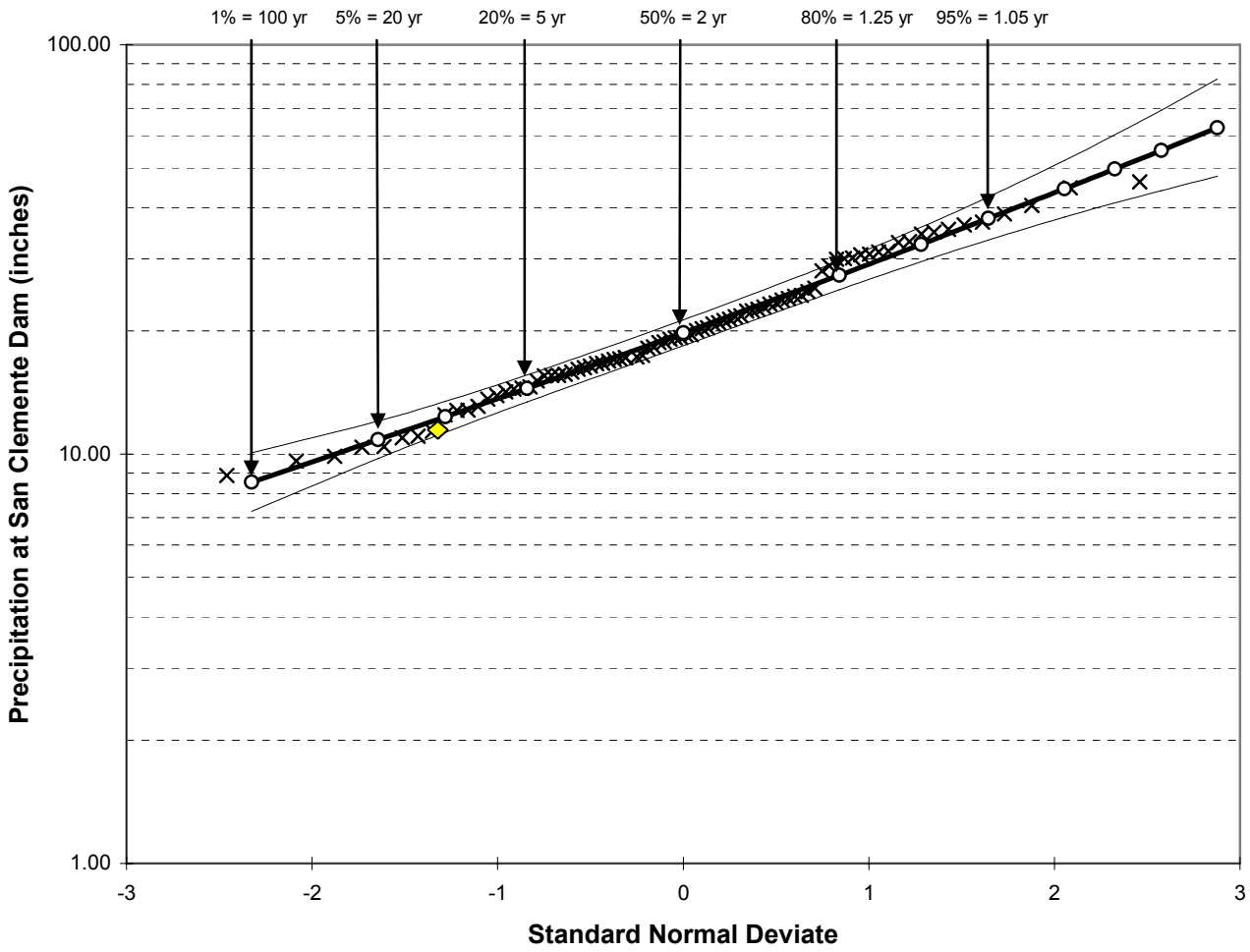

Figure 2. Log-Pearson Type-III statistical analysis of historic precipitation data from San Clemente Dam. Thin curved lines represent upper and lower 95% confidence bounds for precipitation and non-exceedance probability. Diamond symbol is the 2007 water year 11.37 inches.

