

STREAM MEASUREMENTS

ANNUAL SUMMARIES

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AT-7K

10-30-12

RUN-OFF

Cottonwood Creek, plus Flume  
(Tia Juana River), Gaugings  
near Jamul at Barrett Dam.

Measurements by U.S.  
Geological Survey

(Elevation 1500 feet)  
(Area 270 sq. mi. )  
(including Pine )  
(Valley Creek) )

Run-off in acre-feet.

	<u>05-06</u>	<u>06-07</u>	<u>07-08</u>	<u>08-09</u>	<u>09-10</u>	<u>10-11</u>	<u>11-12</u>
July		738	258	9	52	1	35b
Aug		369	74	5	181	0	28
Sept		77	60	13	125	0	28
Oct		184	461	146	95	15	38
Nov		1210	530	256	540	165	45
Dec		4970	603	382	2080	137	70
Jan	953	10800	1550	7010 <sup>x</sup>	5020	495a	
Feb	1340	3720	3360	6280	2230	2570	
Mar	36500	11700	2090	8980	2428	1500	
Apr	10500	4600	928	5210	1680	533	
May	3380	2730	585	1680	3590	111	
Jun	1820	1380	208	534	30	37	
Total		42478	10707	30505	18051	5562 plus 8000 flume	
						13562	

<sup>x</sup> Gauge is below flume. Values from Jan '09 on are sum of discharge of flume and river. Capacity of flume 60 sec. ft.

<sup>a</sup> Jan to June incl. 1911 the flume total is 8000 ac. ft. but the monthly run-off is not obtainable.

<sup>b</sup> July to Dec. incl. 1911 the flume is dry.

RUN-OFF.

Cottonwood Creek and Flume,  
Near Jamul.

Run-off in Acre Ft.

	1910 So. Cal. Mt. W. Co.		Total
	Creek	Flume	
January	2040	2980	5020
February	260	1970	2230
March	588	1840	2428
April	520	1150	1670
May	58	301	359
June	20	10	30
July	1	0	1
August	0	0	0
September	0	0	0
October	15	0	15
November	165	0	165
December	133	2	135
Total	3800	3255	12053

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*Estimated by  
W.S. Post*

*July 1913-14 2.4  
no flow  
Dec 218.  
Jan 1914*

TABLE OF WATER SUPPLY

Diverted <sup>to</sup> by Delzura Conduit of S. Cal. Mountain Water Co.  
from Cottonwood Creek near Jamul.

In Acre feet.

Compiled from U. S. Geological Survey, *with  
interpellations as noted below by W.S. Post.*

Month	1906-07	1907-08	1908-09	1909-10	1910-11	1911-12
July	*700	*250	*0	9	0	**0
Aug	*300	* 0	*0	0	0	0
Sept	* 0	* 0	*0	0	0	0
Oct	*100	*460	*140	0	0	0
Nov	*1200	*530	*250	0	0	0
Dec	*3000	*600	*380	1088	4 2	0
Jan	*3000	*1550	a627	2980	297	566 0
Feb	*3000	*3000	2296	1970	1725	192 0
Mar	*3000	*2090	2792	1840	105 8000	126 **2500
Apr	*3000	* 900	3152	1150	56	18 **3000
May	*2700	580	1514	301	no flow	88 **2000
June	*1300	210	436	10		6 **500
Total	21300	10170	11617	9348	4024 <del>8000</del>	4014 <del>8000</del>
Mean sec. feet.	29.4	14.0	16.0	12.9	11.0	11.0
Miners inch, con tinuous	1470	700	800	645	550	550

*6000  
1912-13  
no flow  
1100  
1490  
2270  
1657  
661  
128  
7306*

a Delzura Conduit built and record begins in Jan. 1909;  
\* preceding adapted from U.S. Records, limiting the diversion in  
one month to 3000 acre feet, the capacity of the conduit.

\*\* Estimated for 1911-12.

*Water released from Moreno Res. 2100 ac. ft.*

RUN-OFF

Pine Valley Creek.  
Gaugings near Jamul.

Measurements by U.S. Geological Survey.  
Elevation 1600 feet.  
Area, (Appx. 135 sq.miles)

Run-off in acre feet.

