

Table 1.

Rainfall at Sutherland,
as determined from Table 5 of Mr. Bowen of Rainfall at 5 Stations in
vicinity of Warners.

<u>Season</u>	<u>Warners Rainfall in Inches</u>	<u>Sutherland 114% of Warners in Inches</u>	<u>90% of Estimated Rainfall Inches</u>
1888-89	28.2	32.2	29.0
1889-90	34.6	39.4	35.5
1890-91	31.7	36.1	32.5
1891-92	21.1	24.1	21.7
1892-93	23.0	26.2	23.6
1893-94	15.8	18.0	16.2
1894-95	28.7	32.7	29.4
1895-96	13.3	15.2	13.7
1896-97	24.8	28.3	25.5
1897-98	15.3	15.2	13.7
1898-99	11.9	13.6	12.2
1899-1900	16.3	18.6	16.7
1900-01	20.9	23.8	21.4
1901-02	17.0	19.4	17.5
1902-03	24.6	28.0	25.2
1903-04	11.5	13.1	11.8
1904-05	32.4	36.9	33.2
1905-06	33.5	38.2	34.4
1906-07	25.9	29.5	26.6
1907-08	18.8	21.4	19.3
1908-09	25.0	28.5	25.6
1909-10	20.9	23.8	21.4
1910-11	22.5	25.6	23.0
1911-12	18.59	21.2	19.1
1912-13	16.78	19.1	17.2
1913-14	23.04	26.3	23.7
1914-15	33.42	38.1	34.3
1915-16	34.6	39.5	35.6

Table 1-A.
 Rainfall at Pemo
 as determined from Table 5 of Dr. Bowen of Rainfall at 5 Stations
 in vicinity of Warners.

Season	Warners Rainfall in Inches	Pemo 86% of Warners	90% of Estimated Rainfall
1888-89	28.2	24.2	21.8
1889-90	34.6	29.8	26.8
1890-91	31.7	27.2	24.5
1891-92	31.1	18.1	16.3
1892-93	35.3	19.8	17.6
1893-94	15.8	15.6	13.2
1894-95	28.7	24.7	22.2
1895-96	13.3	11.4	10.3
1896-97	24.3	21.4	19.3
1897-98	13.3	11.4	10.3
1898-99	11.3	10.2	9.2
1899-1900	16.3	14.0	12.6
1900-01	20.3	18.0	16.2
1901-02	17.0	14.6	13.1
1902-03	24.6	21.2	19.1
1903-04	11.5	9.9	8.9
1904-05	32.4	27.8	25.0
1905-06	33.5	28.8	25.9
1906-07	25.9	22.3	20.1
1907-08	18.8	16.2	14.6
1908-09	25.0	21.5	19.3
1909-10	20.9	18.0	16.2
1910-11	22.5	19.4	17.5
1911-12	18.59	16.0	14.4
1912-13	16.78	14.4	13.0
1913-14	23.04	19.8	17.8
1914-15	33.42	28.8	25.9
1915-16	34.6	29.8	26.8

Table 2.
 Evaporation at Sutherland.

Season	October to March Inclusive.				April to September Inclusive.			
	Gross Evap. Inches	76% Rainfall Inches	Net Evaporation and Rainfall Inches	and Feet	Gross Evap. Inches	22% Rainfall Inches	Net Evaporation and Rainfall Inches	and Feet
1888-89	14	22.6	+ 8.6	+ 0.72	33	6.4	- 25.6	- 2.22
1889-90	14	27.7	+ 13.7	+ 1.14	33	7.8	- 25.2	- 2.10
1890-91	14	25.4	+ 11.4	+ 0.95	33	7.1	- 25.9	- 2.16
1891-92	14	16.9	+ 2.9	+ 0.24	33	4.8	- 28.2	- 2.35
1892-93	14	18.4	+ 4.4	+ 0.37	33	5.2	- 27.8	- 2.32
1893-94	14	12.6	- 1.4	- 0.12	33	3.6	- 29.4	- 2.45
1894-95	14	23.0	+ 0.9	+ 0.08	33	6.4	- 26.6	- 2.22
1895-96	14	10.7	- 3.3	- 0.28	33	3.0	- 30.0	- 2.50
1896-97	14	19.9	+ 5.9	+ 0.49	33	5.6	- 27.4	- 2.28
1897-98	14	10.7	- 3.3	- 0.28	33	3.0	- 30.0	- 2.50
1898-99	14	9.5	- 4.5	- 0.37	33	2.7	- 30.3	- 2.52
1899-1900	14	13.0	- 1.0	- 0.08	33	3.7	- 29.3	- 2.44
1900-01	14	16.7	+ 2.7	+ 0.23	33	4.7	- 28.3	- 2.36
1901-02	14	13.7	- 0.3	- 0.02	33	3.8	- 29.2	- 3.50
1902-03	14	19.7	+ 5.7	+ 0.48	33	5.5	- 27.5	- 2.29
1903-04	14	9.2	- 4.8	- 0.40	33	2.6	- 30.4	- 2.53
1904-05	14	25.9	+ 11.9	+ 0.99	33	7.3	- 25.7	- 2.14
1905-06	14	26.8	+ 12.8	+ 1.07	33	7.6	- 25.4	- 2.12
1906-07	14	20.8	+ 6.8	+ 0.57	33	5.8	- 27.2	- 2.26
1907-08	14	15.0	+ 1.0	+ 0.08	33	4.3	- 28.7	- 2.39
1908-09	14	20.0	+ 6.0	+ 0.50	33	5.6	- 27.4	- 2.28
1909-10	14	16.7	+ 2.7	+ 0.23	33	4.7	- 28.3	- 3.40
1910-11	14	17.9	+ 3.9	+ 0.33	33	5.1	- 27.9	- 2.32
1911-12	14	14.9	+ 0.9	+ 0.08	33	4.2	- 28.8	- 2.40
1912-13	14	13.4	- 0.6	- 0.05	33	3.8	- 29.2	- 2.43
1913-14	14	18.5	+ 4.5	+ 0.37	33	5.2	- 27.8	- 2.32
1914-15	14	26.8	+ 12.8	+ 1.07	33	7.5	- 25.5	- 2.12
1915-16	14	27.8	+ 13.8	+ 1.15	33	7.8	- 25.2	- 2.10

Table 2-A
Evaporation at Pano.

Season	October to March Inclusive		April to September Inclusive		Gross : 22%	Net Evaporation	Net Evaporation and Rainfall	
	Gross : 78%	Evap. : Rainfall	Gross :	Evap. : Rainfall			Inches	Feet
1888-89	14	17.0	+ 3.0	+ 0.25	33	4.8	- 28.2	2.35
1889-90	14	20.9	+ 6.9	+ 0.57	33	5.9	- 27.1	2.25
1890-91	14	19.1	+ 5.1	+ 0.43	33	5.4	- 27.6	2.30
1891-92	14	12.7	- 1.3	- 0.16	33	3.6	- 29.4	2.45
1892-93	14	13.9	- 0.1	- 0.01	33	3.9	- 29.1	2.42
1893-94	14	9.5	- 4.5	- 0.37	33	2.7	- 30.3	2.52
1894-95	14	17.3	+ 3.3	+ 0.28	33	4.9	- 26.1	2.34
1895-96	14	8.0	- 6.0	- 0.50	33	2.3	- 30.7	2.56
1896-97	14	15.1	+ 1.1	+ 0.09	33	4.2	- 28.8	2.40
1897-98	14	8.0	- 6.0	- 0.50	33	2.3	- 30.7	2.56
1898-99	14	7.2	- 6.8	- 0.57	33	2.0	- 31.0	2.58
1899-1900	14	9.8	- 4.2	- 0.35	33	2.8	- 30.2	2.52
1900-01	14	12.6	- 1.4	- 0.12	33	3.6	- 29.4	2.45
1901-02	14	10.2	- 3.8	- 0.32	33	2.9	- 30.1	2.50
1902-03	14	14.9	+ 0.9	+ 0.08	33	4.2	- 28.8	2.40
1903-04	14	7.0	- 7.0	- 0.58	33	1.9	- 31.1	2.59
1904-05	14	19.5	+ 5.5	+ 0.46	33	5.5	- 27.5	2.29
1905-06	14	20.2	+ 6.2	+ 0.52	33	5.7	- 27.3	2.28
1906-07	14	15.7	+ 1.7	+ 0.14	33	4.4	- 28.6	2.38
1907-08	14	11.4	- 2.5	- 0.22	33	3.2	- 29.8	2.48
1908-09	14	15.1	+ 1.1	+ 0.09	33	4.2	- 28.8	2.40
1909-10	14	12.6	- 1.4	- 0.12	33	3.6	- 29.4	2.45
1910-11	14	13.6	- 0.4	- 0.05	33	3.9	- 29.1	2.42
1911-12	14	11.2	- 2.8	- 0.23	33	3.2	- 29.8	2.48
1912-13	14	10.2	- 3.8	- 0.32	33	2.9	- 30.1	2.50
1913-14	14	13.9	- 0.1	- 0.01	33	3.9	- 29.1	2.42
1914-15	14	20.2	+ 6.2	+ 0.52	33	5.7	- 27.3	2.28
1915-16	14	20.9	+ 6.9	+ 0.58	33	5.9	- 27.1	2.25

Table 3.
Sutherland Runoff
Divided between Summer and Winter
Seasons.