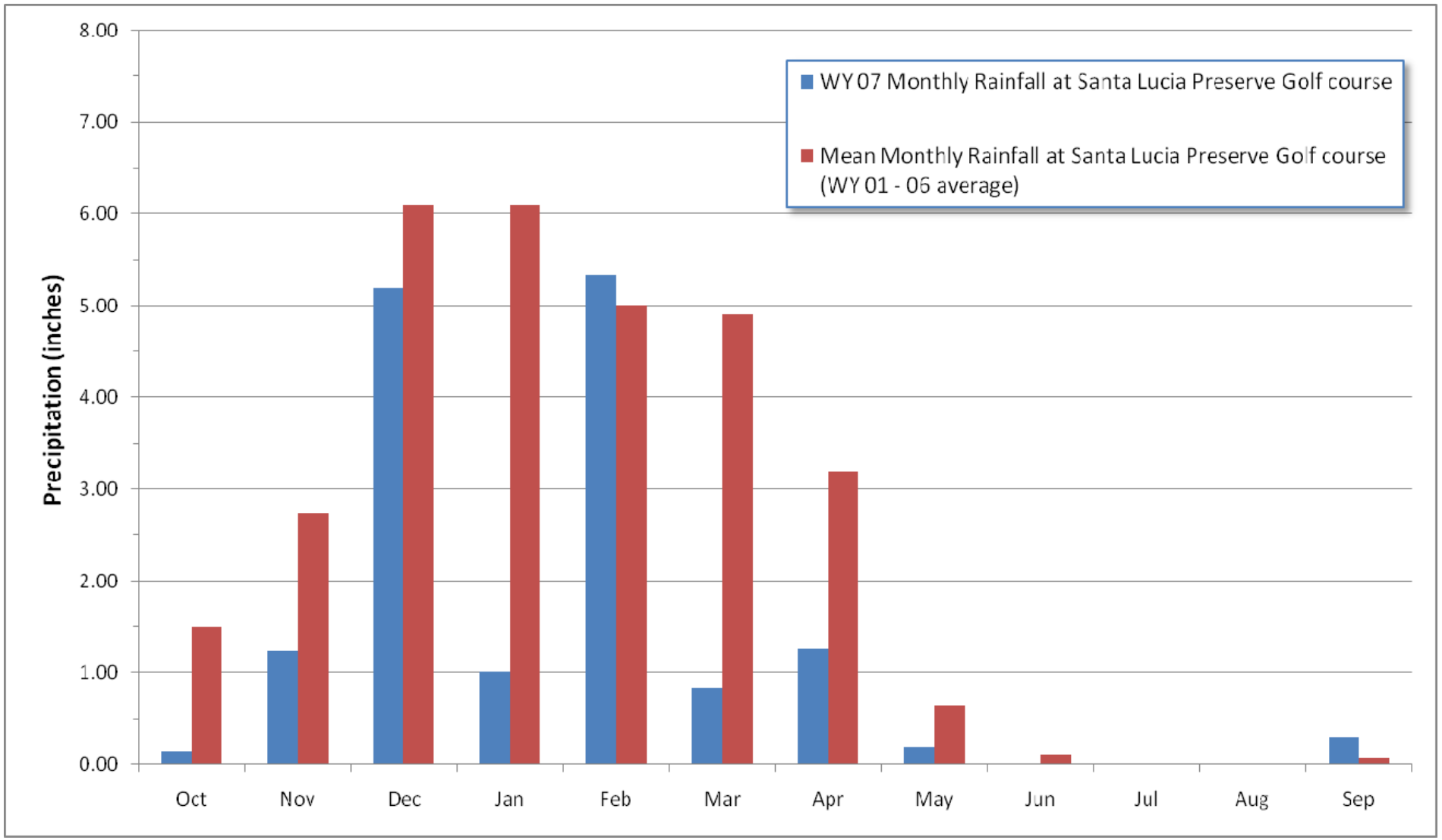

Figure 3. Monthly Precipitation at Santa Lucia Preserve Golf course for Water Year 2007. WY 2007 precipitation was below average, with January being particularly dry. Mean monthly average is based only on Water Years 2001 – 2006 and is probably not an accurate characterization of actual long-term patterns (mean monthly data from Balance Hydrologics 2006).

