DEPARTMENT OF PUBLIC WORKS

STATE OF CALIFORNIA

REPORTS OF THE

DIVISION OF WATER RESOURCES

EDWARD HYATT, State Engineer

REPORT ON WATER MASTER SERVICE ON SOLDIER CREEK MODOC COUNTY, CALIFORNIA 1934 SEASON

BY

LESLIE C. JOPSON, Water Master

Sacramento, California

March 1935

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TABLES:

1. Precipitation Data.
2. Continuous Records of Daily Discharge in Cubic Feet per Second of Soldier Creek above Diversions for the period March 19th to August 29th, 1934.
3. Average Water Deliveries on Soldier Creek compared with Allotments - 1934 Season.
4. Estimated Crop Yields on Typical Lands Irrigated from Soldier Creek - 1934.

PLATES:

Hydrograph of Soldier Creek showing Water Supply above all Diversions in 1932 and 1934.

March 1, 1935

Mr. Harold Conkling,
Deputy State Engineer
Sacramento, California

Attention: Mr. Gordon Zander,
Supervising Hydraulic Engineer

Dear Sir:

There is transmitted herewith a report covering the water distribution work of the water master in the Soldier Creek Water Master District, Modoc County, California, during the period from March 19th to September 23rd, 1934.

The report describes the methods and practices followed in the distribution of the waters of Soldier Creek in accordance with the provisions of the decree in the case of San Francisco Cattle Loan Company, et al., vs. C. M. Crampton, et al., and presents the results obtained under this distribution.

Respectfully submitted,

LESLIE C. JOPSON
Water Master

ORGANIZATION

Earl Lee Kelly	Director of Public Works
Edward Hyatt	State Engineer
Harold Conkling	Deputy State Engineer

GORDON ZANDER

Supervising Hydraulic Engineer

T. Russel Simpson	Senior Hydraulic Engineer
Leslie C. Jopson	Water Master

GENERAL DESCRIPTION OF WORK

Water master service was continued in the Soldier Creek water master District in 1934 in accordance with the provisions of Section 37a of the Water Commission Act. The service was commenced for the season on March 19th, at the beginning of the first rotation period, and was terminated on September 23rd, when water master service was terminated for the season in Surprise Valley.

Mr. Leslie C. Jopson, Water Master, handled the distribution of water on Soldier Creek in conjunction with other Surprise Valley streams.

All diversions, except those of permittees, were opened in 1934 during the storm the last few days of March. Outside of four days during and after this storm there was no water available for more than the first three rights during the periods of either rotation class.

All parties diverted water whenever their was any available for their priority.

There was no official rotation of water in 1934 outside of the decree. However, a few of the users using the same ditches pooled their water at times.

DISCUSSION OF RESULTS FOR SEASON

Table I contains the precipitation data at Cedarville. The monthly and seasonal precipitation for the period of water master service in Surprise Valley and a comparison of the 1933--1934 seasonal precipitation with the 1894--1934 mean are also shown in the table. The 1933--1934 record shows the precipitation of that season as 70.3 per cent of the mean.

Table 2 is a tabulation of the water supply of Soldier Creek above all diversions for the 1934 season. The hydrograph at the end of this report is a graphical comparison of this flow and of that in 1932. The 1932 run-off was ample for all use and may be considered as approximately normal. The allotments of water during the various rotation periods are also shown on the hydrograph.

Table 3 is a comparison of water allotment and water supply during the periods shown.

There are three sources of supplemental water in the Soldier Creek stream system which normally contribute some water to the net available water supply during at least a portion of the season. These sources are Simpson, and Daniels Canyons and springs in the West Branch of the Creek. The flow from the canyons was small in 1934 and that from the springs is always fairly constant. The additional water from these sources was included in Table 3 by estimating the average flow from them during each rotation period and combining it with the average flow of Soldier Creek at the recorder to arrive at the column

entitled "Combined Flow above all Diversions, cfs."

Table 4 is a tabulation of crop yields on typical lands irrigated from Soldier Creek in 1934. The crops were poor on the upper ranches with fair crops of alfalfa on the lower ranches. Very little of the land was actually irrigated.