Season	Total Runoff Acre Feet	Runoff 70% Oct.1 to Mar.31 Acre feet	Runoff 30% Apr.1 to Sept.30 Acre Feet
1888-89	13,000	9,100	3,900
1889-90	24,500	17,150	7,350
1890-91	27,500	19,250	8,250
1891-92	10,100	7,070	3,030
1892-93	16,000	11,200	4,800
1893-94	8,000	5,600	2,400
1894-95	52,400	36,700	15,700
1895-96	5,000	3,500	1,500
1896-97	11,700	8,190	3,510
1897-98	3,000	2,100	900
1898-99	2,500	1,750	750
1899-1900	2,000	1,400	600
1900-01	7,200	5,040	2,160
1901-02	5,600	3,920	1,680
1902-03	8,900	6,230	2,670
1903-04	4,300	3,010	1,290
1904-05	14,000	9,800	4,200
1905-06	36,000	25,200	10,800
1906-07	20,600	14,420	6,180
1907-08	6,900	4,830	2,070
1908-09	27,800	19,460	8,340
1909-10	19,400	13,580	5,820
1910-11	10,700	7,490	3,210
1911-12	7,000	4,900	2,100
1912-13	4,370	3,059	1,311
1913-14	10,450	7,315	3,135
1914-15	31,130	21,791	9,339
1915-16	95,130	66,591	28,539

Table 3-A.
Pamo Runoff
Divided between Summer and Winter Seasons.

Season	Total Runoff Below Sutherland	Runoff 70% Oct. 1 to Mar. 31	Runoff 30% April 1 to Sept. 30
1888-89	10,800	7,580	3,240
1889-90	14,500	10,150	4,350
1890-91	15,900	11,130	4,770
1891-92	8,100	5,670	2,430
1892-93	11,000	7,700	3,300
1893-94	5,300	3,710	1,590
1894-95	40,600	28,420	12,180
1895-96	1,700	1,190	510
1896-97	8,800	6,150	2,640
1897-98	1,000	700	300
1898-99	700	490	210
1899-1900	800	560	240
1900-01	4,800	3,360	1,440
1901-02	2,700	1,890	810
1902-03	4,300	3,010	1,290
1903-04	1,200	840	360
1904-05	9,800	6,860	2,940
1905-06	22,530	15,771	6,759
1906-07	12,950	9,065	3,885
1907-08	4,030	2,821	1,209
1908-09	16,010	11,207	4,803
1909-10	12,100	8,470	3,630
1910-11	8,360	5,852	2,508
1911-12	4,510	3,157	1,353
1912-13	1,410	987	423
1913-14	9,370	6,559	2,811
1914-15	18,670	13,069	5,601
1915-16	87,470	61,229	26,241

Table No. 4
Observed Runoff in Acre Feet.

Year	Sweetwater River, at Sweetwater Dam	San Diego River at Diverting Dam	Cuyamaca as computed by Post	Homot	(a) Pamo Dam or U S Sta. near Escan- dido (b)
1885-86					
1886-87					
1887-88	7,046		767		
1888-89	7,046 15,253		2,926		
1889-90	25,253 20,531		4,376		
1890-91	20,532 21,561		6,430		74,016 a
1891-92	6,198		8,525		
1892-93	16,260				
1893-94	1,338		3,902		
1894-95	73,412		1,909		
1895-96	1,321		11,129		
1896-97	6,892		1,580	2,445	
1897-98	4		2,215	6,062	
1898-99	245	1,027	669	2,397	
1899-00	0	609	475	1,818	
1900-01	825	4,252	127	2,052	
1901-02	0	4,173	1,823	4,660	
1902-03	0	8,377	1,923	2,899	
1903-04	0	579	385	5,019	
1904-05	13,760	22,259	5,258	2,234	
1905-06	35,000	31,998	9,735	6,408	62,980 b
1906-07	30,000	29,209	7,550	10,854	35,720 b
1907-08	4,140	11,554	1,635	4,132	11,230 b
1908-09	16,007	19,295	5,683	9,627	47,060 b
1909-10	9,619	15,814	4,095	6,677	33,900 b
1910-11	3,160	8,376	2,400	5,766	19,760 b
1911-12	5,000	9,420	3,028	5,153	11,510 a
1912-13	915	5,514 5322	2,385	4,157	5,780 a
1913-14	3,525	10,355 + 13047	1,932	7,040	19,820 a
1914-15	27,085	40,947 40625	8,630	16,025	49,800 a
1915-16	155,673	102,208 + 1112518	17,794	33,733	182,640 a

Comparative parallelism between the run-off of the Hemet Lake Drainage, (South Fork San Jacinto River), and that of Arrowhead Drainages and Santa Ana and San Gabriel Rivers.

Season	Hemet Ac-ft.	Arrowhead Ac-ft.	Santa Ana Ac.Ft.	San Gabriel Ac.ft.
1908-09	9,956	54,957	80,400	180,000
09-10	9,970	56,052	58,000	139,000
10-11	8,500	53,539	96,200	273,000
11-12	7,460	35,591	46,400	77,100
12-13	6,125		37,600	50,220
13-14	8,095		78,000	296,000

Relative run-off values calling Hemet 100

1908-09	100	551.8	307.6	1808.1
09-10	100	562.2	581.8	1394.2
10-11	100	643.6	1,159.0	3289.2
11-12	100	477.1	622.0	1033.5
12-13	100		586.3	819.9
13-14	100		963.6	3565.6
1908-12 Average		558.7	792.6	1881.2
Ratio-Max./Avg.		115.2%	146.1%	194.3%
Min./Avg.		83.6%	73.4%	43.3%
Total Deviation		31.6%	72.7%	150.7%
1908-14 Average			703.4	3000.2
Ratio-Max/Avg.			161.9%	182.8%
Min/Avg.			82.7%	41.0%
Total Deviation			79.2%	141.8%

The marked inferiority in parallelism of the San Gabriel precludes the use of the record of that stream to predicate run-offs south and east of the Cajon Pass, except for unimportant rough approximations.

by Hawgood
Mar. 1916

Determination of Rainfall at Sutherland and Pamo Resr.

Season	Warner	Sutherland	%	Pamo	%
1911-12	26.31				
1912-13	19.58				
1913-14	31.77	26.57	83%	17.46	55%
1914-15	43.70	37.37	69%	28.18	64%
1915-16	44.14	39.39	89%	33.89	76%
Total			241		195
Mean			80		65

Season	Average of 5 Sta. Warner	Sutherland	%	Pamo	%
1913-14	23.04	26.57	114	17.46	76
1914-15	33.42	37.37	112	28.18	84
	34.60	39.39	114	33.89	98
Total					258
Mean			114		86

Rainfall at Sutherland was assumed as being 114% of Warner Rainfall as shown in Table 5 prepared by Mr. Bowen. This percent was obtained by comparing the observed Rainfall at Sutherland for the season 1913-14, 1914-15, 1915-16, with that shown on Table 5 for the same years. This seems logical as the Sutherland area is west of this axis of the divide and should naturally get more precipitation than Warners. Furthermore, a similar relation has been noticed between other Southern California stations situated as these are in reference to the divide.

Table No. 6

Revision of Table II of Lippincott Report, Page 47.
 Runoff of San Luis Rey River at Warners for Period of Measurement at Pala - Acre Feet.

Season	Measured at Pala	Escondido In-take excluding Rincon water. Table #28 Lippincott Injunction case	Total River at Pala	River at Warners	Warners in Percent Total River at Pala	River at Warners based on 62.6% of total at Pala	Same Using Percents as given in Note (d)
1903-04	7,680	(b) 0	7,680			4,810	64.5% 4,954
1904-05	41,980	(b) 5,435	45,415			23,430	63.4% 28,793
1905-06	107,730	1,922	109,652	67,910	62.0		
1906-07	82,970	2,247	85,217			53,350	61.2% 52,153
1907-08	24,940	2,943	27,883			17,550	63.6% 17,734
1908-09	48,550	3,877	52,427			32,820	62.8% 32,924
1909-10(a)	46,640	2,640	49,280			30,850	62.7% 30,899
1910-11(a)	32,380	3,968	36,348	a(21,160)	a(58.2)	22,750	63.2% 22,972
1911-12	15,910	3,058	18,968	12,030	63.4		
1912-13	6,170	2,928	9,098	5,910	65.0		
1913-14	29,900	5,845	35,745	22,630	63.3		
1914-15	94,430	7,277	101,707	60,440	59.4		
1915-16				185,690			
				(d) Mean	62.6%		

(a) Partly Estimated. (b) Lippincott Table No. 7 and 8.

(c) Neglected.

(d) Conclusion by Post There seems to be an increase in percent as Pala flow becomes smaller in amount and the following is obtained by plating the percentages in 6th column and neglecting 1910-11.