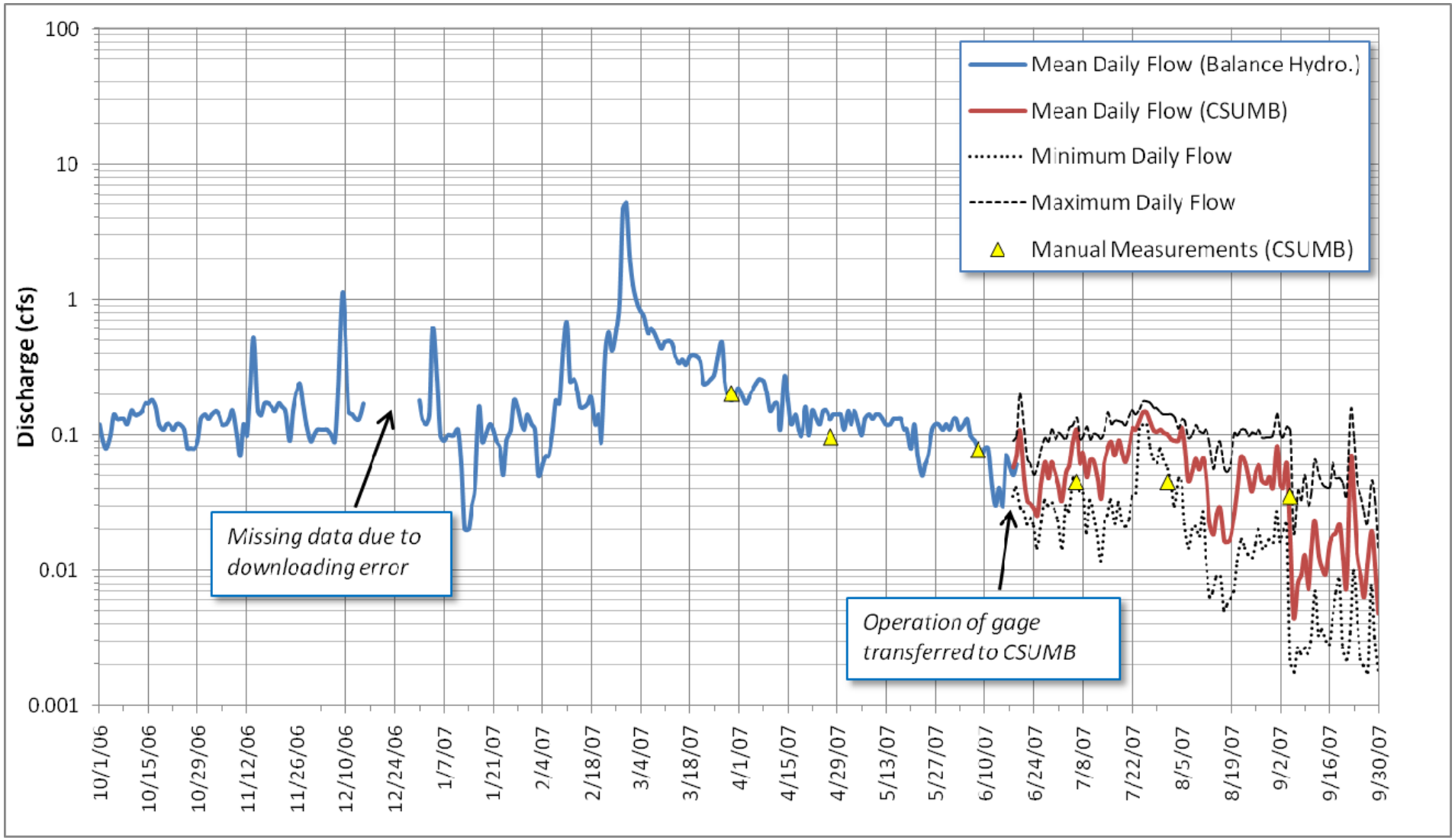

Figure 4. Mean Daily Streamflow at Potrero Creek gage for Water Year 2007. Blue line is mean daily streamflow (from Balance Hydrologics 2007b). Red line is mean daily streamflow after gage station was transferred to CSUMB; minimum and maximum daily flows are also given for this period. Yellow markers represent manual discharge measurements taken by CSUMB.