	<u>1905-06</u>	<u>1906-07</u>	<u>1907-08</u>	<u>1908-09</u>	<u>discontinued.</u>
July		160	125		
Aug.		246	37		
Sept.		36	18		
Oct.		49	191		
Nov.		155	179		
Dec.		1240	208		
Jan	640	3030			
Feb.	1080	1930			
Mar.	9590	3840			
Apr.	5330	2680			
May	2420	1220			
June	583	595			
Total		15181			

Note: From June 0<sup>7</sup> to Jan 0<sup>8</sup>, discharges estimated by interpolation by comparison with discharges of Cottonwood Creek (U.S.G.S.)

RUN-OFF

Sweetwater River: Measurements by U.S. Geological Survey.  
Gauging 1 1/2 miles below Descanso. Elev. (3,300 feet)  
Area ( 40 ) Sq. miles.

RUN-OFF IN ACRE FEET:

	<u>1905-06</u>	<u>06-07</u>	<u>07-08</u>	<u>08-09</u>	<u>09-10</u>	<u>10-11</u>	<u>11-12</u>
July		112	307	25	238	39	35
Aug	no	108	178	31	300	15	28
Sept	report	90	155	107	236	12	28
Oct		68	277	61	230	59	38
Nov		177	155	60	362	90	45
Dec		121	234	92	787	64	70
Jan	534	3490	301	1480	4000	495	58
Feb	1240	1590	794	3420	772	2570	45
Mar	11100	4000	627	2300	793	1500	2120
Apr	2890	2370	321	2090	690	533	1930
May	1330	1210	221	670	287	111	719
June	418	583	60	396	83	37	214
Total		13919	3630	10732	8780	5525	5330

National City, Calif.

Dec. 21, 1912.

Mr. W. S. Post,

San Diego, Cal.

Dear Post:-

The total run-off of Sweetwater River at Sweetwater Dam as tabulated by Mr. John F. Covert, Engineer for the Company is as follows:-

1887-8	7,043	acre feet)	
8-9	25,253	"	)
9-0	20,532	"	)
1890-1	21,565	"	)
1-2	6,198	"	)
2-3	16,260	"	)
3-4	1,338	"	)
4-5	73,412	"	)
5-6	1,321	"	)
6-7	6,892	"	)
7-8	4	"	)
8-9	245	"	)
9-0	0	"	)
1900-1	628	"	)
1-2	0	"	)
2-3	0	"	)
3-4	0	"	)
4-5	13,760	"	)
5-6	35,000	"	)
6-7	30,000	"	)
7-8	5,787	"	)
8-9	16,126	"	)
9-10	8,775	"	)
1910-11	5,363	"	)
11-12	4,463	"	)

From Schuyler's  
"Reservoirs" 1910  
Edition, page 233.

) Estimated by Covert  
) from dam keepers  
notes.  
) Estimated by Covert  
) from personal know-  
ledge and observation.

My estimate for last five years is slightly different, but balances up in the end.

Sincerely,

(Sgd) Charles H. Lee.

COPY

RUN-OFF.

Seasonal Total.

Sweetwater River: Measurements by ( )  
Gauging at Sweetwater Dam. Area 186 sq.miles..

Season.	Acre-feet.
1887-88	7048
88-89	25253
89-90	20532
90-91	21565
91-92	6198
92-93	16260
93-94	1538
94-95	73412
95-96	1321
96-97	6898
97-98	4
98-99	245.5
99-00	0.
1900-01	828
01-02	0
02-03	0
03-04	0
04-05	13760
05-06	35000
06-07	<del>14850</del> 30,000
07-08	<del>3800</del>
08-09	<del>12000</del>
09-10	<del>8750</del> *
10-11	<del>5325</del> *
11-12	<del>4730</del> *
12-13	
13-14	
14-15	

\* Gaged at Jamul.

YIELD OF GUYANACA RESERVOIR AND RUN-OFF FROM TRIBUTARY DRAINAGE AREA.  
(12 sq. mi.)

Values are in Acre Ft. and were computed from original records at Guyanaca Reservoir.