When Pala Total River is	Ratio to Warners is
100,000	60.6%
90,000	61.0%
80,000	61.4%
70,000	61.8%
60,000	62.3%
50,000	62.7%
40,000	63.1%
30,000	63.5%
20,000	64.0%
10,000	64.4%

Year	Computed Runoff into Ouyamagu Lake, excluding Lake Area. Acre Feet
1886-87	767
87-88	2,923
88-89	4,376
89-90	6,430
90-91	8,525
91-92	8,902
92-93	1,909
93-94	11,129
94-95	
95-96	1,580
96-97	3,215
97-98	669
98-99	475
99-00	127
1900-01	2,300
01-02	1,823
02-03	1,923
03-04	385
04-05	5,258
05-06	9,785
06-07	7,550
07-08	1,635
08-09	5,683
09-10	4,095
10-11	3,400
11-12	3,023
12-13	2,383
13-14	1,932
14-15	8,630
15-16	17,800
Mean	4,329

..... O C T O B E R 1st to ..

Season	Reservoir	Runoff	Draft	Mean Area	Evaporation		Total
	Oct. 1 Acres-foot	Ac. Ft.	Ac.Ft.	Water Surface Acres	less 90% of Rainfall Feet	Ac.Ft.	Adjusted Withdrawals Acres-foot
1886-89	30000	9100	430	620	+ .72	+ 446	+ 16
1889-90	40656	17150	860	745	+ 1.14	+ 850	- 10
1890-91	60000	19250	1290	798	+ .95	+ 760	- 530
1891-92	60000	7070	1720	798	+ .24	+ 192	- 1528
1892-93	57720	11200	2150	795	+ .37	+ 294	- 1856
1893-94	58650	5600	2580	798	- .12	- 96	- 2676
1894-95	55290	36700	3010	790	+ .08	+ 63	- 2947
1895-96	60000	3500	3440	798	- .28	- 223	- 3663
1896-97	52497	8190	3870	780	+ .49	+ 382	- 3488
1897-98	51199	2100	4300	760	- .28	- 213	- 4513
1898-99	39311	1750	4300	655	- .37	- 242	- 4542
1899-1900	27159	1400	4300	530	- .08	- 42	- 4342
1900-01	15097	5040	4300	380	+ .23	+ 87	- 4213
1901-02	8714	3920	4300	255	- .02	- 5	- 4305
1902-03	789	6230	2150	135	+ .48	+ 65	- 2085
1903-04	2948	3010	2150	125	- .40	- 50	- 2200
1904-05	468	9800	4300	140	+ .99	+ 139	- 4161
1905-06	1355	25200	4300	340	+ 1.07	+ 364	- 3936
1906-07	23759	14420	4300	565	+ .57	+ 322	- 3978
1907-08	30401	4830	4300	580	+ .08	+ 47	- 4253
1908-09	23098	19460	4800	585	+ .50	+ 293	- 4007
1909-10	36781	13580	4300	685	+ .23	+ 158	- 4142
1910-11	41029	7490	4300	700	+ .33	+ 231	- 4069
1911-12	37330	4900	4300	655	+ .08	+ 52	- 4248
1912-13	29982	3059	4300	570	- .05	- 29	- 4329
1913-14	20168	7315	4300	480	+ .37	+ 178	- 4122
1914-15	16826	21791	4300	525	+ 1.07	+ 560	- 3740
1915-16	34296	<u>66591</u>	<u>4300</u>	740	+ 1.15	+ 850	- 3450
Totals		+ 339646	96750			+ 5433	- 91317

Table No.

MASS TABULATION FOR SUTHERLAND RESERVOIR.

IRRIGATION USE

Reservoir Capacity = 60,000 acre-feet (190 ft. water level).
 Draft = 12,900 acre-feet per annum at the rate of 4,300 acre-feet from October to March inclusive and 8,600 acre-feet from April to September inclusive. Initial draft 10% of total increasing uniformly and reaching 100% in 10 years.

M A R C H 31st A P R I L 1st					to	
Net Additions or Deductions from Reservoir Acre-feet	W a s t e Acre-feet	Reservoir April 1 Acre-feet	Runoff Ac.Ft.	Draft Ac.Ft.	Mean Area Water Surface Acres	Evaporation less 90% of Rainfall Feet	Acre-feet	Total Adjusted Withdrawals Acre-feet.
+ 9116	0	39116	3900	860	675	-2.22	- 1500	- 2360
+ 17140	0	57796	7350	1720	798	-2.10	- 1680	- 3400
+ 18720	18720	60000	8250	2580	798	-2.16	- 1720	- 4300
+ 5542	5542	60000	3030	3440	798	-2.35	- 1870	- 5310
+ 9344	7064	60000	4800	4300	798	-2.32	- 1850	- 6150
+ 2924	1574	60000	2400	5160	795	-2.45	- 1950	- 7110
+ 35753	29043	60000	15700	6020	798	-2.22	- 1780	- 7800
- 163	0	59837	1500	6880	785	-2.50	- 1960	- 8840
+ 4702	0	57199	3510	7740	775	-2.28	- 1770	- 9510
- 2413	0	48786	900	8600	710	-2.50	- 1775	- 10375
- 2792	0	36519	750	8600	600	-2.52	- 1510	- 10110
- 2942	0	24217	600	8600	460	-2.44	- 1120	- 9720
+ 827	0	15924	2160	8600	325	-2.36	- 770	- 9370
- 385	0	8329	1680	8600	175	-3.50	- 620	- 9220
+ 4145	0	4934	2670	4300	160	-2.29	- 356	- 4656
+ 810	0	3758	1290	4300	110	-2.53	- 280	- 4580
+ 5639	0	6107	4200	8600	165	-2.14	- 352	- 8952
+ 21264	0	22619	10800	8600	500	-2.12	- 1060	- 9660
+ 10442	0	34201	6180	8600	610	-2.26	- 1380	- 9980
+ 577	0	30978	2070	8600	565	-2.39	- 1350	- 9950
+ 15453	0	38551	8340	8600	660	-2.28	- 1510	- 10110
+ 9438	0	46219	5820	8600	710	-3.40	- 2410	- 11010
+ 3421	0	44450	3210	8600	745	-2.32	- 1730	- 10330
+ 652	0	37982	2100	8600	625	-2.40	- 1500	- 10100
- 1270	0	28712	1311	8600	515	-2.43	- 1255	- 9855
+ 3195	0	23361	3135	8600	460	-2.32	- 1070	- 9670
+ 18051	0	34877	9339	8600	620	-2.12	- 1320	- 9920
+ 63141	37437	60000	28539	8600	798	-2.10	- 1680	- 10280
+ 248329	99330		+145534	193500			- 39128	- 232628

. . . S E P T E M B E R 30th

Net Additions or Reductions from Reservoir Acre-feet	W a s t e Acre-feet	Reservoir Oct. 1 Acre-feet	Season
+ 1540	0	40656	1888-89
+ 3950	1746	60000	1889-90
+ 3950	3950	60000	1890-91
- 2280	0	57720	1891-92
- 1350	0	58650	1892-93
- 4710	0	55290	1893-94
+ 7900	7900	60000	1894-95
- 7340	0	52497	1895-96
- 6000	0	51199	1896-97
- 9475	0	39311	1897-98
- 9360	0	27159	1898-99
- 9120	0	15097	1899-1900
- 7210	0	8714	1900-01
- 7540	0	789	1901-02
- 1986	0	2948	1902-03
- 3290	0	468	1903-04
- 4752	0	1355	1904-05
+ 1140	0	23759	1905-06
- 3800	0	30401	1906-07
- 7880	0	23098	1907-08
- 1770	0	36781	1908-09
- 5190	0	41029	1909-10
- 7120	0	37330	1910-11
- 8000	0	29982	1911-12
- 8544	0	20168	1912-13
- 6535	0	16826	1913-14
- 581	0	34296	1914-15
+ 18259	18259	60000	1915-16
- 87094	31855		

