

IRRIGATION TABLE PREPARED BY

W. S. POST.

Crop	Irrigating Season	No. of Months	Period between application of water	No. of Applications	Vertical depth of water applied each application	Vertical depth for season	1 miner's inch (out without storage) provides for	Cubic quantity required in	1 miner's inch stored & regulated less 20% losses provides for
					Linear In.	Lin. In.	Acres	Acres	Acres
Oranges & lemons	May to Oct	inc. 6	6 weeks to	4	2" to	8" to	10 Ac.	Min .67	18
	Apl to Nov	" 8	5 "	7	3" to	21" to	5 "	Max 2.25	5
Alfalfa	May to Nov	" 8	6 weeks	6	3"	18"	6 1/2 Ac.	1.50	8
	Apl to Nov	" 9	5	8	5"	40"	3 1/2 "	3.3	3
Beans & corn	June & July	2		1	2" to	2"	14"	Min .17	68
	"	2	4 weeks	2	3" to	6"	4 1/2 "	Max .50	56
Deciduous Fruit trees	May occas- ional seasons	1		1	6"	6"	5 Ac.	.50	56
Intensive vegetable farming	Apr - Dec		continuous			24" to	5 Ac.	2.	6
						56"	3 1/2 "	3.	4

~~V. L. & W. Co.~~

Irrigation Draught:

This study ~~is~~ is an attempt to define the rate of demand for irrigation and domestic use for the ~~the~~ proposed system of the Volcan Land & Water Co.

At the outset the ratio of domestic to use to irrigation use must be assumed.

In the case of the Cuyamaca Water Co. the domestic is only 9% of the total.

However it is within the control of a corporation water corporation to so dispose their areas that irrigation use even if initiated will eventually become domestic. This ~~the~~ process is recognized in study of the Los Angeles supply and Mr. Mulholland has found ~~that~~ that the amount required for ~~each~~ irrigation and for suburban residence districts is practically identical in amount, ~~7.5~~ ~~acres~~ the duty being ~~9.5~~ 1 Miners Inch to 7.5 acres.

Here it will be assumed that ~~33~~ ³³/₂₅ % of the water will be used in domestic + ⁶⁷/₇₅ % in irrigation upon ~~the~~ areas which will gradually be subdivided. ~~The~~ ~~range~~ The tendency will be toward a normal domestic curve, ~~which~~ ~~of~~ ~~use,~~ ~~more~~ ~~uniform~~ than. This estimate will represent the variation at the start and will be shown a maximum variations.

SAFE YIELDS OF VOLCAN RESERVOIRS AS DETERMINED BY VARIOUS ENGINEERS

Engineer	Warner Reservoir				Pamo Reservoir				Sutherland Reservoir				Carroll Reservoir			
	Cu Ft: per sec.	Prior: ities:	Net c f s:	Net per day	c f s:	Prior: ities:	Net c f s:	Net per day	c f s:	Prior: ities:	Net c f s:	Net per day	c f s:	Prior: ities:	Net c f s:	Net per day
1913 W C Finkle	34.															
1912 H. Hawgood	44.2															
1911 J B Lippincott(actual) (as reported)			6.9	4.5												
			35.1	22.5												
1912 H T Corey	19.3				4.8											
1911 W S Post	20.0	1.0	29.0	18.7	6.9				14.5							
1914 P E Harroun	24.3	1.0	23.3	15.0	8.5	5.3	3.2	2.1	9.2	0	9.2	5.9	5.7	1.8	3.9	2.5
1914 Post	36.5	3.6	29.9													

1 sec ft = 646,000 gal per day
 1 " " = 50 M.I.

SAFE YIELDS OF VOLCAN RESERVOIRS AS DETERMINED BY VARIOUS ENGINEERS

Engineer	Warner Reservoir				Pamo Reservoir				Sutherland Reservoir				Carroll Reservoir			
	Cu Ft: per sec.	Prior: ities:	Net of s:	Not per day	:	:	:	:	:	:	:	:	:	:	:	:
1913 W C Finkle	34.															
1912 H. Hawgood	44.2															
1911 J B Lippincott (actual) (as reported)			6.9	4.5												
			35.1	22.5												
1912 H T Corey	19.3				4.8											
1911 W S Post	20.0	1.0	29.0	18.7	6.9				14.3							
1914 F E Harroun	24.3	1.0	23.3	15.0	8.5	5.3	3.2	2.1	9.2	0	9.2	5.9	5.7	1.8	3.9	2.5
1914 Post	36.5	3.6	29.9													

1 sec ft = 646,000 gal. per day

1 " " = 50 M.I.

WATER LEVEL OBSERVATIONS AT WELL "X" AT THE
SANTA FE PUMPING PLANT ON SAN DIEGUITO RIVER.

(R.P. = top of concrete where C.I. cover is and 3 ft. below)
(ground 50 ft. North of Red Pump House Site U S G S Elev _____)

Date	Observer	Depth to water from reference point	Depth to water from ground surface.
Jan. 26, 1913	W. S. Post	10.58	
Mar 3,	F. C. Ebert	8.25	
May 18,	W. E. Maguire	10.33	
" 31,	"	10.42	
June 15,	"	11.67	
" 30,	"	12.17	
July 15,	"	12.50	
" 31,	"	13.00	
Aug. 15,	"	12.66	
" 31,	"	13.75	
Sept 15,	"	13.75	
" 30,	"	13.75	
Oct. 15,	"	12.08	
Nov. 1,	"	12.83	
" 15,	"	12.17	
" 30,	"	11.75	
Dec. 15,	"	11.42	
" 31,	"	11.33	
Jan 15, 1914	"	11.21	
" 31,	"	5.00	
Feb. 15,	"	4.17	
Mar. 15,	"	3.25	
Apr. 1,	"	3.12	
" 15,	"	3.25	
" 30,	"	2.88	
May 15,	"	4.58	
" 31,	"	4.08	
June 15,	"	5.58	
" 30,	"	7.00	
July 15,	"	8.00	
" 31,	"	8.83	
Aug. 15,	"	8.92	
" 31,	"	8.92	
Sept. 15,	"	9.33	
" 30,	"	8.42	
Oct. 15,	"	8.83	
" 31,	"	8.25	
Nov. 15,	"	8.83	
" 30,	"	8.92	
Dec. 15,	"	8.92	
" 31,	"	8.92	