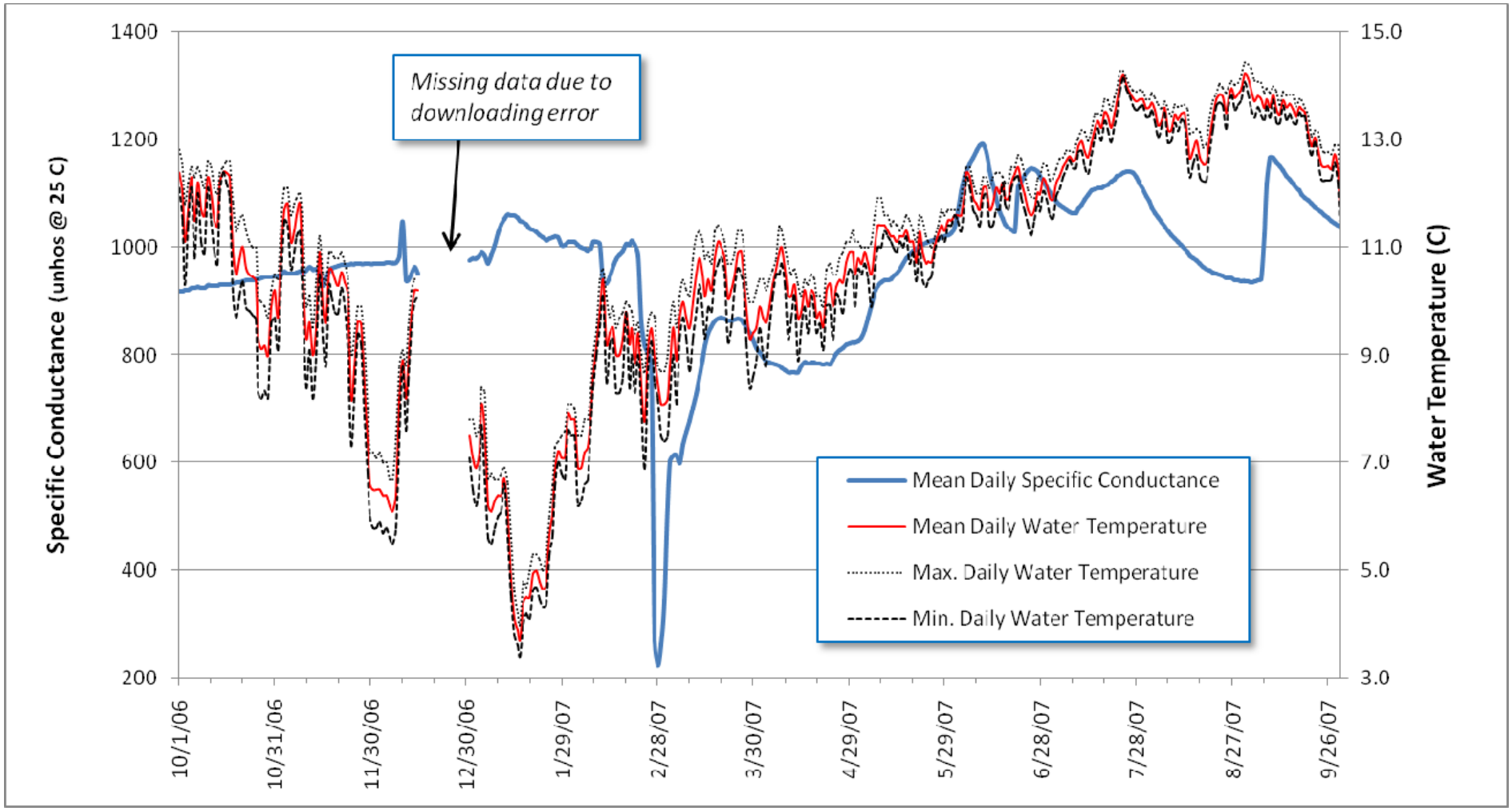

Figure 5. Daily Specific Conductance Water Temperature data at Potrero Creek gage for Water Year 2007.

Blue line is mean daily specific conductance; red line is mean daily water temperature; dotted lines represent minimum and maximum daily water temperature values.