. O C T O B E R 1st to

Season	Reservoir Oct. 1 Acre-feet	Runoff Ac.Ft.	Draft Ac.Ft.	Mean Area Water Surface Acres	Evaporation less 90% of Rainfall Feet	Ac.Ft.	Total Adjusted Withdrawals Acre-feet
1888-89	30000	9100	448	630	+ 0.72	+ 454	+ 6
1889-90	40844	17150	896	750	+ 1.14	+ 855	- 41
1890-91	60000	19250	1344	798	+ 0.95	+ 758	- 586
1891-92	60000	7070	1792	798	+ 0.24	+ 192	- 1600
1892-93	58472	11200	2240	795	+ 0.37	+ 294	- 1946
1893-94	59595	5600	2688	798	- 0.12	- 96	- 2784
1894-95	56433	36700	3136	795	+ 0.08	+ 64	- 3072
1895-96	60000	3500	3584	795	- 0.28	- 222	- 3800
1896-97	53853	8190	4032	785	+ 0.49	+ 385	- 3647
1897-98	54078	2100	4480	770	- 0.28	- 216	- 4696
1898-99	43837	1750	4480	700	- 0.37	- 259	- 4739
1899-1900	33238	1400	4480	575	- 0.08	- 46	- 4526
1900-01	22682	5040	4480	445	+ 0.23	+ 103	- 4377
1901-02	17700	3920	4480	415	- 0.02	- 8	- 4488
1902-03	10852	6230	4480	320	+ 0.48	+ 154	- 4326
1903-04	8019	3010	4480	235	- 0.40	- 94	- 4574
1904-05	633	9800	4480	150	+ 0.99	+ 149	- 4330
1905-06	3132	25200	4480	355	+ 1.07	+ 380	- 4100
1906-07	27210	14420	4480	585	+ 0.57	+ 333	- 4147
1907-08	35473	4830	4480	640	+ 0.08	+ 51	- 4429
1908-09	29764	19460	4480	650	+ 0.50	+ 325	- 4155
1909-10	45049	13580	4480	755	+ 0.23	+ 174	- 4306
1910-11	50803	7490	4480	765	+ 0.33	+ 253	- 4227
1911-12	48781	4900	4480	750	+ 0.08	+ 60	- 4420
1912-13	42891	3059	4480	690	- 0.05	- 35	- 4515
1913-14	34421	7315	4480	590	+ 0.37	+ 282	- 4198
1914-15	32423	21791	4480	685	+ 1.07	+ 734	- 3746
1915-16	51467	<u>66591</u>	<u>4480</u>	785	+ 1.15	<u>+ 905</u>	- 3575
Totals		339646	105280			+5929	

Table No.

MASS TABULATION FOR SUTHERLAND RESERVOIR.

DOMESTIC USE

Reservoir Capacity = 60,000 acre-feet (190 ft. water level).
 Draft = 11,200 acre-feet per annum at the rate of 4,480 acre-feet from October to March inclusive and 6,720 acre-feet from April to September inclusive. Initial draft 10% of total increasing uniformly and reaching 100% in 10 years.

M A R C H 31st A P R I L 1st					to		
Net Additions or Deductions from Reservoir Acre-feet	W a s t e Acre-feet	Reservoir : Apr. 1 : Acre-feet	Runoff Ac.Ft.	Draft Ac. Ft.	Mean Area Water Surface Acres	Evaporation less 90% of Rainfall Feet	Acre Feet	Total Adjusted Withdrawals Acre-feet	
+	9106	0	39106	3900	672	665	- 2.22	- 1490	- 2162
+	17109	0	57953	7350	1344	790	- 2.10	- 1660	- 3004
+	18664	18664	60000	8250	2016	798	- 2.16	- 1725	- 3741
+	5470	5470	60000	3030	2688	795	- 2.35	- 1870	- 3558
+	9254	7726	60000	4800	3360	795	- 2.32	- 1845	- 5205
+	2816	2411	60000	2400	4032	790	- 2.45	- 1935	- 5967
+	33628	30061	60000	15700	4704	795	- 2.22	- 1765	- 6469
-	306	0	59694	1500	5376	785	- 2.50	- 1965	- 7341
+	4543	0	58396	3510	6048	780	- 2.28	- 1780	- 7828
-	2596	0	51482	900	6720	730	- 2.50	- 1825	- 8545
-	2989	0	40848	750	6720	650	- 2.52	- 1640	- 8360
-	3126	0	30112	600	6720	535	- 2.44	- 1310	- 8030
+	663	0	23345	2160	6720	460	- 2.36	- 1085	- 7805
-	568	0	17132	1680	6720	355	- 3.50	- 1240	- 7960
+	1904	0	12756	2670	6720	300	- 2.29	- 687	- 7407
-	1564	0	6455	1290	6720	155	- 2.55	- 392	- 7112
+	5470	0	6102	4200	6720	210	- 2.14	- 450	- 7170
+	21100	0	24232	10800	6720	520	- 2.12	- 1102	- 7822
+	10273	0	37483	6180	6720	650	- 2.26	- 1470	- 8190
+	401	0	35874	2070	6720	610	- 2.39	- 1460	- 8180
+	15305	0	45069	8340	6720	720	- 2.28	- 1640	- 8360
+	9274	0	54323	5820	6720	770	- 3.40	- 2620	- 9340
+	3263	0	54066	3210	6720	765	- 2.32	- 1775	- 8495
+	480	0	49261	2100	6720	730	- 2.40	- 1750	- 8470
+	1456	0	41435	1311	6720	660	- 2.43	- 1605	- 8325
+	3117	0	37538	3135	6720	660	- 2.32	- 1530	- 8250
+	18045	0	50460	9339	6720	765	- 2.12	- 1620	- 8340
+	63016	<u>54483</u>	60000	<u>28539</u>	<u>6720</u>	798	- 2.10	<u>1680</u>	- 8400
		118815		145534	157920			- 42916	

. . . . S E P T E M B E R 30th

Net Additions or Deductions from Reservoir Acre-feet	W a s t e Acre-feet	Reservoir Oct. 1 Acre-feet	Season
+ 1738	0	40844	1888-89
+ 4346	2299	60000	1889-90
+ 4509	4509	60000	1890-91
- 1528	0	58472	1891-92
- 405	0	59595	1892-93
- 3567	0	56433	1893-94
+ 9231	9231	60000	1894-95
- 5841	0	53853	1895-96
- 4318	0	54078	1896-97
- 7645	0	43837	1897-98
- 7610	0	33238	1898-99
- 7430	0	22682	1899-1900
- 5645	0	17700	1900-01
- 6280	0	10852	1901-02
- 4737	0	8019	1902-03
- 5822	0	633	1903-04
- 2970	0	3132	1904-05
+ 2978	0	27210	1905-06
- 2010	0	35473	1906-07
- 6110	0	29764	1907-08
- 20	0	45049	1908-09
- 3520	0	50803	1909-10
- 5285	0	48781	1910-11
- 6370	0	42891	1911-12
- 7014	0	34421	1912-13
- 5115	0	32423	1913-14
+ 999	0	51467	1914-15
+ 20139	<u>20139</u>	60000	1915-16
	36178		

DOMESTIC

Reservoir
Draft = 8
feet from
April to
creasing

. O C T O B E R 1st									
Season	San Clements Oct. 1 Acre Feet	Pamo Oct. 1 Acre Feet	Runoff Acre Feet	Waste from Sutherland Acre Feet	Draft Acre Feet	Released for Riparian Rights Ac. Feet	Mean Area		Evaporation 90% Rainfall
							San Cle- ments Area	Pamo Area	San Cle ments Feet Ac. Ft.
1888-89	8570	23750	7560	0	212	500	238	660	+ 0.25 + 60
1889-90	8570	30898	10150	0	424	500	238	780	+ 0.57 +136
1890-91	8570	43450	11130	18664	636	500	238	1050	+ 0.43 +102
1891-92	8570	47500	5670	5470	848	500	238	1050	- 0.16 - 38
1892-93	8570	44976	7700	7726	1060	500	238	1050	- 0.01 - 2
1893-94	8570	45536	3710	2411	1272	500	238	1050	- 0.37 - 88
1894-95	8570	43512	28420	30061	1484	500	238	1050	+ 0.28 + 67
1895-96	8570	47500	1190	0	1696	500	238	1020	- 0.50 -119
1896-97	8570	39921	6160	0	1908	500	238	930	+ 0.09 + 21
1897-98	8570	40155	700	0	2120	500	238	880	- 0.50 -119
1898-99	8570	30181	490	0	2120	500	238	690	- 0.57 -136
1899-00	8570	20031	560	0	2120	500	238	480	- 0.35 - 84
1900-01	8570	10555	3360	0	2120	500	238	330	- 0.12 - 29
1901-02	8570	7555	1890	0	2120	500	238	250	- 0.32 - 76
1902-03	8570	2064	3010	0	2120	500	238	120	+ 0.08 + 19
1903-04	7800	0	840	0	2120	500	203	0	- 0.58 -118
1904-05	1398	0	6860	0	2120	500	81	0	+ 0.46 + 37
1905-06	4454	0	15771	0	2120	500	200	185	+ 0.52 +104
1906-07	8570	10964	9065	0	2120	500	238	450	+ 0.14 + 33
1907-08	8570	15948	2821	0	2120	500	238	440	- 0.22 - 52
1908-09	8570	11846	11207	0	2120	500	238	420	+ 0.09 + 21
1909-10	8570	19671	8470	0	2120	500	238	570	- 0.12 - 29
1910-11	8570	23221	5852	0	2120	500	238	600	- 0.03 - 7
1911-12	8570	23256	3157	0	2120	500	238	600	- 0.23 - 54
1912-13	8570	19213	987	0	2120	500	238	470	- 0.32 - 76
1913-14	8570	11787	6559	0	2120	500	238	380	- 0.01 - 2
1914-15	8570	13183	13069	0	2120	500	238	480	+ 0.52 +124
1915-16	8570	23940	61229	54483	2120	500	238	1050	+ 0.58 +138
			237587	118815	49820	14000			-167

Table No.