WATER LEVEL OBSERVATIONS AT WELL "X"
AT THE SANTA FE PUMPING PLANT ON SAN DIEGUITO
RIVER (Cont'd)

Date	Observer	Depth to water from reference point.	Depth to water from ground surface.
Jan. 15, 1915	W. E. Maguire	9.08	
" 31,	"	2.17	
Feb. 1,	"	3.67	
" 2,	"	2.00	
" 3,	"	0.50	
" 4,	"	1.50	
" 5,	"	1.92	
" 6,	"	2.08	
" 7,	"	2.17	
" 8,	"	4.00	
" 9,	"	2.17	
" 10,	"		0' - 5"
" 11,	"		0' - 0"
" 12,	"		0' - 4"
" 13,	"		0' - 5"
" 14,	"		1' - 1"
" 15,	"		2' - 11"
" 16,	"		1' - 3"
" 17,	"		1' - 3"
" 18,	"		1' - 4"
" 19,	"		1' - 5"
" 20,	"		1' - 4"
" 21,	"		0' - 10"
" 22,	"		1' - 7"
" 23,	"		1' - 9"
" 24,	"		2' - 3"
" 25,	"		1' - 3"
" 26,	"		1' - 6"
" 27,	"		1' - 5"
" 28,	"		1' - 5"
Mar. 1,	"		1' - 1"
" 2,	"		0' - 5"
" 3,	"		2' - 5"
" 4,	"		2' - 10"
" 5,	"		1' - 5"
" 6,	"		1' - 4"
" 7,	"		1' - 6"
" 8,	"		1' - 6"
" 9,	"		2' - 10"
" 10,	"		1' - 6"
" 11,	"		2' - 10"

WATER LEVEL OBSERVATIONS AT WELL "X"
 AT THE SANTA FE PUMPING PLANT ON SAN DIEGUITO
 RIVER (Cont'd)

Date	Observer	Depth to water from reference point.	Depth to water from ground surface.
Mar. 12, 1915	W. E. Maguire		1'-10"
" 13,	"		1'-10"
" 14,	"		1'-10"
" 15,	"		2'-10"
" 16,	"		3'- 1"
" 17,	"		2'- 1"
" 18,	"		1'-10"
" 19,	"		3'- 3"
" 20,	"		3'- 2"
" 21,	"		2'- 2"
" 22,	"		2'- 2"
" 23,	"		3'- 3"
" 24,	"		3'- 3"
" 25,	"		3'- 3"
" 26,	"		3'- 3"
" 27,	"		3'- 3"
" 28,	"		5'- 6"
" 29,	"		3'- 3"
" 30,	"		3'- 0"
" 31,	"		2'- 2"
Apr. 1,	"		2'- 2"
" 2,	"		3'- 3"
" 3,	"		3'- 3"

Maximum Flow

SAN LUIS REY RIVER AT WARNER DAM

1914

January 27, at 4:35 A M - 1680 c f s. Average for day 1020 c f s
 February 21 at 10:30 A M - 3300 c f s. " " " 2460 c f s

1915

January 29 at 9 P M - 2500 c f s. " " " 1520 c f s

SANTA YSABEL RIVER AT PAMO

1914

January 26 at 8 P M - 1530 c f s. Average for day 887 c f s
 February 21 at 11 A M - 1810 c f s. " " " 1290 c f s

1915

January 29 at 8 P M - 2130 c f s. " " " 910 c f s

SAN DIEGUITO AT BERNARDO

1915

January 27 at 2 P M - 2080 c f s. Average for day 1640 c f s
 February 21 at 12 M - 2800 c f s " " " 2290 c f s

Analysis of Harrow Data -

Acre ft.

Gross Runoff.	Net Runoff or Gross less Evap.	Evap.	Waste.	Safe Yield	Same as Mill Holiday
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Sutherland limited to storage of 16,400 Aft. = 124 ft. Water level	13,800	12,100	1,700	5450	6650	5.9
Sutherland + Pamo	23,000					
Pamo below Sutherland	9,200					
Waste of Sutherland + Pamo below S.	14,650					
Same less San Pascual Priorities	10,800		4,065	* 4,335	2,700	2.1

* Over + above priorities of 3850 Aft.

Copies of Well Records of the Volcan Land & Water
Company along San Luis Rey River.

Well "A"

At Dal Higgins Place in the Monserate Narrows.

Old curb and old windmill. Reference point surface of ground.

Elev. 313.06 (Top of 2" x 4" curb collar N.E. Cor. well)

Date 1912	Depth to water from B M	Elevation Water Plane
Mar. 28	7.79	305.27
Apr. 12	5.84	307.22
" 19	5.63	307.43
May 22	6.44	306.62
June 25	6.87	306.19
July 11	6.08	306.18
Sept. 20	6.92	306.14
Oct. 30	6.62	306.44
Nov. 26	6.84	306.22
Dec. 18	6.80	306.26
<u>1913</u>		
Jan. 2	6.53	306.53
" 18	8.90 (1)	306.41
Apr. 18	6.77	308.54
May 9	6.84	308.47
June 13	7.14	308.17
" 21	7.02 (2)	308.29
July 25	7.03	308.28
Dec. 9	6.73	308.58
<u>1914</u>		
Jan. 23	6.40	308.91
Mar. 1	5.46	309.85
Apr. 25	6.47	308.84
May 9	6.57	308.74
Aug. 19	7.15 (2)	308.16
Dec. 22	6.75 (2)	308.56
<u>1915</u>		
Jan. 23	6.66	308.65

(1) Old R P destroyed. New R P top of post N W cor curb.
Elevation 315.31.

(2) Measurement by Ebert, U S G S.

Well "B"

At Windmill and Tank in yard of Leahs Store near line between Sections 7 and 8, T 11 S, R 4 W, in Mission Valley.