Season Jul 1, to Jun 30th.	Draft and *waste from Reservoir	Volume Water in Reservoir July 1	Reservoir Accumulation or Depletion	Evaporation & Percolation Loss	Total Run- Off	Run- Off per Sq. Mi.	Aggre- gate Run-off Per sq mi	Percent each seasons run- off bears to 19 year mean
93-94	2488	6110	-5614	3653	2563	214	214	60
94-95	2565	2496	+5359	3973	11279	941	1155	266
95-96	2984	6855	-5828	4891	2152	179	1334	51
96-97	2023	3027	- 362	2531	4216	351	1685	99
97-98	1741	2665	-2544	1627	834	69	1754	20
98-99	335	121	- 121	258	472	39	1793	11
99-00	55	0	0	78	260	22	1615	6
1900-01	492	0	+1549	971	3031	253	2068	72
01-02	1403	1549	- 470	1401	2351	196	2264	55
02-03	1061	1079	+ 207	1172	2516	209	2473	59
03-04	1237	1286	-1268	462	492	41	2514	12
04-05	45	18	+5449	1337	6831	568	3082	160
05-06	3329	5467	+5905	3538	12780	1065	4147	301
06-07	4742	11372	- 159	4569	9259	772	4919	218
07-08	2033	11213	-3562	4610	3201	267	5186	75
08-09	3157	7651	+ 330	3469	7172	598	5784	169
09-10	4210	8181	-2441	3316	5134	428	6212	121
1910-11	4831	5740	-3908	1808	2765	231	6453	65
11-12	1485	1852	+ 636	1495	3520	293	6746	83
12-13	-	2468	-	-	-	-	-	-
Period	2110	-	-245	2381	4250	354	-	-

19 year average run-off = 5.9 Sec. Ft. = 0.49 S.F. per sq. mi.  
 19 " " draft and waste = 2.9 Sec. Ft.  
 19 " " loss = 3.3 " "

Loss in storage 56% of run-off. \*Total waste in 19 years = 5627 Ac. Ft., 1610 Ac. Ft. in Jan. 1895, 759 Ac Ft in Apr to June 1906, and 3248 Ac Ft Mar to May 1907. This is 7% of the total 19 year run-off.

GUYANACA RESERVOIR.  
From Early Flume Co. records.

YIELD OF RAINFALL, CATCHMENT, DRAFT AND EVAPORATION.

Record Year Ending	Rainfall Inc. snow Ins.	Catchment Inc. Amt. Wasted Gallons	Average Draft Ms. Ins Days Gallons Ft.	Total Loss by Evaporn. Ft. Inc.	Avr. Evaporn- tion, Ins. per day
1887	24.05	1005015000	197.0	3	.316
1888	52.83	1819080000	96	4	
1889	61.51	1830115000	199.0	5	.250
1890	63.24	2326915000	98	9	.208
1891	39.61	1686863500	213.00	3	.205
1892	39.21	1328675000	141	6	.241
1893	15.05	664970000	164	3	.305
1894			706948560	5	
			89633780	1	
			599053000	7	

Residue in acre ft

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DISCHARGE OF SAN DIEGO RIVER AT DIVERTING DAM OF SAN DIEGO FLUME.

Total Drainage Area - 104 Sq. Mi.  
 Area Excluding Cuyamaca 92 Sq. Mi.

*Computed from San Diego Flume Co. Records by Lee*

Season	Net draft & waste from Cuyamaca		Yield of Drain Area Excluding Cuyamaca		Total	
	Sec. Ft.	Ac. Ft.	Sec. Ft.	Ac. Ft.	Sec. Ft.	Ac. Ft.
1898-99	.25	185.3	1.44	1033	1.69	1218
99-00	.01	9.2	0.91	656	0.92	665
1900-01	.47	340.0	6.03	4560	6.50	4700
01-02	1.24	901.3	6.26	4555	7.50	5456
02-03	1.15	927.0	11.95	8377	13.10	9304
03-04	1.30	949.2	1.00	723	2.30	1672
04-05	.02	14.9	30.28	22066	30.30	22081
05-06	*3.99	2883.	46.20	35592	50.10	36275
06-07	*6.05	4367.	41.35	29946	47.40	34313
07-08	2.06	1492.0	17.44	12632	19.50	14124
08-09	3.52	2400.0	28.68	20760	32.00	23160
09-10	4.60	3334.1	18.80	13629	23.40	16963
10-11	5.25	3800.0	11.55	8324	16.80	12124
11-12	1.48	1076.0	22.62	16556	24.1	17412
Period	2.25	1620	17.50	12628	19.64	14250

\* Includes waste from Cuyamaca Reservoir in 1906, 769 Ac. Ft. and 1907 5248 Ac. Ft.

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1911-12 - Revised as above Nov. 1912

RUN-OFF

San Diego River plus Flume Measurements by U. S. Geol. Survey.