MASS TABULATION FOR PAMO RESERVOIR.

DOMESTIC USE.

(ALLOWANCE FOR RIPARIAN RIGHTS SAN PASQUAL VALLEY)

Reservoir Capacity = 47,500 acre-feet (156 ft. water level).
 Draft = 5300 acre feet per annum at the rate of 2,120 acre-feet from October to March inclusive, and 3,180 acre-feet from April to September inclusive. Initial draft 10% of total increasing uniformly and reaching 100% in 10 years.

T O M A R C H 31st.										A P R I L 1st .	
Evaporation less 90% Rainfall			Total Adjusted Withdrawals	Net addi- tions or Deductions from Res'r	Waste From Pamo Acre Feet	San Clemente Pamo April 1 April 1 Runoff Ac. Ft. Ac. Ft. Ac. Ft.			Waste from Sutherland	Draft	
Feet	Ac. Ft.	Feet	Ac. Ft	Ac. Ft	Feet	Ac. Ft.	Ac. Ft.	Ac. Ft.	Acres Feet	Acres Feet	
+ 0.25	+ 60	+ 165	- 487	+ 7072	0	8570	30823	3240	0	318	
+ 0.57	+136	+ 445	- 343	+ 9807	0	8570	40700	4350	2299	636	
+ 0.43	+102	+ 452	- 582	+ 29212	25162	8570	47500	4770	4509	954	
- 0.16	- 38	- 168	-1554	+ 9586	9586	8570	47500	2430	0	1272	
- 0.01	- 2	- 11	-1573	+ 13853	11329	8570	47500	3300	0	1590	
- 0.37	- 88	- 389	-2249	+ 3872	1908	8570	47500	1590	0	1908	
+ 0.28	+ 67	+ 300	-1984	+ 56864	52876	8570	47500	12180	9231	2226	
- 0.50	-119	- 510	-2835	- 1635	0	8570	45865	510	0	2544	
+ 0.09	+ 21	+ 84	-2303	+ 3857	0	8570	43778	2640	0	2862	
- 0.50	-119	- 440	-3179	- 2479	0	8570	37676	300	0	3180	
- 0.57	-136	- 394	-3150	- 2660	0	8570	27521	210	0	3180	
- 0.35	- 84	- 168	-2872	- 2312	0	8570	17719	240	0	3180	
- 0.12	- 29	- 40	-2689	+ 671	0	8570	11226	1440	0	3180	
- 0.32	- 76	- 80	-2776	- 886	0	8570	6669	810	0	3180	
+ 0.08	+ 19	+ 10	-2591	+ 419	0	8570	2483	1290	0	3180	
- 0.58	-118	0	-2738	+ 1898	0	5902	0	360	0	3180	
+ 0.46	+ 37	0	-2583	+ 4277	0	5675	0	2940	0	3180	
+ 0.52	+104	+ 96	-2420	+ 13351	0	8570	9235	6759	0	3180	
+ 0.14	+ 33	+ 63	-2524	+ 6541	0	8570	17505	3885	0	3180	
- 0.22	- 52	- 97	-2769	+ 52	0	8570	16000	1209	0	3180	
+ 0.09	+ 21	+ 37	-2562	+ 8645	0	8570	20491	4803	0	3180	
- 0.12	- 29	- 68	-2717	+ 5753	0	8570	25424	3630	0	3180	
- 0.03	- 7	- 18	-2645	+ 3207	0	8570	26428	2508	0	3180	
- 0.23	- 54	- 138	-2812	+ 345	0	8570	23601	1353	0	3180	
- 0.32	- 76	- 150	-2846	- 1859	0	8570	17354	423	0	3180	
- 0.01	- 2	- 4	-2626	+ 3933	0	8570	15720	2811	0	3180	
+ 0.52	+124	+ 250	-2246	+ 10823	0	8570	24006	5601	0	3180	
+ 0.58	+138	+ 309	-1873	+113839	90279	8570	47500	26241	0	3180	
	-167	-2164			191140			101823	16039	74730	

1st T O S E P T E M B E R 30th												
Released for Draft Acre Feet	Riparian Rights Acre	San Cle- mente Area Ft.	San Cle- Pamo Area Ft.	Evaporation Less 90% Rainfall Feet	San Cle- mente Acre Ft.	Pamo Acre Ft.	Total Adjusted With- drawals Acre ft.	Net Addi- tions or Deductions from Res'r Acre feet.	Waste from Pamo Acre Feet	San Cle- mente Oct. 1 Ac. Ft.	Pamo Oct 1 Acre Feet	Season
318	600	238	720	-2.35	560	-1692	-3170	+ 70	0	8570	30893	1888-89
636	600	238	940	-2.26	538	-2125	-3899	+ 2750	0	8570	43450	1889-90
954	600	238	1050	-2.30	547	-2415	-4516	+ 4763	4763	8570	47500	1890-91
1272	600	238	1020	-2.45	583	-2499	-4954	- 2524	0	8570	44976	1891-92
1590	600	238	1020	-2.42	576	-2498	-5266	- 1964	0	8570	45536	1892-93
1908	600	238	980	-2.52	600	-2470	-5578	- 3988	0	8570	43512	1893-94
2226	600	238	1050	-2.34	557	-2457	-5840	+15571	15571	8570	47500	1894-95
2544	840	238	960	-2.56	610	-2460	-6454	- 5944	0	8570	39921	1895-96
2862	600	238	930	-2.40	571	-2230	-6263	-3623	0	8570	40155	1896-97
3180	2010	238	780	-2.56	610	-1995	-7795	- 7495	0	8570	30181	1897-98
3180	2410	238	580	-2.58	615	-1495	-7700	- 7490	0	8570	20031	1898-99
3180	2640	238	390	-2.52	600	- 924	-7404	- 7164	0	8570	10555	1899-00
3180	600	238	305	-2.45	583	- 748	-5111	- 3671	0	8570	7555	1900-01
3180	1190	238	180	-2.50	595	- 450	-5415	- 4605	0	8570	2064	1901-02
3180	600	238	80	-2.40	571	- 192	-4543	- 3253	0	7800	0	1902-03
3180	1360	125	0	-2.59	324	- 0	-4864	- 4504	0	1398	0	1903-04
3180	600	166	0	-2.29	381	- 0	-4161	- 1221	0	4454	0	1904-05
3180	600	238	310	-2.28	543	- 707	-5030	+ 1729	0	8570	10964	1905-06
3180	600	238	460	-2.38	567	-1095	-5442	- 1557	0	8570	15948	1906-07
3180	600	238	400	-2.48	591	- 992	-5363	- 4154	0	8570	11846	1907-08
3180	600	238	530	-2.40	571	-1272	-5623	- 820	0	8570	19671	1908-09
3180	600	238	600	-2.45	583	-1470	-5833	- 2203	0	8570	23221	1909-10
3180	600	238	630	-2.42	576	-1324	-5680	- 3178	0	8570	23256	1910-11
3180	600	238	550	-2.48	591	-1370	-5741	- 4388	0	8570	19213	1911-12
3180	1240	238	390	-2.50	595	- 975	-5990	- 5567	0	8570	11787	1912-13
3180	600	238	410	-2.42	576	- 992	-5348	- 2537	0	8570	13188	1913-14
3180	600	238	590	-2.28	542	-1345	-5667	- 66	0	8570	23940	1914-15
3180	600	238	1050	-2.26	538	-2373	-6691	+19550	19550	8570	47500	1915-16
74730	24290				15694	-40,625			39884			

Table No.

MASS FABULATION FOR PAMO RESERVOIR.

DOMESTIC USE (NO ALLOWANCE FOR RIPARIAN RIGHTS)

Reservoir Capacity - 47,500 acre-feet (156 ft. water level).
 Draft - 7,000 acre-feet per annum at the rate of 2,500 acre-feet from October to March inclusive, and 4,500 acre-feet from April to September inclusive. Initial draft 10% of total increasing uniformly and reaching 100% in 10 years.