Reference Point - Top of Cover 4 ft. above ground surface.

Elevation 51.82.

<u>Date</u>	<u>Depth to water from B M</u>	<u>Elevation Water Plane</u>
<u>1912</u>		
Mar. 28	10.33	41.49
Apr. 13	10.07	41.75
" 19	9.66	42.16
May 21	9.63	42.19
June 24	9.92	41.90
July 10	10.23	41.59
Sept. 22	11.13	40.69
Oct. 31	11.34	40.48
Nov. 26	11.28	40.54
Dec. 31	11.00	40.82
<u>1913</u>		
Jan. 2	11.00	40.82
" 18	11.10	40.72
Feb. 14	10.87 (Ebert)	40.95
" 21	10.70 (Ebert)	41.12
Mar. 8	10.50	41.32
Apr. 4	10.50 (Pumping)	41.32
May 8	10.67 "	41.15
June 12	11.03 "	40.79
July 25	11.36	40.46
Aug. 19	11.57 "	40.35
Nov. 1	11.41	40.41
Dec. 9	11.32	40.52
<u>1914</u>		
Jan. 30	11.42	40.40
Feb. 28	8.8	43.02
Mar. 9	8.93	42.89
Apr. 18	9.44 (Ebert)	42.38
May 9	10.02	41.80
Aug. 19	10.79	41.03
Nov. 25	11.40 (Pumping)	40.42
Dec. 14	10.95	40.87

Well "C"

At east end of tangent in road - Old Well and trough in pasture - South side road - near east line Sec. 18, T 11 S, R 4 W, Mission Valley

Reference Point - Top of Wood Curb - West side. Elev. 41.02

<u>Date</u>	<u>Depth to water from B M</u>	<u>Elevation Water Plane</u>
<u>1912</u>		
Mar. 28	3.21	37.82
Apr. 13	1.45	39.57
" 19	2.58	38.44
May 21	4.56 (Pumping)	36.46
June 24	4.33 "	36.69
July 10	5.62	35.40
Sept. 22	5.36	35.66
Oct. 31	5.12	35.90
Nov. 26	5.24	35.78
<u>1913</u>		
Jan. 2	4.62 (Spear RP old or	36.40
" 18	5.06 (1) (2) (lower RP)	35.96
Feb. 14	4.81 (1) (2) (Ebert)	36.42
" 21	4.63 (1) (2) "	36.60
Mar. 8	4.46	36.56
Apr. 8	4.52	36.71
May 8	5.12	36.11
June 12	5.23	36.00
July 25	5.20	35.82
Aug. 19	6.70	34.53
Nov. 1	5.40	35.83
Dec. 9	2.11	38.91
<u>1914</u>		
Jan. 30	2.10	39.13
Apr. 18	3.60 (Ebert)	37.63
Aug. 19	5.08 (Ebert)	36.15
Nov. 25	2.0 (Top of curb well Pumping)	37.08
Dec. 14	4.15	37.08

(1) R P top of casing. Elevation 41.23

(2) Not pumping

WELL "D"

At County Windmill and Trough - 3 miles east of Oceanside on Valley Road. Measured below upper surface of cover. Elev. 35.1 Mission Valley.

<u>Date</u>	<u>Depth to water from B M</u>	<u>Elevation Water Plane</u>
<u>1910</u>		
Sept. 24		23.9
<u>1912</u>		
Mar. 28	7.15	27.95
Apr. 13	6.9	28.20
" 18	6.56	28.54
" 19	6.42	28.68
May 21	6.80	28.30
June 15	7.95 (Pumping)	27.15 target
" 24	7.67	27.43
July 10	8.18	26.92
Sept. 22	8.42	26.68
Oct. 31	8.49	26.61
Nov. 26	8.20	26.90
Dec. 31	8.20	26.90
<u>1913</u>		
Jan. 2	8.20	26.90
" 18	8.11 (Pumping)	26.99
Feb. 14	7.70 "	27.40
" 21	7.64	27.46
Mar. 8	7.31	27.79
Apr. 8	7.12	27.98
May 8	7.63 (Pumping)	27.47
June 12	7.25	27.85
July 25	7.83	27.27
Aug. 19	8.40	26.70
Nov. 1	8.68	26.42
Dec. 9	8.25	26.85
<u>1914</u>		
Jan. 30	7.62	27.48
Mar. 9	5.66	29.44
Apr. 18	6.62 (Ebert)	28.48
May 9	7.07	28.03
Aug. 19	8.45	26.65
Nov. 25	8.60 (Pumping)	26.50
Dec. 14	8.60	26.50

(Note: Also a 1911 reading Sept. 11, 1911 - Elev. 24.0)

Well "E"

At 1000 ft. east of long Mission Road Tangent Angle in Mission Valley - measured from top of wood curb 18 in. above ground. South side of road - 1/4 mile west of County Trough Well #2. Elevation 28.29.

<u>Date</u>	<u>Depth to water from B M</u>	<u>Elevation Water Plane</u>
<u>1912</u>		
Mar. 28	4.86 (below ref.)	
Apr. 13	3.70	24.59
" 18	4.24	24.05
May 21	4.94	23.35
June 15	6.50 #	21.79
" 26	5.75	22.54
July 10	5.88	22.41
Sept. 22	6.88	21.41
Oct. 31	6.71	21.58
Nov. 26	6.53	21.76
Dec. 5	6.36	21.93
<u>1913</u>		
Jan. 2	6.00 (Spear)	22.29
" 18	6.10	22.19
Feb. 14	5.70	22.59
" 21	5.65	22.64
Mar. 8	5.21	23.08
" 12	5.19	23.10
Apr. 8	5.09	23.20
May 8	5.20	23.09
June 12	5.28	23.01
July 25	6.10	22.19
Aug. 19	6.60	21.69
Nov. 1	6.90	21.39
Dec. 9	6.23	22.06
<u>1914</u>		
Jan. 30	3.40	24.89
Mar. 9	3.85	24.44
Apr. 18	4.65 (Ebert)	23.64
May 9	5.00	23.29
Aug. 19	7.10 (Ebert)	21.19
Dec. 14	6.20	22.09

= Well is pumped dry about three times daily. Taking nearly 3 1/2 hours to fill up after pumping.