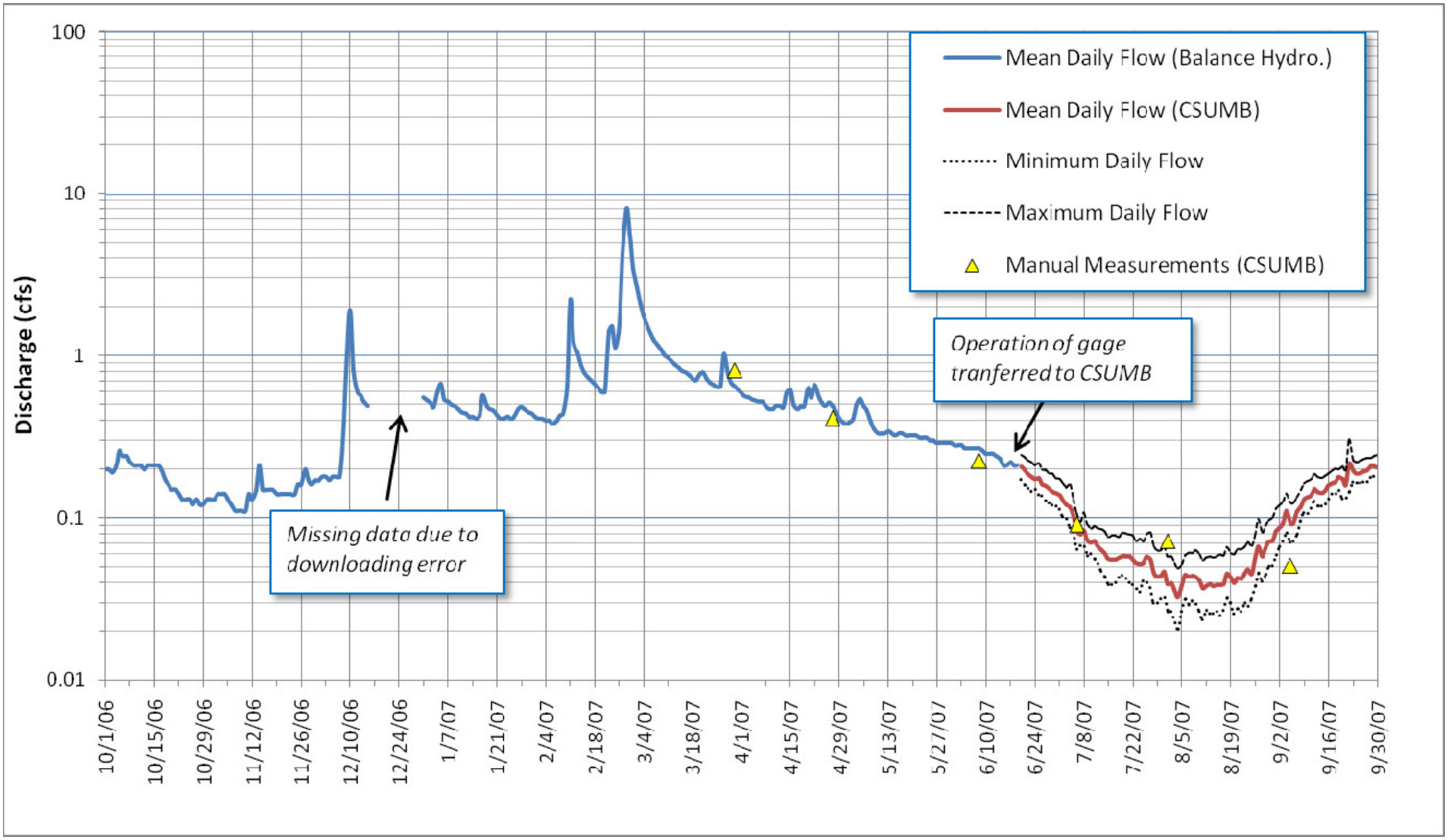

Figure 6. Mean Daily Streamflow at San Clemente Creek gage for Water Year 2007. Blue line is mean daily streamflow (from Balance Hydrologics 2007b). Red line is mean daily streamflow after gage station was transferred to CSUMB; minimum and maximum daily flows are also given for this period. Yellow markers represent manual discharge measurements taken by CSUMB.