Gagings near Lakeside.

Elevation 390 feet. Area 208 sq. mi.

Run-off in acre-feet.

	1905-06	06-07	07-08	08-09	09-10	10-11	11-12
July	(495)	580	627	495	640	485	213
Aug	(443)	509	548	443	1450	480	319
Sept	(446)	482	547	446	440	506	181
Oct	(416)	388	408	416	560	447	5
Nov	(1060)	223	200	311	280	287	0
Dec	(1120)	949	209	163	1920	307	8
Jan	1389	11584	1345	9530	9752	621	43
Feb	2644	5035	4696	15800	2845	5200	52
Mar	42188	15104	2920	7620	2831	4970	4722
Apr	17018	9804	1242	4970	2374	2100	6611
May	4722	3502	878	1880	670	569	2865
June	1374	1455	437	875	517	249	583
Total	73317	49615	14057	42949	24079	16221	15602

Note: ( ) signifies estimated quantities.

Data for chart 1.011.

RUN-OFF SAN DIEGO FLUME

MEASURED AT LOS COCHES. RECORDS FROM FLUME CO. IN ACRE FEET.

	<u>1906-07</u>	<u>1907-08</u>	<u>1908-09</u>	<u>1909-10</u>	<u>1910-11</u>	<u>1911-12</u>
Jul		600	489	451	478	200
Aug		548	443	426	480	300
Sept		547	446	435	506	164
Oct		408	416	349	447	4
Nov		188	311	269	287	0
Dec		172	163	483	307	4
Jan	284	382	401	162	387	41*
Feb	165	326	181	95	520	52
Mar	204	220	140	281	327	664
Apr	464	552	540	484	726	780
May	712	571	763	567	476	713
Jun	<u>562</u>	<u>413</u>	<u>451</u>	<u>494</u>	<u>221</u>	<u>555</u>
Total		<u>4927</u>	<u>4744</u>	<u>4476</u>	<u>5162</u>	<u>3477</u>

\* U.S. Records Jan to June incl. 1912.

Santa Ysabel River near Ramona.  
Panos Dam Site.  
Annual Summary.

	<u>1911-12</u>	<u>1912-13</u>
July	x 0	113
Aug	x 0	27
Sept.	x 0	29
Oct.	x 2	379
Nov.	x 24	161
Dec.	x 124	
Jan.	x 186	
Feb.	184	
Mar.	3970	
Apr	5010	
May	2390	
June	486	
	<u>12,376</u>	

x Estimated by WSPort. from occasional <sup>(once a month)</sup> observations July + 1911- to Jan 31-1912.  
 Gaugings Feb. 1912 to June - ~~to date~~ to date with staff gage, computed by Davis, who made measurements. Ross observer at the site continuously since Feb. to date.



RUN-OFF

Santa Ysabel River, (Near Escondido) Measurements by U.S. Geol. Survey

Gagings upper end of San Pasquel Valley Elev. 474 ft.

Drainage area 128 sq. mi.

Run-off in acre feet.

	<u>05-06</u>	<u>06-07</u>	<u>07-08</u>	<u>08-09</u>	<u>09-10</u>	<u>10-11</u>	<u>11-12</u>
July	(8)a	762	529	8	719	10	24
Aug	(0)	258	307	0	327	0	0
Sept	(0)	184	327	0	258	0	0
Oct	(37)	289	498	37	561	(894)	0
Nov	(123)	571	607	163	1020	(574)	123
Dec	(344)	762	738	347	5550	(614)	344
Jan	701	9530	1570	18000	18000	(1242)	504
Feb	1690	4020	3110	12000	2830	(5200)	367
Mar	38900	8480	2320	7260	2540	4970	6140 ✓
Apr	13200	6430	1240	4450	2330	1480	5280 ✓
May	4290	3010	842	2120	701	972	1990 ✓
June	1690	1460	301	1380	155	465	609 ✓
Total	60983	35756	12389	45765	34791	16421	15381

( ) Estimated.

a July to Dec. incl. 1905 selected lowest records during years 1906 to 1912 incl.