..... OCTOBER 1st TO MARCH 31st																
Season	San Clemente	Pamo	Runoff	Waste from Sutherland	Draft	Mean Area		Evap. less 50% Rainfall			Total Adjusted	Net Additions or Deductions	Waste from Pamo	San Clemente	Pamo	Runoff
	Oct. 1	Oct. 1	Ac. Ft.	Acres	Acres	San Clemente	Pamo	Feet	San Clemente	Pamo	Acres Feet	Acres Feet	Ac. Ft.	Acres Ft.	Ac. Ft.	Acres Ft.
1888-89	8570	23750	7560	0	280	228	650	+0.25	+ 52	+ 162	- 59	+ 7501	0	8570	31251	3240
1889-90	8570	31796	16150	0	560	228	820	+0.57	+ 128	+ 423	- 49	+ 10199	0	8570	41955	4350
1890-91	8570	45011	11120	18664	840	228	1020	+0.43	+ 102	+ 445	- 295	+ 29499	27010	8570	47500	4770
1891-92	8570	47500	5670	5470	1120	228	1020	-0.16	- 22	- 168	- 1326	+ 9814	9814	8570	47500	2420
1892-93	8570	45143	7700	7726	1400	228	1020	-0.01	- 2	- 11	- 1413	+ 14013	11656	8570	47500	3300
1893-94	8570	43575	3710	2411	1580	228	1020	-0.37	- 62	- 239	- 2157	+ 3964	2040	8570	47500	1590
1894-95	8570	43450	28420	20061	1960	228	1020	+0.22	+ 67	+ 294	- 1597	+ 56882	62332	8570	47500	12180
1895-96	8570	47500	1120	0	2240	228	1020	-0.50	- 119	- 512	- 2274	- 1684	0	8570	45816	510
1896-97	8570	38896	6160	0	2520	228	945	+0.02	+ 21	+ 85	- 2414	+ 3746	0	8570	43642	2640
1897-98	8570	39771	700	0	2800	228	880	-0.50	- 119	- 440	- 3359	- 2559	0	8570	37112	300
1898-99	8570	20592	490	0	2800	228	695	-0.57	- 126	- 394	- 2322	- 2342	0	8570	27750	210
1899-1900	8570	21545	560	0	2800	228	520	-0.35	- 84	- 182	- 2066	- 2505	0	8570	19059	240
1900-01	8570	12339	3560	0	2800	228	280	-0.12	- 29	- 110	- 2959	+ 421	0	8570	13610	1440
1901-02	8570	2634	1890	0	2800	228	300	-0.22	- 76	- 218	- 2094	- 1204	0	8570	8430	610
1902-03	8570	3870	2010	0	2800	228	180	+0.02	+ 19	+ 14	- 2767	+ 245	0	8570	4113	1290
1903-04	8570	551	840	0	2800	228	80	-0.52	- 129	- 29	- 2953	- 2113	0	6803	0	260
1904-05	2553	0	6860	0	2800	166	0	+0.44	+ 76	0	- 2724	+ 4124	0	6689	0	2940
1905-06	4992	0	15771	0	2800	208	290	+0.52	+ 108	+ 104	- 2324	+ 15455	0	8570	9611	6759
1906-07	8570	10897	9065	0	2800	228	290	+0.14	+ 35	+ 55	- 2713	+ 6361	0	8570	17250	3885
1907-08	8570	15321	2821	0	2800	228	400	-0.22	- 52	- 68	- 2949	- 112	0	8570	15202	1209
1908-09	8570	19792	11207	0	2800	228	420	+0.02	+ 21	+ 37	- 2742	+ 2465	0	8570	19167	4803
1909-10	8570	12047	8470	0	2800	228	520	-0.12	- 29	- 64	- 2295	+ 5577	0	8570	23624	3550
1910-11	8570	21117	5852	0	2800	228	560	-0.02	- 7	- 17	- 2224	+ 2022	0	8570	24145	2508
1911-12	8570	20492	2157	0	2800	228	520	-0.22	- 54	- 121	- 2975	+ 122	0	8570	20680	1553
1912-13	8570	16022	987	0	2800	228	420	-0.22	- 76	- 121	- 2007	- 2020	0	8570	14022	423
1913-14	8570	8885	6552	0	2800	228	260	-0.01	- 2	- 4	- 2206	+ 2753	0	8570	12222	2211
1914-15	8570	9399	12069	0	2800	228	400	+0.52	+ 124	+ 208	- 2462	+ 10601	0	8570	20500	5401
1915-16	8570	20194	61229	54423	2800	228	1020	+0.52	+ 124	+ 602	- 2053	+115659	66555	8570	47500	26241
Totals			237587	118815	45500				- 124	- 227			190750			101225

..... APRIL 1st 70 SEPTEMBER 30th 1

Runoff Acres Ft.	Waste from Sutherland Acres Feet	Draft Ac. Ft.	Mean Area San Clemente Acres	Pano Acres	Evap. less 90% Rainfall Feet	San Cle- mente Ac. Ft.	Pano Ac. Ft.	Total Adjusted Withdrawals Acres Feet	Net Additions or Deductions from Res'r Acres Feet	Waste from Pano Acres Feet	San Clemente October 1 Acres Feet	Pano October 1 Acres Ft.	Season
3240	0	420	238	730	-2.35	-340	-1715	-2695	+ 545	0	8570	21796	1888-89
4350	2299	840	238	980	-2.26	-438	-2215	-3595	+ 2054	0	8570	45011	1889-90
4770	4509	1260	238	950	-2.30	-547	-2415	-4222	+ 5057	5057	8570	47500	1890-91
2420	0	1680	238	1030	-2.45	-585	-2524	-4787	- 2357	0	8570	45143	1891-92
5300	0	2100	238	1020	-2.42	-578	-2548	-4224	- 924	0	8570	46576	1892-93
1590	0	2520	238	1000	-2.52	-600	-2520	-5649	- 4930	0	8570	43450	1893-94
12180	9231	2940	238	1050	-2.34	-557	-2457	-5954	+ 15457	15457	8570	47500	1894-95
510	0	3360	238	960	-2.55	-610	-2460	-6450	- 5920	0	8570	39896	1895-96
2540	0	3780	238	900	-2.40	-571	-2160	-6511	-6371	0	8570	39771	1896-97
500	0	4200	238	795	-2.56	-610	-2010	-6820	- 6520	0	8570	30592	1897-98
210	0	4200	238	615	-2.58	-615	-1590	-6395	- 6185	0	8570	21565	1898-99
240	0	4200	238	440	-2.52	-600	-1110	-5910	- 5670	0	8570	13389	1899-1900
1440	0	4200	238	340	-2.45	-585	- 855	- 5616	- 4176	0	8570	9634	1900-01
810	0	4800	238	235	-2.50	-595	- 575	- 5370	- 4560	0	8570	3870	1901-02
1290	0	4200	238	118	-2.40	-571	- 281	- 5052	- 3782	0	8570	581	1902-03
260	0	4200	198	0	-2.58	-410	- 0	- 4602	- 4242	0	2553	0	1903-04
2940	0	4200	191	0	-2.29	-437	- 0	- 4837	- 1697	0	4992	0	1904-05
6759	0	4200	238	320	-2.28	-545	- 730	- 5473	+ 1286	0	8570	10897	1905-06
3835	0	4800	238	440	-2.33	-567	- 1047	- 5814	- 1929	0	8570	15321	1906-07
1299	0	4200	238	370	-2.48	-561	- 918	- 5709	- 4500	0	8570	10702	1907-08
4803	0	4200	238	480	-2.40	-571	- 1152	- 5925	- 1120	0	8570	18047	1908-09
3530	0	4200	238	530	-2.45	-565	- 1348	- 6181	- 2501	0	8570	21117	1909-10
2508	0	4200	238	570	-2.42	-578	- 1379	- 6155	- 3647	0	8570	20498	1910-11
1353	0	4200	238	480	-2.48	-591	- 1190	- 5921	- 4628	0	8570	16052	1911-12
423	0	4200	238	310	-2.50	-595	- 775	- 5570	- 5147	0	8570	8885	1912-13
2511	0	4200	238	320	-2.42	-578	- 774	- 5580	- 2729	0	8570	9899	1913-14
5601	0	4200	238	510	-2.28	-542	- 1163	- 5905	- 304	0	8570	20196	1914-15
<u>25241</u>	<u>20139</u>	<u>4200</u>	<u>238</u>	<u>1050</u>	<u>-2.28</u>	<u>-538</u>	<u>- 2575</u>	<u>- 7111</u>	<u>+ 29269</u>	<u>39269</u>	<u>8570</u>	<u>47500</u>	<u>1915-16</u>
101323	35178	98700				-15938	-39253			59673			