Well "F"

At Dave Jones - NW¹ NE¹ Sec 9, T 11 S, R 4 W in Mission Valley
Open Curb well and Windmill. Reference Point - Top curb SE cor.
Elevation 70.48.

<u>Date</u>	<u>Depth to water from B M</u>	<u>Elevation Water Plane</u>
<u>1912</u>		
Mar. 28	9.08	61.40
Apr. 15	8.25	62.23
" 19	7.92 #	62.56
May 21	7.33	63.15
June 24	6.88	63.60
July 10	13.52	56.95
Oct. 31	11.72	58.76
Nov. 25	11.30	59.18
<u>1913</u>		
Jan. 1	11.59	58.89
Feb. 21	11.60	58.88
Mar. 21	9.60	60.88
Apr. 8	9.30 (Pumping)	61.18
May 8	10.46	60.02
July 25	10.67	59.81
Dec. 9	Found well boarded up & farmer objected to opening it.	

Well #7 - Cases "F"
Mr Jones says after pumping out this well it requires
several hours to fill up ~~the~~ to normal. The bottom is not
in gravel and the water usually stands about 5 ft. below curb.

Well "F"

At Warner's Ranch. Elevation of R P 3095.

<u>Date</u>	<u>Depth to water from B M</u>	<u>Elevation Water Plane</u>
<u>1913</u>		
Jan. 2	4.0	3091.0
" 14	3.7	3091.3
" 29	3.3	3091.7
Feb. 10	3.1	3091.9
Mar. 3	2.5	3092.5
" 18	3.1	3091.9
June 3	5.5	3089.5
" 17	6.2	3088.8
July 1	6.5	3088.5
" 18	6.8	3088.2
Aug. 8	6.8	3088.2
Sept. 5	7.8	3087.2
" 23	7.9	3087.1
<u>1912</u>		
Dec. 3	4.6	3090.4
" 17	4.2	3090.8
<u>1914</u>		
Jan. 9	6.3	
Feb. 3	4.9	
Mar. 2	4.4	
" 18	5.1	
Apr. 15	5.5	
May 8	5.8	
June 5	7.0	
July 26	7.5	
" 17	7.6 (Dry)	
Aug. 13	(Dry)	
Sept. 7	"	
" 16	"	
Oct. 16	"	

Well "G"

At Pool 1/2 mile NE of Mission in Mission Valley on North side of road, near the NW cor. of the SW $\frac{1}{4}$ NW $\frac{1}{4}$ of Sec 9, T 11S, R 4W. Reference Point - Notch in 2nd pole east of bridge at point where top fence wire crosses. Elevation 63.28.

<u>Date</u>	<u>Depth to water from B M</u>	<u>Elevation Water Plane</u>
<u>1912</u>		
Apr. 15	2.46	60.77
" 19	2.52	60.71
May 3	3.46	60.29
" 21	3.30	59.93
June 24	4.22	59.01
July 10	4.57	58.66
Oct. 31	Dry	
Nov. 26	Dry	
<u>1913</u>		
Feb. 21	Dry	
Mar. 21	3.62	59.61
Apr. 8	3.50	59.73
May 8	4.35	58.88
Dec. 9	Abandoned	

Well "H"

Near the NW Cor. SE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec 5, T 11 S, R 4 W, on north side River 1/4 mile east of school house and South side E & W road - Windmill with curb and tank. Reference point - Top of curb NW Cor. under cover. Elevation - 64.55.

<u>Date</u>	<u>Depth to water from B M</u>	<u>Elevation Water plane</u>
<u>1912</u>		
Apr. 15	7.58	56.97
" 19	7.49	57.06
May 21	5.56 #	58.99
June 24	7.19	57.36
July 10	7.64	56.91
Sept. 21	9.20	55.35
Oct. 31	9.80	54.75
Nov. 26	10.19	54.36
Dec. 31	10.60	53.95
<u>1913</u>		
Jan. 2	10.60	53.95
" 18	10.86 (Not pumping)	53.69
Feb. 14	10.44 " "	54.11
Mar. 8	9.08	55.47
" 21	8.36	56.19
Apr. 8	4.25 °	60.30
May 8	7.42	57.13
June 12	8.35	56.25
July 25	9.29	55.26
Aug. 19	9.90	54.65
Oct. 31	10.70	53.85
Dec. 9	11.32	53.23
<u>1914</u>		
Jan. 30	10.99	53.56
Mar. 9	7.30	54.25
Apr. 18	6.70 (Ebert)	57.85
May 9	3.56	60.99
Aug. 19	8.82 (Ebert)	55.73
Nov. 25	10.20	54.35
Dec. 14	10.40	54.15

Ground flooded by ditch water recently

° Affected by Libby Ditch

Well "I"

At SW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec 4, T 11 S, R 4 W in yard S side road. Open curb well - No wind mill or pump. 1/2 mile east of school house. 500 ft. east of rhubarb farm. pumping plant. Reference point - Top of curb under cover. Elevation 68.94.

<u>Date</u>	<u>Depth to water from B M</u>	<u>Elevation Water plane</u>
<u>1912</u>		
Apr. 15	8.14	60.80
" 19	7.92	61.02
May 21	6.08 #	62.86
June 24	8.83	60.11
July 10	9.37	59.57
Sept. 21	11.28	57.66
Oct. 31	12.00	56.94
Nov. 26	12.40	56.54
<u>1913</u>		
Jan. 2	12.79	56.15
" 18	13.00 Libby Ditch near empty	55.94
Feb. 14	12.04 " "	56.90
Mar. 8	9.54	59.40
Apr. 8	6.00 Libby ditch full	62.94
" 21	9.00	59.94
May 8	9.09	59.85
June 12	10.17	58.77
July 25	10.42	58.52
Aug. 19	11.98	56.96
Oct. 31	13.10	55.84
Dec. 9	13.50	55.44
<u>1914</u>		
Jan. 30	11.75	57.19
May 9	7.76	61.18
Apr. 18	6.37 (Ebert)	62.57
May 9	6.04	62.90
Aug. 19	10.38	58.56
Nov. 25	12.20	56.74
Dec. 14	12.40	56.54

Ditch 100 ft. N full of water.