# 1910-11 and 1911-12 is at Pamo Dam Site.

*Santa Ysabel (w Bernardo) at Bernardo.  
Summary in Acft.*

	1911-12	1912-13.
July	0	6
Aug	0	0
Sept	0	0
Oct.	0	0
Nov.	0	0
Dec	0	
Jan	0	
Feb	0	
Mar x	4370	
Apr x	5520	
May	1900	
June	27	
	<u>11,817</u>	

Mar. Est. from Sta Ysabel at near Ramona 110%

Apr. - Station established Apr. 17-1912 - remainder month est. in ratio with Santa Ysabel near Ramona -

Remainder Gage Staff twice daily.

O.K.  
Nov. 1912  
W.P.

SUMMARY OF STREAM FLOW OF SANTA YSABEL CREEK

1911-1912

RUN-OFF IN ACRE FEET.

1911-12	Near Ramona		Near Escondido		at <del>San</del> Bernardo	
	Ac. Ft.	%	Ac. Ft.	%	Ac. Ft.	%
July	(20)	100	24	122	0 (0)	0
August	0	100	0	122	0 (0)	0
September	0	100	0	122	0 (0)	0
October	0	100	0	122	0 (0)	0
November	(101)	100	123	122	0 (50)	50
December	(282)	100	344	122	0 (141)	50
January	(413)	100	504	122	0 (392)	95
February	170	100	367	216	0 (162)	95
March	<del>5030</del> 3970	100	6140	122	4370 (5550)	110
April	<del>4530</del> 5010	100	5280	116	5520 (5100)	113
May	2390	100	1990	83	1900 2004	84
June	486	100	609	125	27 29	6
Total	<u>13392</u> <del>12342</del>	100	<u>15381</u>	114**	<u>13498</u>	100**

11817

Note: The interpolated values under "Near Ramona" were obtained by dividing "Near Escondido" flow by 122%, the mean relative value obtained from the comparative flow of the two stations on known days.

\*\* These are not the mean of column.)

Bernardo gauge established 11/17

RUN-OFF

Santa Maria Creek, near Ramona. (Santa Maria Dam)

Run-off in Acre-feet.

	1911-12	1912-13
July	(0)	0
August	(0)	0
September	(0)	0
October	(0)	0
November	(0)	6
December	(0)	
January	.6	
February	1.2	
March	437	
April	400	
May	(50)	
June	(6)	
Total	895	

San Luis Rey.  
MATAGUAL CREEK.

Acre feet.

	<u>1911-12</u>	<u>1912-13</u>
July		51
August		24
September		26
October		
November		
December		
January		
February		
March		
April		
May	144	
June	95	

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RUN-OFFSan Luis Rey River.

Measurements by W. S. Post.

Warner's Dam Site.

Elevation 2618. Area 210 sq miles.

	<u>1905-06</u>	<u>1910-11</u>	<u>1911-12</u>	<u>1912-13</u>
July	*168		108	109
Aug	*123		72	87
Sept	*104		101	83
Oct	*131		78	209
Nov	*750		91	
Dec	446		182	
Jan	778		248	
Feb	2511		191	
Mar	47012		4850	
Apr	10345		4270 ✓	
May	2921	** 420±	1350	
June	1670	124	182	
Total	66957		11723	

\* Estimated. | Dec. 1905 to June 1906 - observed at Dam Site P.L. & P.C. 211

\*\* Gaging by V.L. & W. Co. begun May 14 - 1911. and observed constantly on ground. Automatic installed in fall 1911.

RUN-OFF

San Luis Rey River: Measurements by U.S. Geological Survey  
Gagings at Pala Station Elevation 700. Area 318 Sq Miles.

Run-off in acre-feet.

	<u>1904-05</u>	<u>05-06</u>	<u>06-07</u>	<u>07-08</u>	<u>08-09</u>	<u>09-10</u>	<u>10-11</u>	<u>11-12</u>	<u>12-13</u>
July	254	252	1170	200	184	329		*184	
Aug	123	184	633	87	209	315		* 87	
Sept	119	155	220	132	119	297		*119	
Oct	154	197	184	1730	215	307		*154	
Nov	143	1059	494	1650	363	733		*143	
Dec	227	1125	4880	818	520	6588		*227	
Jan	1174	1320	33300	3850	12166	26449		570	
Feb	8386	1590	8550	10100	18301	3699		360	
Mar	20660	68900	20000	3760	8327	4334		9700	
Apr	3862	17900	9940	1270	5408	3038		4165	
May	5417	9720	3840	812	1693	613		2522	1968
June	1369	3900	1360	440	370	325		(500)	+86
								(a)	18163
Total	41868	106302	84571	24849	48075	47027	(28600)	18731	(a)

\*July to December selecting lowest figures in preceeding columns.  
(a) This is interpolated by taking mean of ratio of season 08-09 -- 09-10 of S.D. River, Santa Ysabel and Sweetwater, ratio = .608.  
Note: This Pala record does not include the Escondido Diversion.

mean 50,000 Acre ft = 3517 M. I. cons flow  
70.50 ft

RUN-OFF

San Luis Rey River:  
Gagings at Pala Station

Measurements by U.S. Geological Survey  
Elevation 700. Area 318 Square miles.