. O C T O B E R 1st F O												
Season	San	Pamo	Waste from	Draft	Released	Mean Area	Evaporation less		90% Rainfall			
	Clemente	Oct. 1					Ruhoff	Sutherland	for	San Cle-	Pamo	San Cle-
	Oct. 1	Acre	Acre	Acre	Ac.Ft.	Ac.Ft.	Ac.Ft.	Ac.Ft.	Feet	Ac.Ft.	Feet	Feet
	Acres	Feet	Feet	Feet	Feet	Feet	Feet	Feet	Feet	Feet	Feet	Feet
1888-89	8570	23750	7560	0	200	500	238	650	+ .25	+ 60	+ 162	
1889-90	8570	30792	10150	0	400	500	238	810	+ .57	+ 136	+ 460	
1890-91	8570	42696	11130	18720	600	500	238	1000	+ .43	+ 102	+ 430	
1891-92	8570	47500	5670	5542	800	500	238	1050	+ .16	- 38	- 168	
1892-93	8570	44607	7700	7064	1000	500	238	1035	- .01	- 2	- 10	
1893-94	8570	45114	3710	1574	1200	500	238	1040	- .37	- 88	- 385	
1894-95	8570	42940	28420	29043	1400	500	238	1010	+ .28	+ 67	+ 283	
1895-96	8570	47500	1190	0	1600	500	238	1030	- .50	- 119	- 515	
1896-97	8570	39356	6160	0	1800	500	238	930	+ .09	+ 21	+ 84	
1897-98	8570	39010	700	0	2000	500	238	850	- .50	- 119	- 425	
1898-99	8570	22426	490	0	2000	500	238	640	- .57	- 136	- 365	
1899-1900	8570	17680	560	0	2000	500	238	450	- .35	- 84	- 158	
1900-01	8570	7588	2360	0	2000	500	238	260	- .12	- 29	- 21	
1901-02	8570	4155	1890	0	2000	500	238	150	- .32	- 76	- 48	
1902-03	8570	196	3010	0	1000	500	238	0	+ .08	+ 19	+ 0	
1903-04	8373	0	840	0	1000	500	210	0	- .58	- 122	- 0	
1904-05	2203	0	6860	0	2000	500	130	0	+ .46	+ 60	+ 0	
1905-06	4585	0	15771	0	2000	500	200	180	+ .52	+ 104	+ 94	
1906-07	8570	10415	9065	0	2000	500	238	370	+ .14	+ 33	+ 52	
1907-08	8570	14783	2821	0	2000	500	238	380	- .22	- 52	- 84	
1908-09	8570	10146	11207	0	2000	500	238	380	+ .09	+ 22	+ 34	
1909-10	8570	17481	8470	0	2000	500	238	490	- .12	- 29	- 142	
1910-11	8570	20427	5852	0	2000	500	238	510	- .03	- 7	- 15	
1911-12	8570	19829	3157	0	2000	500	238	490	- .23	- 55	- 113	
1912-13	8570	15340	987	0	2000	500	238	380	- .32	- 76	- 122	
1913-14	8570	7437	6559	0	2000	500	238	280	- .01	- 2	- 3	
1914-15	8570	8446	13069	0	2000	500	238	370	+ .52	+ 124	+ 192	
1915-16	8570	18720	61229	37437	2000	500	238	760	+ .58	+ 138	+ 440	
			237587	99380	45000	14000				- 148	- 353	

Table No.

MASS TABULATION FOR PAMO RESERVOIR.

IRRIGATION USE. (ALLOWANCE FOR RIPARIAN RIGHTS SAN PASQUAL VALLEY)

Reservoir Capacity = 47,500 acre-feet (156 ft. water level).
 Draft = 6,000 acre-feet per annum at the rate of 2,000 acre-feet from October to March inclusive, and 4,000 acre-feet from April to September inclusive. Initial draft 10% of total increasing uniformly and reaching 100% in 10 years.

. M A R C H 31st A P R I L 1st T O							
Total Adjustments With-drawals	Net Additions or Deductions from Res'r	Water from Pamo Acre Feet	San Clemente April 1 Ac.Ft.	Pamo Apr. 1 Acre Feet	Waste from Runoff Sutherland Acre Feet	Waste from Sutherland Acre Feet	Released for Riparian Rights Ac.Ft.	Mean Area San Clemente	Mean Area Pamo	Evaporation Less 90% Rainfall	San Clemente Acre Feet	Pamo Acre Feet	
- 478	+ 7988	0	8570	30832	3240	0	400	600	238	730	-2.35	- 560	- 1720
- 304	+ 9846	0	8570	40638	4350	1746	800	600	238	930	-2.26	- 538	- 2100
- 568	+ 29282	24478	8570	47500	4770	3950	1200	600	238	1050	-2.30	- 547	- 2420
- 1506	+ 9706	9706	8570	47500	2430	0	1600	600	238	1035	-2.45	- 583	- 2540
- 1512	+ 13252	10359	8570	47500	3300	0	2000	600	238	1035	-2.42	- 576	- 2510
- 2173	+ 3111	726	8570	47500	1590	0	2400	600	238	1010	-2.52	- 600	- 2550
- 1550	+ 55913	51353	8570	47500	12180	7900	2800	600	238	1050	-2.34	- 557	- 2360
- 2734	- 1544	0	8570	45956	510	0	3200	840	238	960	-2.56	- 610	- 2460
- 2195	+ 3965	0	8570	43321	2640	0	3600	600	238	910	-2.40	- 571	- 2180
- 3044	- 2344	0	8570	36666	300	0	4000	2010	238	750	-2.56	- 610	- 1920
- 3001	- 2511	0	8570	25915	210	0	4000	2410	238	550	-2.58	- 615	- 1420
- 2742	- 2182	0	8570	15498	240	0	4000	2540	238	360	-2.52	- 600	- 910
- 2560	+ 800	0	8570	8388	1440	0	4000	600	238	200	-2.45	- 583	- 490
- 2624	- 734	0	8570	3421	810	0	2000	1190	238	100	-2.50	- 595	- 250
- 1481	+ 1529	0	8570	1725	1290	0	2000	600	225	30	-2.40	- 540	- 72
- 1622	- 782	0	7591	0	360	0	4000	1360	150	0	-2.59	- 388	- 0
- 2440	+ 4420	0	6623	0	2940	0	4000	600	165	0	-2.29	- 378	- 0
- 2302	+ 13469	0	8570	9484	5759	0	4000	600	238	300	-2.28	- 543	- 685
- 2415	+ 6650	0	8570	17065	3885	0	4000	600	238	420	-2.38	- 567	- 1000
- 2636	+ 185	0	8570	14968	1209	0	4000	600	238	340	-2.48	- 591	- 840
- 2444	+ 8763	0	8570	18909	4803	0	4000	600	238	440	-2.40	- 571	- 1060
- 2671	+ 5799	0	8570	23280	3630	0	4000	600	238	530	-2.45	- 583	- 1300
- 2522	+ 3330	0	8570	23757	2508	0	4000	600	238	520	-2.42	- 576	- 1260
- 2668	+ 489	0	8570	20318	1353	0	4000	600	238	460	-2.48	- 591	- 1140
- 2698	- 1711	0	8570	13629	423	0	4000	1240	238	310	-2.50	- 595	- 780
- 2505	+ 4054	0	8570	11491	2811	0	4000	600	238	280	-2.42	- 576	- 680
- 2184	+ 10885	0	8570	19331	5601	0	4000	600	238	470	-2.28	- 542	- 1070
- 1922	+ 96744	67964	8570	47500	26241	18259	4000	600	238	1050	-2.26	- 538	- 2380
- 59501	+ 277466	164585			101823	21855	90000	24290			-15724	- 38097	

ALLEY)

. . . S E P T E M B E R 30th

ss	Total Adjusted Pamo Acres Feet	With- drawals Ac.Ft.	Net Addi- tions or Deductions from Res'r Ac.Ft.	Waste from Pamo Acres Feet	San Clements Oct.1 Ac.Ft.	Pamo October 1 Ac. Ft.	Season
1720	-	3280	- 40	0	8570	30792	1888-89
2100	-	4038	+ 2058	0	8570	42696	1889-90
2420	-	4767	+ 3953	3953	8570	47500	1890-91
2540	-	5323	- 2893	0	8570	44607	1891-92
2510	-	5686	- 2386	0	8570	45114	1892-93
2550	-	6150	- 4560	0	8570	42940	1893-94
2360	-	6317	+13763	13763	8570	47500	1894-95
2460	-	7110	- 6600	0	8570	39356	1895-96
2180	-	6951	- 4311	0	8570	39010	1896-97
1920	-	8540	- 8240	0	8570	28426	1897-98
1420	-	8445	- 8235	0	8570	17680	1898-99
910	-	8150	- 7910	0	8570	7588	1899-1900
490	-	5673	- 4233	0	8570	4155	1900-01
250	-	4035	- 3225	0	8570	196	1901-02
72	-	3212	- 1922	0	8373	0	1902-03
0	-	5748	- 5388	0	2203	0	1903-04
0	-	4978	- 2038	0	4585	0	1904-05
685	-	5828	+ 931	0	8570	10415	1905-06
1000	-	6167	- 2282	0	8570	14783	1906-07
840	-	6031	- 4822	0	8570	10146	1907-08
1060	-	6231	- 1428	0	8570	17481	1908-09
1300	-	6483	- 2853	0	8570	20427	1909-10
1260	-	6436	- 3928	0	8570	19829	1910-11
1140	-	6331	- 4978	0	8570	15340	1911-12
780	-	6615	- 6192	0	8570	7437	1912-13
680	-	5856	- 3045	0	8570	8446	1913-14
1070	-	6212	- 611	0	8570	18720	1914-15
2380	-	7518	+36982	36982	8570	47500	1915-16
38097	-	168111	-34433	54698			