Well "J"

Mr. McClung near head of Libby Ditch in NE $\frac{1}{4}$ NE $\frac{1}{4}$ Sec 4, T 11 S, R 4 W. Windmill and open curb well west side Road. Reference point - NE cor. curb. Elevation 79.29

<u>Date</u>	<u>Depth to water from B M</u>	<u>Elevation Water Plane</u>
<u>1912</u>		
Apr. 15	8.45	70.84
" 19	8.33	70.96
May 3	8.52	70.77
June 24	9.21	70.08
July 10	9.50	69.79
Sept. 21	11.80	67.49
Oct. 31	12.53	66.76
Nov. 26	12.98	66.31
<u>1913</u>		
Jan. 2	14.64 Pumping	64.65
" 18	13.70 Not pumping	65.59
Feb. 14	9.60 " "	69.69
Mar. 8	8.75	70.54
Apr. 8	9.20 Pumping	70.09
May 8	9.08	70.21
June 12	13.18 Pumping	66.11
July 25	11.40	67.89
Aug. 19	11.27	68.02
Oct. 31	13.73	65.56
Dec. 9	14.03	65.26
<u>1914</u>		
Jan. 30	12.39	66.90
Mar. 9	8.56	70.73
Apr. 18	8.68 (Ebert)	70.61
May 9	8.57	70.72
Aug. 19	10.72	68.57
Nov. 25	12.60	66.69
Dec. 14	12.90	66.39

Well "K"

At Mr. McClung first house west of school, SE¹ SE¹ Sec. 35,
T 10 S, R 4 W, open curb well - Reference point Top of 2" x 4"
cor. inside curb 2 ft. above ground.
Elevation - 113.63

<u>Date</u>	<u>Depth to water from B M</u>	<u>Elevation Water plane</u>
<u>1912</u>		
Apr. 15.	11.60	102.03
" 19	11.62	102.01
June 24	13.15	100.48
July 10	13.49	100.14
Sept. 21	14.96	98.67
Oct. 30	15.51	98.12
Nov. 26	15.86	97.77
<u>1913</u>		
Jan. 2	16.02	97.61
" 18	13.03	100.60
Feb. 14	12.60	101.03
Mar. 8	12.44	101.19
Apr. 8	12.56	101.07
May 8	13.52	100.11
June 12	13.78	99.85
July 25	14.57	99.06
Aug. 19	15.05	98.58
Oct. 31	15.85	97.78
Dec. 9	16.28	97.35
<u>1914</u>		
Jan. 23	15.30	98.33
Mar. 9	13.22	100.41
Apr. 18	12.90 (Ebert)	100.73
May 9	12.10	101.53
Aug. 19	14.60 (Ebert)	99.03
Nov. 25	16.10	97.53
Dec. 14	15.85	97.78

Well "L"

At Mission bridge - NE¹ NW¹ Sec 8, T 11 S, R 4 W, in Mission
Valley. Reference point - Top of S E Cylinder at water s side.
Elevation - 64.58.

<u>Date</u>	<u>Depth to water from B M</u>	<u>Elevation Water plane</u>
<u>1912</u>		
Mar. 28	9th Rivet plus 1.01	55.11
Apr. 15	9.20	55.38
" 19	9.35	55.23
May 21	10.19	54.39
June 24	10.49 #	54.09
July 10	10.70	53.88
Sept. 22	11.75	52.83
Oct. 31	12.22	52.36
Dec. 18	12.43 #	52.15
<u>1913</u>		
Jan. 18	10.46	54.12
Feb. 21	10.74 (e)	53.84
Mar. 8	10.06	54.52
" 13	9.85 °	54.73
Apr. 8	10.31 (d)	54.27
May 8	10.44	54.14
June 12	11.16	53.42
" 21	11.42 (Ebert)	53.16
July 26	12.07	52.51
Aug. 19	12.34	52.24
Dec. 9	13.28	51.30
<u>1914</u>		
Jan. 30.	10.10 (f)	54.48
Mar. 9	9.30	55.28
Apr. 18	10.13 (Ebert) 35 ft. in River est.	54.45
May 9	9.38	55.20
Aug. 19	11.45 (Ebert)	53.13
Nov. 25	12.25	52.33
Dec. 14	12.27	52.31

No water flowing
° Metered flow disch 41.2 sec.ft.
(d) Estimated 1 sec. ft. in River
(e) " 2 " " " "
(f) " 150 c.f.s. " " . Ebert.

Well "M"

At Monserate Rancho - Near Pump House - 1½" Pipe 12' long
driven within 2 ft. of Clay bed rock.
Elevation top of pipe 268.72

<u>Date</u>	<u>Depth to water from B M</u>	<u>Elevation Water Plane</u>
<u>1912</u>		
Apr. 9		263.89
" 10	4.81	263.91
" 12	4.08	264.64
" 19	4.29	264.43
May 22	4.96	263.76
June 25	5.17	263.55
July 11	5.45	263.27
Sept. 20	7.38	261.34
Oct. 31	4.85	263.87
Nov. 26	5.13	263.59
Dec. 18	5.25	263.47
<u>1913</u>		
Jan. 2	4.87	263.85
" 19	4.90 #	263.82
Feb. 20	4.90	263.82
Apr. 18	4.98	263.74
May 8	5.17	263.55
June 13	7.61	261.11
Dec. 9	4.94	263.78
<u>1914</u>		
Jan. 23	4.90 °	263.82
Mar. 1	4.90 -	263.82
Apr. 25	5.36	263.36
May 9	5.47	263.25
Aug. 19	7.22 (Ebert)	261.50
Dec. 22	5.50 "	263.22
<u>1915</u>		
Jan. 23	5.46	263.26

Estimated 25 sec. ft. in River.

° " 10 " " " " (Ebert)

Well "N"

At City of Oceanside Pumping Plant in Pool 200 ft. NE of plant.