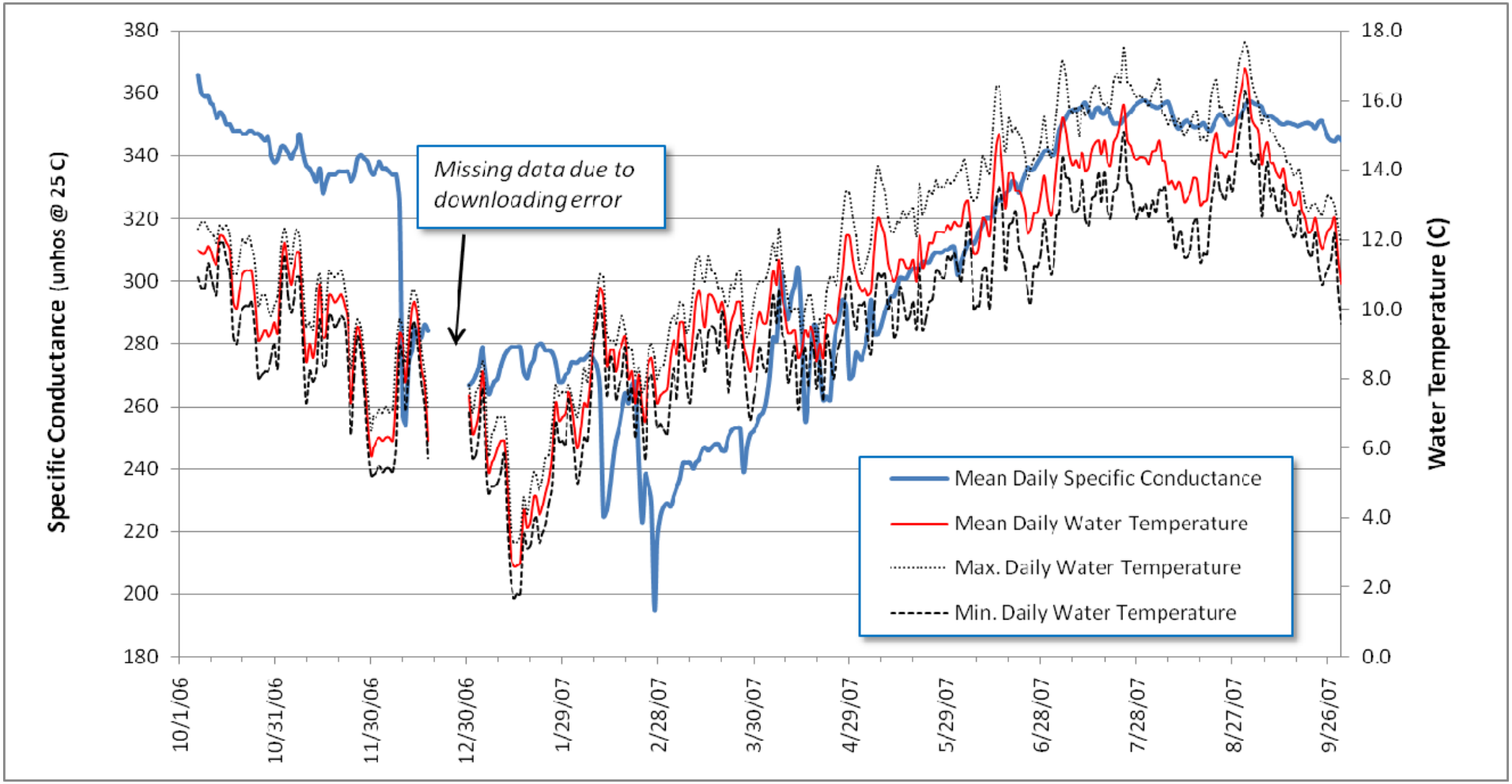

Figure 7. Daily Specific Conductance and Water Temperature data at San Clemente Creek gage for Water Year 2007. Blue line is mean daily specific conductance; red line is mean daily water temperature; dotted lines represent minimum and maximum daily water temperature values.