..... O C T O B E R 1st T O

Season	San Clemente	Pamo	Runoff	Waste from Sutherland	Draft	Mean Area		Evap. less 90% Rainfall	Total		
	Oct. 1 Acre-feet	Oct. 1 Ac. Ft.	Ac. Ft.	Acre Feet	Acre Feet	San Cle- mentes Acres	Pamo Acres		San Cle- mentes Ac. Ft.	Pamo Ac. Ft.	Adjusted Withdrawals Acre Feet
1888-89	8570	23750	7560	0	265	238	660	+.25	+ 60	+165	- 40
1889-90	8570	31658	10150	0	530	238	810	+.57	+136	+562	+ 168
1890-91	8570	44847	11130	18720	795	238	1050	+.43	+102	+452	- 241
1891-92	8570	47500	5670	5542	1060	238	1050	-.16	- 38	-168	- 1266
1892-93	8570	44731	7700	7064	1325	238	1050	-.01	- 2	- 11	- 1338
1893-94	8570	45077	3710	1574	1590	238	1030	-.37	- 88	-381	- 2059
1894-95	8570	42714	28420	29043	1855	238	1050	+.28	+ 67	+300	- 1488
1895-96	8570	47500	1190	0	2120	238	1030	-.50	-119	-515	- 2754
1896-97	8570	39136	6160	0	2385	238	930	+.09	+ 22	+ 84	--2279
1897-98	8570	38137	700	0	2650	238	850	-.50	-119	-425	- 3194
1898-99	8570	28113	490	0	2650	238	640	-.57	-136	-365	- 3151
1899-1900	8570	18327	560	0	2650	238	450	-.35	- 83	-158	- 2891
1900-01	8570	9426	3360	0	2650	238	310	-.12	- 29	- 37	- 2716
1901-02	8570	4990	1890	0	2650	238	190	-.32	- 76	- 61	- 2787
1902-03	8570	1283	3010	0	1325	238	120	+.08	+ 19	+ 10	- 1296
1903-04	8570	755	840	0	1325	238	70	-.58	-138	- 41	- 1504
1904-05	3253	0	6860	0	2650	180	0	+.46	+ 83	+ 0	- 2567
1905-06	4740	0	15771	0	2650	208	190	+.52	+108	+ 99	- 2443
1906-07	8570	9684	9065	0	2650	238	360	+.14	+ 33	+ 50	- 2567
1907-08	8570	13367	2821	0	2650	238	370	-.22	- 52	- 81	- 2783
1908-09	8570	7931	11207	0	2650	238	380	+.09	+ 21	+ 34	- 2595
1909-10	8570	14420	8470	0	2650	238	470	-.12	- 29	- 56	- 2735
1910-11	8570	16729	5852	0	2650	238	480	-.03	- 7	- 14	- 2671
1911-12	8570	15433	3157	0	2650	238	425	-.23	- 55	- 98	- 2803
1912-13	8570	10310	987	0	2650	238	300	-.32	- 76	- 96	- 2822
1913-14	8570	2503	6559	0	2650	238	180	-.01	- 2	- 2	- 2654
1914-15	8570	2860	13069	0	2650	238	170	+.52	+124	+ 89	- 2437
1915-16	8570	12405	<u>61229</u>	<u>37437</u>	<u>2650</u>	238	710	+.58	<u>+138</u>	<u>+412</u>	<u>- 2100</u>
Totals			237587	99380	59625				-136	-252	-60013

Table No.

MASS TABULATION FOR PAMO RESERVOIR.

IRRIGATION USE.

(NO ALLOWANCE FOR RIPARIAN RIGHTS)

Reservoir Capacity = 47,500 acre-feet (156 ft. water level).
 Draft = 7,950 acre-feet per annum at the rate of 2,650 acre-feet from October to March inclusive, and 5,300 acre-feet from April to September inclusive. Initial draft 10% of total increasing uniformly and reaching 100% in 10 years.

M A R C H 31st		A P R I L 1st					T O		S		
Net Additions or Deductions from Reservoir Acre Feet	Waste from Pamo Ac. Ft.	San Cle- mente :Apr.1 :Ac. Ft.	Pamo Apr.1 Ac. Ft.	Runoff Ac. Ft.	Waste from Sutherland Acre Feet	Draft Ac. Ft.	Mean Area San Cle- mente Acres	Pamo Acres	Evap. less 90% Rainfall Feet	San Cle- mente Ac. Ft.	Pamo Ac. Ft.
+ 7520	0	8570	31270	3240	0	530	238	750	-2.35	560	-1762
+ 10318	0	8570	41976	4350	1746	1060	238	940	-2.26	540	-2125
+ 29609	26456	8570	47500	4770	3950	1590	238	1050	-2.30	550	-2415
+ 9946	9946	8570	47300	2430	0	2120	238	1020	-2.45	580	-2499
+ 13426	10657	8570	47500	3300	0	2650	238	1020	-2.42	575	-2498
+ 3225	802	8570	47500	1590	0	3180	238	1030	-2.52	600	-2596
+ 55975	51189	8570	47500	12180	7900	3710	238	1050	-2.34	558	-2457
- 1564	0	8570	45936	510	0	4240	238	960	-2.56	610	-2460
+ 3881	0	8570	43017	2640	0	4770	238	910	-2.40	570	-2180
- 2494	0	8570	35643	300	0	5300	238	750	-2.56	610	-1920
- 2661	0	8570	25452	210	0	5300	238	550	-2.58	615	-1420
- 2331	0	8570	15996	240	0	5300	238	360	-2.52	600	-910
+ 644	0	8570	10070	1440	0	5300	238	260	-2.45	583	-637
- 897	0	8570	4093	810	0	2650	238	150	-2.50	595	-375
+ 1714	0	8570	2997	1290	0	2650	238	130	-2.40	570	-312
- 664	0	8570	91	360	0	5300	195	0	-2.59	468	0
+ 4293	0	7546	0	2940	0	5300	195	0	-2.29	446	0
+ 13328	0	8570	9498	6759	0	5300	238	320	-2.28	543	-730
+ 6498	0	8570	16182	3885	0	5300	238	360	-2.38	567	-833
+ 38	0	8570	13405	1209	0	5300	238	320	-2.48	590	-793
+ 8612	0	8570	16543	4803	0	5300	238	440	-2.40	570	-1056
+ 5735	0	8570	20155	3630	0	5300	238	480	-2.45	580	-1176
+ 2181	0	8570	19910	2508	0	5300	238	460	-2.42	575	-1110
+ 354	0	8570	15787	1353	0	5300	238	380	-2.48	590	-940
- 1835	0	8570	8475	423	0	5300	238	200	-2.50	595	-500
+ 3905	0	8570	6408	2911	0	5300	238	200	-2.42	575	-484
+ 10632	0	8570	13492	5601	0	5300	238	370	-2.28	543	-845
+ 96566	61471	8570	47500	26241	18259	5300	238	1050	-2.26	540	-2370
+ 276954	160521			101823	31855	119250				-15898	-37403

. S E P T E M B E R 30th

San Clemente	90% Rainfall	Total Adjusted Withdrawals	Net Additions or Deductions from Res'r	Waste from Pamo	San Clemente Oct. 1	Pamo Oct. 1	Season
Ac. Ft.	Ac. Ft.	Acres Feet	Acres Feet	Ac. Ft.	Acres Feet	Ac. Ft.	
560	- 1762	- 2852	+ 388	0	0	31658	1888-89
540	- 2125	- 3725	+ 2371	0	0	44347	1889-90
550	- 2415	- 4555	+ 4165	4165	0	47500	1890-91
580	- 2499	- 5199	- 2769	0	0	44731	1891-92
575	- 2498	- 5723	- 2423	0	0	45077	1892-93
600	- 2596	- 6376	- 4786	0	0	42714	1893-94
558	- 2457	- 6725	+13355	13355	0	47500	1894-95
610	- 2460	- 7510	- 6800	0	8570	39136	1895-96
570	- 2180	- 7520	- 4880	0	8570	38137	1896-97
610	- 1920	- 7830	- 7530	0	8570	28113	1897-98
615	- 1420	- 7335	- 7125	0	8570	18327	1898-99
600	- 910	- 6810	- 6570	0	8570	9426	1899-1900
583	- 637	- 6520	- 5080	0	8570	4990	1900-01
595	- 375	- 3620	- 2810	0	8570	1283	1901-02
570	- 312	- 3532	- 2242	0	8570	755	1902-03
468	- 0	- 5768	- 5408	0	3253	0	1903-04
446	- 0	- 5746	- 2806	0	4740	0	1904-05
543	- 730	- 6573	+ 186	0	8570	9684	1905-06
567	- 833	- 6700	- 2815	0	8570	13367	1906-07
590	- 793	- 6683	- 5474	0	8570	7921	1907-08
570	- 1056	- 6926	- 2123	0	8570	14420	1908-09
580	- 1176	- 7056	- 3426	0	8570	16729	1909-10
575	- 1110	- 6985	- 4477	0	8570	15433	1910-11
590	- 940	- 6830	- 5477	0	8570	10310	1911-12
595	- 500	- 6395	- 5972	0	8570	2503	1912-13
575	- 484	- 6359	- 3548	0	8570	2860	1913-14
543	- 845	- 6688	- 1087	0	8570	12405	1914-15
540	- 2370	- 8210	+36290	36290	8570	47500	1915-16
15898	-37403	-172551	-38873	53810			

Ed Fletcher Papers

1870-1955

MSS.81

Box: 38 Folder: 3

**Business Records - Reports - Hawgood,
H - "Report of Board on the Net Safe
Yield Sutherland and Pamo Reservoirs"**



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