There were no changes or additions made in structures etc. in 1934.

The third priority allotments of George and Mervin Toney in the East Branch of the creek were used on the West Branch where the parties named have a fifth priority allotment. This manipulation of the water was at the request of the Toneys who claimed they could use the water to more advantage in that way. Only the net allotment was transferred as the allowance for channel loss was kept in the East Branch whenever there was sufficient water to use that channel also.

CONTROVERSIES

Some discussion has occurred nearly every year as to the division of the water between the fourth and fifth rights on the East Branch of the Creek. This division should be watched as closely as possible to prevent further friction.

RECOMMENDATIONS

Particular care should be taken at all times when the lower users are to receive water through the East Branch to see that the Crampton Lower and the Atkinson permit Ditches are closed.

An effort should be made to have the West Channel of the creek cleaned just below the channel division some cleaning work should also be done just above the division.

Some cleaning should also be done on the East Channel near the head of the Crampton Lower Ditch.

FINANCIAL STATEMENT

The funds collected from the water users in the Soldier Creek water master District, to defray the expenses of water master service, are placed to the credit of the Soldier Creek water master District fund by the State Treasurer. The state contributes an amount to the fund equal to that contributed by the water users. These funds are then drawn on by the Division of Water Resources to meet the costs of water master service.

TABLES

TABLE 1

PRECIPITATION

Cedarville, California

Season	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Seasonal
1924-25	0.25	2.06	1.86	1.66	1.08	1.34	0.61	0.65	1.59	0.49	0.29	0.30	12.18
1925-26	1.34	1.57	1.31	1.25	1.06	1.18	.13	1.26	1.07	T	.09	.09	10.35
1926-27	.15	.53	2.73	1.16	1.82	2.02	1.73	.81	.95	.35	T	T	12.25
1927-28	.32	.86	2.87	.86	.92	.75	2.93	.81	T	.55	.00	.00	10.87
1928-29	.40	.15	1.43	.42	2.08	.59	1.20	1.85	.29	1.98	.00	T	10.39
1929-30	.07	.19	.00	3.02	3.39	1.53	.83	.51	.67	T	.02	T	10.23
1930-31	1.64	.59	1.22	.18	.67	.66	1.68	.58	.25	2.25	.00	.00	9.72
1931-32	.33	3.20	.96	1.85	2.23	.70	1.97	1.87	.53	.22	T	T	13.86
1932-33	T	.13	.78	1.20	1.31	.81	.63	.86	1.06	.26	.25	T	7.29
1933-34	.42	1.23	T	.87	1.37	1.44	.98	.19	.94	1.14	.00	.13	8.71
1934-35	.52	.61	2.01	.85	1.32	.73	1.67	2.94	.32	.00	T	.00	10.97
Average 1925-1935	.49	1.01	1.38	1.21	1.57	1.07	1.30	1.12	.70	.66	.06	.05	10.62
Mean 1894-1935	.54	1.01	1.56	1.54	1.74	1.51	1.47	.91	1.00	.68	.22	.17	12.35
1925-35 in percent of total mean	4.0	8.2	11.2	9.8	12.7	8.7	10.5	9.0	5.7	5.3	0.5	0.4	86.0

TABLE 2

CONTINUOUS RECORDS OF DAILY DISCHARGE IN CUBIC FEET PER SECOND OF SOLDIER CREEK ABOVE DIVERSIONS FOR THE PERIOD MARCH 19TH TO AUGUST 29, 1934