<u>Date</u>	<u>Depth to water from B M</u>	<u>Elevation Water plane</u>
<u>1912</u>		
May 3	9.00	
June 4	8.31	

At Monserate Pumping Plant

Well "N" ?

<u>1912</u>		
June 15	4.46 #	

W L Below top of 12" x 12" timber of pump frame.

Well "O"

At Oceanside Pumping Plant. Established Dec. 9, 1913 in old well lined with 2" plank - 400' NW of pumping plant. 20' L. of road to gauge. Reference point - 4 nails driven in top of 2" plank. Elevation - 14.36

<u>Date</u>	<u>Depth to water from B M</u>	<u>Elevation Water plane</u>
<u>1913</u>		
Dec. 9	1.1	13.26
<u>1914</u>		
Jan. 30	+1.10 (Ebert)	15.46
Apr. 18	+ .50	14.86
May 25	- .90	13.46
December	- .60	13.76

Table No. 9

MASS TABULATION FOR WARNER'S RESERVOIR

I R R I G A T I O N U S E

Reservoir capacity = 200,000 acre feet.
 Draft ----- = 28,000 acre feet per annum at the rate of 9,300 acre feet from October to March inclusive, and 18,700 acre feet from April to September inclusive.
 Initial draft 10% of total, increasing uniformly and reaching 100% in 10 years.

. O C T O B E R 1st to M A R C H 31							
Season	Reservoir Oct. 1 Ac.Ft.	Runoff Ad.Ft.	Draft Ac.Ft.	Mean Area Water Surface Acres	Evaporation Less 90% of Rainfall Ft.	Total Adjusted Withdrawals Ac.Ft.	
1888-89	50,000	19,6000	930	2,400	+ .48 + 1,152	+ 222	
89-90	72,222	32,200	1,860	3,150	+ .86 + 2,702	+ 842	
90-91	109,994	36,050	2,790	4,170	+ .69 + 2,880	+ 30	
91-92	148,224	15,050	3,720	5,200	+ .07 + 364	- 5,356	
92-93	149,738	22,220	4,650	5,180	+ .18 + 933	- 5,717	
93-94	158,801	11,030	5,580	5,200	- .24 - 1,250	- 6,830	
94-95	145,891	69,800	6,510	5,500	+ .51 + 2,800	- 3,710	
95-96	200,000	5,430	7,440	6,050	- .38 - 2,500	- 9,740	
96-97	169,690	17,150	8,370	5,550	+ .28 + 1,550	- 6,820	
97-98	160,630	2,930	9,300	5,100	- .38 - 1,940	- 11,240	
98-99	123,870	2,230	9,300	4,050	- .47 - 1,900	- 11,200	
99-00	89,360	1,960	9,300	3,050	- .21 - 640	- 9,940	
1900-01	58,370	9,700	9,300	2,380	+ .06 + 143	- 9,157	
01-02	39,853	6,820	9,300	1,900	- .18 - 342	- 9,642	
02-03	17,171	10,930	9,300	1,360	+ .27 + 367	- 8,933	
03-04	12,408	4,400	4,650	1,020	- .49 - 500	- 5,150	
04-05	1,958	19,570	9,300	750	+ .75 + 548	- 8,752	
05-06	1,586	47,890	9,300	1,480	+ .80 + 1,185	- 8,115	
06-07	40,471	36,860	9,300	2,250	+ .35 + 778	- 8,522	
07-08	61,929	12,760	9,300	2,500	- .07 - 175	- 9,475	
08-09	48,184	23,440	9,300	2,300	+ .30 + 690	- 8,610	
09-10	50,764	21,890	9,300	2,350	+ .06 + 141	- 9,159	
10-11	50,365	15,160	9,300	2,200	+ .15 + 330	- 8,970	
11-12	41,025	8,770	9,300	1,950	- .21 - 410	- 9,710	
12-13	21,555	4,140	9,300	1,400	- .15 - 210	- 9,510	
13-14	4,985	15,840	4,650	980	+ .32 + 314	- 4,336	
14-15	2,729	42,310	9,300	1,450	+ .71 + 1,030	- 8,270	
15-16	33,669	174,542	9,300	4,050	+ .86 + 3,483	- 5,817	