Run-off in acre-feet.

	<u>1904-05</u>	<u>05-06</u>	<u>06-07</u>	<u>07-08</u>	<u>08-09</u>	<u>09-10</u>	<u>10-11</u>	<u>11-12</u>	<u>12-13</u>
July	254	252	1170	200	184	329		*184	
Aug	123	184	633	87	209	315		* 87	
Sept	119	155	220	132	119	297		*119	
Oct	154	197	184	1730	215	307		*154	
Nov	143	1059	494	1650	363	733		*143	
Dec	227	1125	4880	818	520	6588		*227	
Jan	1174	1320	33300	3850	12166	26449		570	
Feb	8386	1590	8550	10100	18301	3699		360	
Mar	20660	68900	20000	3760	8527	4334		9700	
Apr	3862	17900	9940	1270	5408	3038		4165	
May	5417	9720	3840	812	1693	613		2522	1968
June	1369	3900	1360	440	370	325		(500)	+86
								(a)	18163
Total	41868	106302	84571	24849	48075	47027	(28600)	18731	(a)

\* July to December selecting lowest figures in preceeding columns.  
(a) This is interpolated by taking mean of ratio of season 08-09 - 09-10 of S.D. River, Santa Ysabel and Sweetwater, ratio = .608.

San Luis Rey River  
Warner's Dam Site

Measurements by W. S. Post.  
Elevation 2618. Area 210 Square miles.

	<u>1905-06</u>	<u>1911-12</u>
July	*168	108
Aug	123	72
Sept	104	101
Oct	131	78
Nov	750	91
Dec	446	182
Jan	778	248
Feb	2511	191
Mar	47012	4850
Apr	10343	4270
May	2921	(420) 1350
June	1670	124 182
Total	(27900) 66957	(56400)(16500)(32000)(32000)(19100)( 11723

\* July to November not observed, but taken as two-thirds of U.S. Measurements at Pala.  
Season totals of Warner's are taken as two-thirds Pala, the average ratio of the two measured seasons.  
The Pala record does not include water diverted by Escondido Ditch.

\*\* For May, Davis gives 1350.

Summary  
of  
Gagings upon San Luis Rey River  
1911-12.

Month	Warner dam		Rincon		U.S. Pala		Pala Bridge		Bonsall		Oceanside	
	A.Ft.	%	A.Ft.	%	A.Ft.	%	A.Ft.	%	A.Ft.	%	A.Ft.	%
July	108	100	(108)	100	(184)	170	(184)	170	0	0	0	0
Aug	72	100	( 72)	100	( 87)	120	( 87)	120	0	0	0	0
Sept	101	100	(101)	100	(119)	118	(119)	118	0	0	0	0
Oct	122	100	(122)	100	(154)	126	(154)	126	0	0	0	0
Nov	91	100	( 91)	100	(143)	157	(143)	157	0	0	0	0
Dec	183	100	(183)	100	(227)	124	(227)	124	0	0	0	0
Jan	248	100	(248)	100	(570)	223	(570)	223	0?	0	0?	0
Feb	191	100	(191)	100	(360)	190	(360)	190	0?	0	0?	0
Mar	4850	100	(4850)	100	(9700)	200	(9700)	200	(14500)	300	(14500)	300
Apr	4270	100	(6300)	150	(5200)	122	(5200)	122	(6990)	164	(7200)	169
May	1350	100	(726)	54	(2521)	187	2521	187	2072	153	1370	101
June	182	100	268	147	500	550	385	212	18	10	0	0
Total	11768	100	(13460)	114%	(19765)	168%	(19650)	167%	(23580)	200%	(23070)	171%

Note: Pala quantities et sequi do not include Escondido diversion.

Note: Quantities enclosed in parenthesis July to December at Pala are selected from the minimum figures of U.S. record between 1905-10.

Note: Remaining quantities enclosed in parenthesis are obtained by interpolation and comparison of partial records.

(a) Rincon July to Mar incl. assumed same as Warner's.

DIVERSION BY ESCONDIDO MUTUAL WATER COMPANY AT HEAD OF  
DITCH

RUN-OFF IN ACRE-FEET.

	1905-06	1906-07	1907-08	1908-09	1909-10	1910-11	1911-12
Jul		0	56	b0	0	0	0
Aug		0	0	b0	0	0	0
Sep		0	0	b0	0	0	0
Oct		147	71	b0	76	0	0
Nov		172	0	b83	76	0	0
Dec		997	509	b333	0	0	42b
Jan	387	125	412	b600	445	448	582b
Feb	1062	110	255	b761	311	688	861b
Mar	255	287	364	b1030	760	768	1033b
Apr	0	527	595	b702	687	380	996b
May	0	448	533	b529	0	338	421b
Jun	0	425	0	b314	0	95	0b
Total		3238	2795	b4352	2355	2379	3935b

b - signifies records compiled from "daily discharge" (A.T.)

SUMMARY OF STREAM GAGINGS.

July 1, 1912 to June 30th, 1913.

July 14, 1913.

Runoff in Acre-feet.

Month	(Col 2) Cuyamaca Lake	(Col 11) Boulder Creek	(Col 12) San Diego River exclusive of Boulder Creek.	(Col 13) Total Supply at Diverting Dam	(Col 20A) South SD River			Mouth of San Diego River
					Fork Lake Creek side	Mission Dam		
<b>1912</b>								
July	570	568	0	568	0	0	4	0
August	494	414	0	414	0	0	3	0
September	284	249	0	249	0	0	3	0
October	199	235	0	285	0	0	3	0
November	178	(220)+	(5)	(226)	0	0	3	0
December	68	(130)+	(63)	(198)	6	0	15	0
<b>1913</b>								
January	284	231	226	457	31	0	22	0
February	487	419	696	1115	229		63	0
March	1345	744	1633	2380	546			
April	235	379	629	1008	310			
May	93	135	123	258	49			
June	18	333	41	374	11			
<b>Total</b>	<b>4255</b>	<b>4107</b>	<b>3425</b>	<b>7532</b>	<b>1182</b>			

+ Estimated as equal to Diverting Dam runoff minus San Diego River above mouth of Boulder Creek.  
( ) Interpolated.

SUMMARY OF STREAM GAGINGS.

July 1st 1912 to June 30th 1913. - July 14, 1913.

SANTA YSABEL WATERSHED.

Runoff in Acre-feet.

Number---	26	28	28A	20	20A	22	27	25	23	24	Santa Fe
	Santa Ysabel at Santa Ysabel	Suther- land Site	Black Canyon	Pano Site	Tomescal Creek	Bernardo P.O.	Del Mar	Santa Maria	E.San Pasqual Ditch	W. San Pasqual Ditch	Santa Fe Rancho Ditch
Station-- Elevation Feet	2950	1900	1900	1000		310	50	1400	450	400	
Drainage Area Sq.Mi.	14	45	16	116		264	314	60	-	-	
July	69	110	0	113	(10)	6	0	0	30	8	
August	16	30	0	27	(10)	0	0	0	0	0	
September	18	30	0	29	(10)	0	0	0	0	0	
October	230	290	70	379	(15)	0	0	0	0	0	
November	100	120	30	164	(18)	(12)	0	1	0	0	
December	110	177	50	225	(18)	(18)	0	2		0	
<b>1913</b>											
January	(212)	410	(56)	460	(18)	8	0	2			
February	(303)	841	231	1355	75	333	122	8		118	
March	(718)	1426	269	1828	57	1469	928	8		326	
April	(431)	696	155	902	34	344	132	5		234	
May	(221)	370	69	418	21	25	0	2		6	
June	(125)	(178)	21	171	13	4	0	2			
<b>Total</b>	<b>2553</b>	<b>4678</b>	<b>951</b>	<b>6071</b>	<b>299</b>	<b>2220</b>	<b>1182</b>	<b>28</b>		<b>692</b>	

‡ Estimated  
( ) Interpolated.

**Ed Fletcher Papers**

**1870-1955**

**MSS.81**

**Box: 42 Folder: 9**

**Business Records - Reports - Taylor, "Report  
on Hydraulics; Summary of Seasonal Run-Offs"**



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