Day	March	April	May	June	July	August	Sept.	
1		11.3	4.60	2.60	0.90	0.45		
2		9.50	6.00	1.90	.85	.45		
3		7.70	4.40	1.60	.80	.45		
4		7.10	3.50	1.50	.75	.45		
5		6.80	3.20	1.90	.75	.45		
6		6.80	2.80	1.85	.70	.45		
7		7.10	2.60	1.80	.70	.45		
8		7.10	3.00	1.75	.70	.45		
9		6.30	2.50	1.75	.65	.45		
10		6.30	2.40	1.70	.65	.45		
11		6.30	2.20	1.70	.65	.45		
12		6.30	2.10	1.70	.60	.45		
13		6.00	2.10	1.70	.60	.45		
14		5.70	2.00	1.60	.60	.45		
15		5.40	1.80	1.50	.60	.45		
16		4.60	1.70	1.40	.55	.40		
17		4.10	1.70	1.30	.55	.40		
18		3.90	1.60	1.30	.55	.40		
19	4.60	3.70	1.60	1.30	.50	.40		
20	4.60	3.70	1.50	1.30	.50	.40		
21	4.60	3.70	1.50	1.30	.50	.40		
22	5.20	3.50	1.40	1.25	.50	.40		
23	4.60	3.70	1.40	1.25	.50	.40		
24	4.40	3.50	1.30	1.25	.45	.40		
25	10.7	3.70	1.50	1.20	.45	.40		
26	8.00	3.20	1.40	1.20	.45	.40		
27	10.7	3.00	1.30	1.15	.45	.40		
28	21.3	2.80	1.30	1.10	.45	.45		
29	16.5	2.70	1.40	1.10	.45	.45		
30	15.0	3.20	1.40	1.00	.45			
31	13.0	--	2.60	--	.45			
Total Sec. feet Days	*121.20	158.70	69.80	44.95	18.25	**12.45		164 Day Period
Mean Sec.Feet	9.32	5.29	2.25	1.50	.59	.43		2.59
Maximum Sec. feet	21.3	11.3	6.00	2.60	.90	.45		21.3
Minimum Sec.Feet	4.40	2.70	1.30	1.00	.45	.40		.40
Total Acre Feet	240.	315.	138.	89.1	36.2	24.7		843.

*13 Day period.

**29 Day period.

Gage heights from automatic Water Stage Recorder.

TABLE 3

AVERAGE WATER DELIVERIES ON SOLDIER CREEK COMPARED WITH ALLOTMENTS - 1934

Priority	Rotation Period								Dry Weather Period Continuous Flow	
	Lower Users 3/19 to 3/31	Upper Users 4/1 to 4/10	Lower Users 4/11 to 4/23	Upper Users 4/24 to 5/3	Lower Users 5/4 to 5/16	Upper Users 5/17 to 5/26	Lower Users 5/27 to 6/8	Upper Users 6/9 to 6/18	6/19 to 7/18	7/19 to 8/18
1	100	100	100	100	100	70	80	71	40	20
2	100	91	54	30	0	0	0	0	0	0
3	40	20	3	0	9	0	0	0	0	0
4	35	5	0	0	0	0	0	0	0	0
5	10	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0
Total Deliveries cfs.	7.72	7.80	3.17	3.86	2.55	1.55	1.76	1.57	.88	.45
Allotments cfs.	24.52	26.22	24.52	26.22	24.52	26.22	*21.83	21.85	**11.75	**11.75
Per cent of Allotments Delivered	32	30	13	15	10	6	8	7	7	4
Combined Flow above all Diversions, cfs.	9.72	8.00	5.17	4.01	2.65	1.65	1.86	1.67	.98	.55
Channel Loss cfs.	2.00	.20	2.00	.15	.10	.10	.10	.10	.10	.10