C H 51 to September . 30th														
Net Additions or Deductions from Reservoir Ac. Ft.	Waste Ac. Ft.	Reservoir Apr. 1 Ac. Ft.	Runoff Ac. Ft.	Draft	Released for Escondido Ac. Ft.	Mean Area Water Surface Acres	Evaporation Less 90% of Rainfall Ft.	Conserved Evaporat- ion Ac. Ft.	Total Adjusted Withdrawals Ac. Ft.	Net Additions or Deductions from Reservoir Ac. Ft.	Waste Ac. Ft.	Reservoir Oct. 1, Ac. Ft.	Season	
+ 19,822	0	:: 69,822	8,600	1,870	0	2,650	-2.28	-6150	+ 1,820	- 6,200	+ 2,400	72,222	1888-89	
+ 33,040	0	:: 105,264	14,000	3,740	0	3,800	-2.18	-8280	+ 2,750	- 9,270	+ 4,730	109,994	89-90	
+ 36,140	0	:: 146,134	15,650	5,610	0	4,800	-2.23	-10700	+ 2,750	- 13,560	+ 2,090	148,224	90-91	
+ 11,694	0	:: 159,918	6,650	7,480	0	5,050	-2.40	-12100	+ 2,750	- 16,830	- 10,180	149,738	91-92	
+ 18,503	0	:: 168,241	9,730	9,350	0	5,300	-2.37	-12570	+ 2,750	- 19,170	- 9,440	158,301	92-93	
+ 4,200	0	:: 163,001	4,920	11,220	960	5,050	-2.49	-12600	+ 2,750	- 22,030	- 17,110	145,391	93-94	
+ 66,090	11,981	:: 200,000	30,120	13,090	0	6,100	-2.28	-13900	+ 2,750	- 24,240	+ 5,880	200,000	94-95	
- 4,310	0	:: 195,690	2,510	14,960	1,900	5,700	-2.53	-14400	+ 2,750	- 28,510	- 26,000	169,690	95-96	
+ 10,330	0	:: 180,020	7,550	16,830	460	5,300	-2.34	-12400	+ 2,750	- 26,940	- 19,390	160,630	96-97	
- 8,310	0	:: 152,320	1,450	18,700	2,450	4,550	-2.53	-11500	+ 2,750	- 29,900	- 28,450	123,370	97-98	
- 8,970	0	:: 114,900	1,160	18,700	1,350	3,550	-2.56	-9100	+ 2,450	- 26,700	- 25,540	89,360	98-99	
- 7,980	0	:: 81,380	1,040	18,700	720	2,600	-2.48	-6450	+ 1,820	- 24,050	- 23,010	58,370	99-00	
+ 543	0	:: 58,913	4,360	18,700	1,050	2,150	-2.41	-5180	+ 1,510	- 23,420	- 19,060	39,853	1900-01	
- 2,822	0	:: 37,031	3,130	18,700	1,500	1,600	-2.47	-3950	+ 1,160	- 22,990	- 19,860	17,171	01-02	
+ 1,997	0	:: 19,168	4,890	9,350	400	1,200	-2.35	-2820	+ 920	- 11,650	- 6,750	12,408	02-03	
- 750	0	:: 11,658	2,080	9,350	1,500	600	-2.56	-1530	+ 600	- 11,780	- 9,700	1,958	03-04	
+ 10,818	0	:: 12,776	8,580	18,700	0	800	-2.22	-1770	+ 700	- 19,770	- 11,190	1,586	04-05	
+ 39,775		:: 41,361	20,720	18,700	0	1,950	-2.20	-4290	+ 1,380	- 21,610	- 890	40,471	05-06	
+ 28,338		:: 68,809	16,000	18,700	0	2,550	-2.32	-5920	+ 1,740	- 22,880	- 6,880	61,929	06-07	
+ 3,285		:: 65,214	5,670	18,700	0	2,300	-2.44	-5620	+ 1,620	- 22,700	- 17,030	48,184	07-08	
+ 14,830		:: 63,014	10,230	18,700	0	2,300	-2.34	-5380	+ 1,600	- 22,480	- 12,250	50,764	08-09	
+ 12,731		:: 63,495	9,620	18,700	0	2,350	-2.41	-5670	+ 1,620	- 22,750	- 13,130	50,365	09-10	
+ 6,190		:: 56,555	6,700	18,700	0	2,120	-2.37	-5030	+ 1,500	- 22,230	- 15,530	41,025	10-11	
- 940		:: 40,085	3,960	18,700	830	1,800	-2.32	-4180	+ 1,220	- 22,490	- 18,530	21,555	11-12	
- 5,370		:: 16,185	1,770	9,350	2,030	950	-2.50	-2380	+ 790	- 12,970	- 11,200	4,985	12-13	
+ 11,504		:: 16,489	6,790	18,700	460	850	-2.51	-2130	+ 740	- 20,550	- 13,760	2,729	13-14	
+ 34,040		:: 36,769	18,130	18,700	0	1,800	-2.12	-3820	+ 1,290	- 21,230	- 3,100	33,669	14-15	
+ 168,725	2,394	:: 200,000	7,526	18,700	0	6,000	-2.18	-13080	+ 2,750	- 29,030	- 21,504	178,496	15-16	

Table No. 8

MASS TABULATION FOR WARNER'S RESERVOIR

DOMESTIC USE

Reservoir Capacity = 200,000 acre feet.

Draft ----- = 24,750 acre feet per annum at the rate of 9,900 acre feet from October to March inclusive, and 14,850 acre feet from April to September inclusive.

Initial draft 10% of total, increasing uniformly and reaching 100% in 10 years.

. O C T O B E R 1st to M A R C H 31st A P R I L 1st 1 to																	
Season	Reservoir		Draft Ac.Ft.	Mean Area Water Surface Acres	Evaporation less 90% of rainfall		Total Adjusted Withdrawals Ac.Ft.	Net Additions of Deductions from Reservoir		Reservoir : Apr. 1		Released for Escondido Ac.Ft.	Mean Area Water Surface Acres	Evaporation loss 90% of Rainfall Feet	Co Eva Ac		
	Oct. 1 Ac. Ft.	Runoff Ac.Ft.			Feet	Ac.Ft.		Ac. Ft.	Ac.Ft.	Waste Ac.Ft.	Runoff Ac.Ft.					Draft Ac.Ft.	
1888-89	50,000	19,600	990	2,400	+ .48	+ 1,150	+ 151	+ 19,760	0	69,769	8,600	1,485	0	2,700	- 2.28	- 6,150	+
89-90	71,555	32,200	1,980	3,100	+ .86	+ 2,670	+ 690	+ 32,890		104,445	14,000	2,970	0	3,700	- 2.18	- 8,080	+
90-91	110,055	36,050	2,970	4,350	+ .69	+ 3,000	+ 50	+ 36,080		146,135	15,650	4,555	0	4,850	- 2.23	- 10,800	+
91-92	149,180	15,050	3,960	5,050	+ .07	+ 354	- 3606	+ 11,444		160,624	6,650	5,940	0	5,100	- 2.40	- 12,200	+
92-93	151,884	22,220	4,950	5,200	+ .18	+ 935	- 4015	+ 18,205		170,089	9,730	7,425	0	5,350	- 2.37	- 12,700	+
93-94	162,444	11,030	5,940	5,300	- .24	- 1,270	- 7210	+ 3,820		166,264	4,920	8,910	960	5,200	- 2.49	- 12,950	+
94-95	151,114	69,800	6,930	5,550	+ .51	+ 2,830	- 4100	+ 65,700	16,814	200,000	30,120	10,395	0	6,100	- 2.28	- 13,900	+
95-96	200,000	5,430	7,920	6,050	- .38	- 2,300	- 10220	- 4,790	0	195,210	2,510	11,880	1,900	5,750	- 2.53	- 14,550	+
96-97	172,140	17,150	8,910	5,550	+ .28	+ 1,550	- 88910	+ 9,790		181,930	7,550	13,365	460	5,500	- 2.34	- 12,900	+
97-98	165,505	2,930	9,900	5,250	- .38	- 1,990	- 11890	- 8,960		156,545	1,450	14,850	2,450	4,800	- 2.53	- 12,150	+
98-99	131,295	2,230	9,900	4,300	- .47	- 2,020	- 11920	- 9,690		121,605	1,160	14,850	1,350	3,850	- 2.56	- 9,870	+
99-00	99,445	11,960	9,900	3,400	- .21	- 715	- 10615	- 8,655		90,790	1,040	14,850	720	2,900	- 2.48	- 7,200	+
1900-01	71,110	9,700	9,900	2,700	+ .06	+ 162	- 9900	- 38		71,072	4,360	14,850	1,050	2,400	- 2.41	- 5,780	+
01-02	55,412	6,820	9,900	2,250	- .18	- 405	- 10305	- 3,485		51,927	3,130	14,850	1,500	2,000	- 2.47	- 4,950	+
02-03	35,187	10,930	9,900	1,800	+ .27	+ 486	- 9900	+ 1,516		36,703	4,890	14,850	400	1,700	- 2.35	- 4,000	+
03-04	23,553	4,400	9,900	1,450	- .49	- 711	- 10611	- 6,211		17,342	2,080	14,850	1,500	1,050	- 2.56	- 2,690	+
04-05	1,242	19,570	9,900	680	+ .73	+ 496	- 9900	+ 10,166		11,408	8,580	14,850	0	710	- 2.22	- 1,780	+
05-06	4,058	47,890	9,900	1,550	+ .80	+ 1,240	- 9900	+ 39,230		43,283	20,720	14,850	0	2,050	- 2.20	- 4,520	+
06-07	46,078	36,860	9,900	2,400	+ .35	+ 840	- 9900	+ 27,800		73,878	16,000	14,850	0	2,700	- 2.32	- 6,260	+
07-08	70,628	12,760	9,900	2,700	- .07	- 189	- 10089	+ 2,671		73,299	5,670	14,850	0	2,550	- 2.44	- 6,230	+
08-09	59,639	23,400	9,900	2,580	+ .30	+ 774	- 9900	+ 14,314		75,953	10,230	14,850	0	2,650	- 2.34	- 6,200	+
09-10	64,943	21,980	9,900	2,700	+ .06	+ 162	- 9900	+ 12,242		77,185	9,620	14,850	0	2,750	- 2.41	- 6,650	+
1910-11	67,185	15,160	9,900	2,700	+ .15	+ 405	- 9900	+ 5,665		72,850	6,700	14,850	0	2,600	- 2.37	- 6,170	+
11-12	60,310	8,770	9,900	2,350	- .21	- 494	- 10394	- 1,624		58,686	3,960	14,850	830	2,200	- 2.32	- 5,100	+
12-13	43,396	4,140	9,900	1,950	- .15	- 292	- 10192	- 6,052		37,344	1,770	14,850	2,030	1,650	- 2.50	- 4,150	+
13-14	19,314	15,840	9,900	1,500	+ .32	+ 480	- 9900	+ 6,420		25,734	6,790	14,850	460	1,450	- 2.51	- 3,640	+
14-15	14,574	42,310	9,900	1,750	+ .71	+ 560	- 9900	+ 32,970		47,544	18,130	14,850	0	2,100	- 2.12	- 4,450	+
15-16	47,854	174,542	9,900	4,250	+ .86	+ 3,655	- 9900	+ 168,297	16,151	200,000	7,526	14,850	0	5,800	- 2.18	- 12,644	+

. S E P T E M B E R 30th						
Conserved Evapora- tion Acres Feet	Total Adjusted withdrawals Ac.Ft.	Net Additions or Deductions from Reservoir Ac. Ft.	Waste Ac.Ft.	Reservoir Oct. 1 Ac.Ft.	Season	
50	+ 1,830	- 5,805	+ 1,795	0	71,555	1888-89
80	+ 2,660	- 8,390	+ 5,610		110,055	89-90
00	+ 2,750	- 12,605	+ 3,045		149,180	90-91
00	+ 2,750	- 15,390	- 8,740		151,884	91-92
00	+ 2,750	- 17,375	- 7,645		162,444	92-93
50	+ 2,750	- 20,070	- 15,150		151,114	93-94
00	+ 2,750	- 21,545	+ 8,575	8,575	200,000	94-95
50	+ 2,750	- 25,580	- 23,070		172,140	95-96
00	+ 2,750	- 23,975	- 16,425		165,505	96-97
50	+ 2,750	- 26,700	- 25,250		151,295	97-98
70	+ 2,750	- 23,320	- 22,160		99,445	98-99
00	+ 2,050	- 20,720	- 19,680		771,110	99-00
80	+ 1,660	- 20,020	- 15,660		55,412	1900-01
50	+ 1,430	- 19,870	- 16,740		35,187	01-02
00	+ 1,210	- 18,040	- 13,150		23,553	02-03
90	+ 860	- 18,180	- 16,100		1,242	03-04
80	+ 700	- 15,930	- 7,350		4,058	04-05
20	+ 1,440	- 17,930	+ 2,790		46,078	05-06
50	+ 1,860	- 19,250	- 3,250		70,628	06-07
30	+ 1,750	- 19,330	- 13,660		59,639	07-08
00	+ 1,810	- 19,240	- 9,010		64,943	08-09
50	+ 1,880	- 19,620	- 10,000		67,185	09-10
70	+ 1,780	- 19,240	- 12,540		60,310	10-11
00	+ 1,530	- 19,250	- 15,290		43,396	11-12
50	+ 1,230	- 19,800	- 18,030		19,314	12-13
40	+ 1,000	- 17,950	- 11,160		14,574	13-14
50	+ 1,480	- 17,820	+ 310		47,854	14-15
44	+ 2,750	- 24,744	- 17,218	0	182,782	15-16

Ed Fletcher Papers

1870-1955

MSS.81

Box: 45 Folder: 17

**Business Records - Water Companies - Volcan Land
and Water Company - Miscellaneous water information**



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