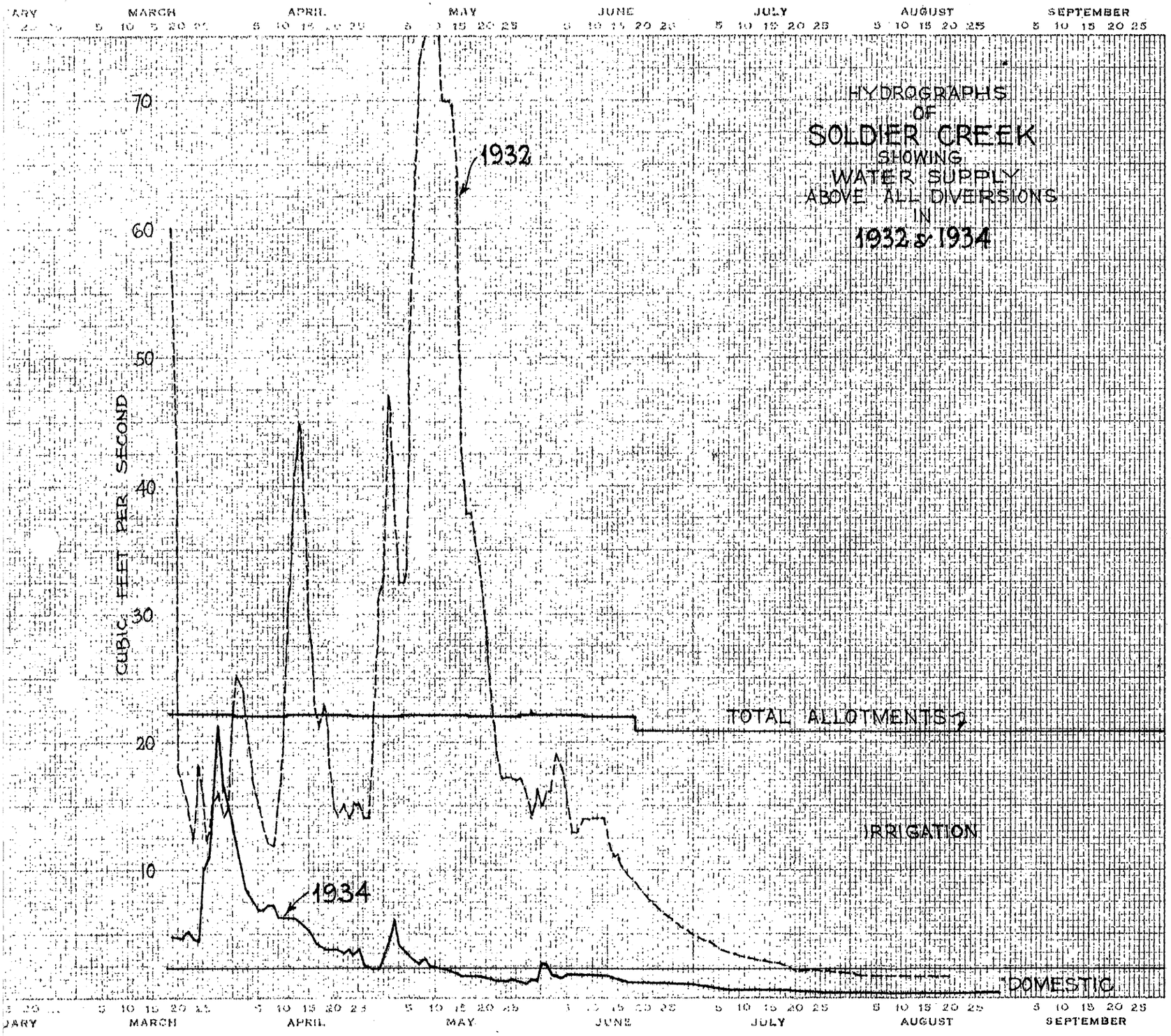
*Includes Permit Rights of 4.37 cubic foot per second for 5 days.
**Upper Ditches only (Generally no water available for remaining rights)

TABLE 4

ESTIMATED CROP YIELDS ON TYPICAL LANDS
IRRIGATED FROM SOLDIER CREEK - 1934

Owner	Crop	Acres	Total Yield		Yield per Acre	
			Tons	Sacks	Tons	Sacks
C.E. Atkinson	Alfalfa Hay	5.0	10		20	
	Wheat	3.0		45		15
	Alfalfa Seed	30.0	6000#		200#	
	Alfalfa Chaff	30.0	45		1.5	
G.M. Warrens	Alfalfa Hay	15.0	30		20	
	Grain Hay	17.0	17		1.0	
	Alfalfa Seed	79.0	4000#		51#	
	Alfalfa Chaff	79.0	30		.4	
	Rye	9.0		40		4

P L A T E


HYDROGRAPHS
OF
SOLDIER CREEK
SHOWING
WATER SUPPLY
ABOVE ALL DIVERSIONS
IN
1932 & 1934
1932
1934
TOTAL ALLOTMENTS
IRRIGATION
DOMESTIC
CUBIC FEET PER SECOND
70
60
50
40
30
20
10
MARCH
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER