STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

REPORTS OF THE
DIVISION OF WATER RESOURCES
EDWARD HYATT, STATE ENGINEER

REPORT ON

WATER MASTER SERVICE

ON

SOLDIER CREEK

MODOC COUNTY, CALIFORNIA

FOR THE SEASON OF 1936

By

J. W. McPartland
Deputy Water Master

Sacramento, California
December, 1938

TABLE OF CONTENTS

LETTER OF TRANSMITTAL

ORGANIZATION

GENERAL DESCRIPTION OF WORK 1

DISCUSSION OF RESULTS 2

VIOLATION OF DECREE OR CONTROVERSIES 4

RECOMMENDATIONS 5

TABLES:

1. Precipitation Data.

2. Snow Survey Data.

3. Continuous Records of Daily Discharge in Cubic Feet per Second of Soldier Creek above all Diversions for the Period April 21st to September 30th, 1936.

PLATES:

Hydrographs of Soldier Creek showing supply above all Diversions, 1932-1936.

December 8, 1938

Mr. Harold Conkling
Deputy State Engineer
Sacramento, California

Attention: 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 1936 irrigation season.

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

Respectfully submitted,

J. W. McPartland
Deputy Water Master

ORGANIZATION

EARL LEE KELLY	DIRECTOR OF PUBLIC WORKS
EDWARD HYATT	STATE ENGINEER
HAROLD CONKLING	DEPUTY STATE ENGINEER

GORDAN ZANDER

Supervising Hydraulic Engineer

T. Russel Simpson	Senior Hydraulic Engineer
J. W. McPartland	Deputy Water Master

GENERAL DESCRIPTION OF WORK

Water master service was continued in the Soldier Creek Water Master District in 1936, in accordance with the provisions of Section 37a of the Water Commission Act. The service was commenced for the season on March 19th, on Soldier Creek and was continued until September 30th, when water master service was terminated for the season.

The work of water distribution in the Soldier Creek Water Master District was done by J. W. McPartland, Deputy Water Master for the entire season, under the direction of T. R. Simpson, Supervising Water Master.

All ditches in the Soldier Creek Water Master District were opened in 1936, and all users exercised their full legal rights whenever water was available for use. The permit rights were allowed to divert when the flow of Soldier Creek exceeded its full allotments of water under the decree.

Rotation was practiced starting about May 1st and was continued until June 19th. The last rotation period for the lower users, due to the flow of Soldier Creek, was insufficient, therefore the users rotated with each other.

DISCUSSION OF RESULTS

Table 1, 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 1935-36 seasonal precipitation with the 1894-1936 mean are also shown in the table. The 1935-36 record shows the precipitation of that season as 113.0 per cent of the mean.

Table 2, contains the results of the snow surveys made annually at the three courses in the Upper Pit River Watershed. Considering the two snow courses on the Warner Range, namely, Eagle Peak and Cedar Peak, it is apparent that the 1936 snow surveys indicate that the water content of the snow on these two courses was 110.0 per cent and 118.0 per cent respectively, of their respective deduced normals. A mean between these two figures is 114.0 per cent which should be indicative of the expected runoff from the Soldier Creek Watershed.

Table 3, is a tabulation of the water supply of ~~Mill~~ Soldier Creek above all diversions for the 1936 season. Plate 1, at the end of the report compares graphically the flow of 1936 with that of 1932. The allotments of various priorities are also shown.

Simpson Canyon did not flow after the first part of June, with only 0.20 cubic foot per second in Daniels Canyon the end of June.

First priority rights remained 100 per cent until July 20th when Soldier Creek commenced to diminish until the end of the season.

The crop yields on the typical lands irrigated from Soldier Creek during the 1936 season were considered normal.

Killing frosts occurred on September 16th, after that date only stock water was desired by the users.

No new installations were made in the Soldier Creek Water master District although several old structures were repaired.

The schedule of use was followed as closely as possible during the season of 1936.

VIOLATION OF DECREE AND CONTROVERSIES

No violations of the decree or controversies over the distribution of the waters of Soldier Creek developed during the 1936 season.

RECOMMENDATIONS

Most of the measuring devices in the ditches diverting from Soldier Creek, were installed years ago, and should be replaced when time and material are available.

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
1935-36	.13	1.08	.42	1.48	5.60	2.31	1.38	0.16	.64	.41	.16	.10	13.87
Average 1925-1936	.46	1.02	1.30	1.23	1.90	1.17	1.31	1.04	.69	.64	.07	.05	10.88
Mean 1894-1936	.54	1.01	1.56	1.54	1.74	1.51	1.47	.91	.92	.67	.21	.16	12.24
1935-36 in per cent of total mean	1.1	8.8	3.4	12.1	45.7	18.9	11.3	1.3	5.2	3.3	1.3	0.8	113.

TABLE 2

DIVISION OF WATER RESOURCES
SNOW SURVEY - UPPER PIT RIVER

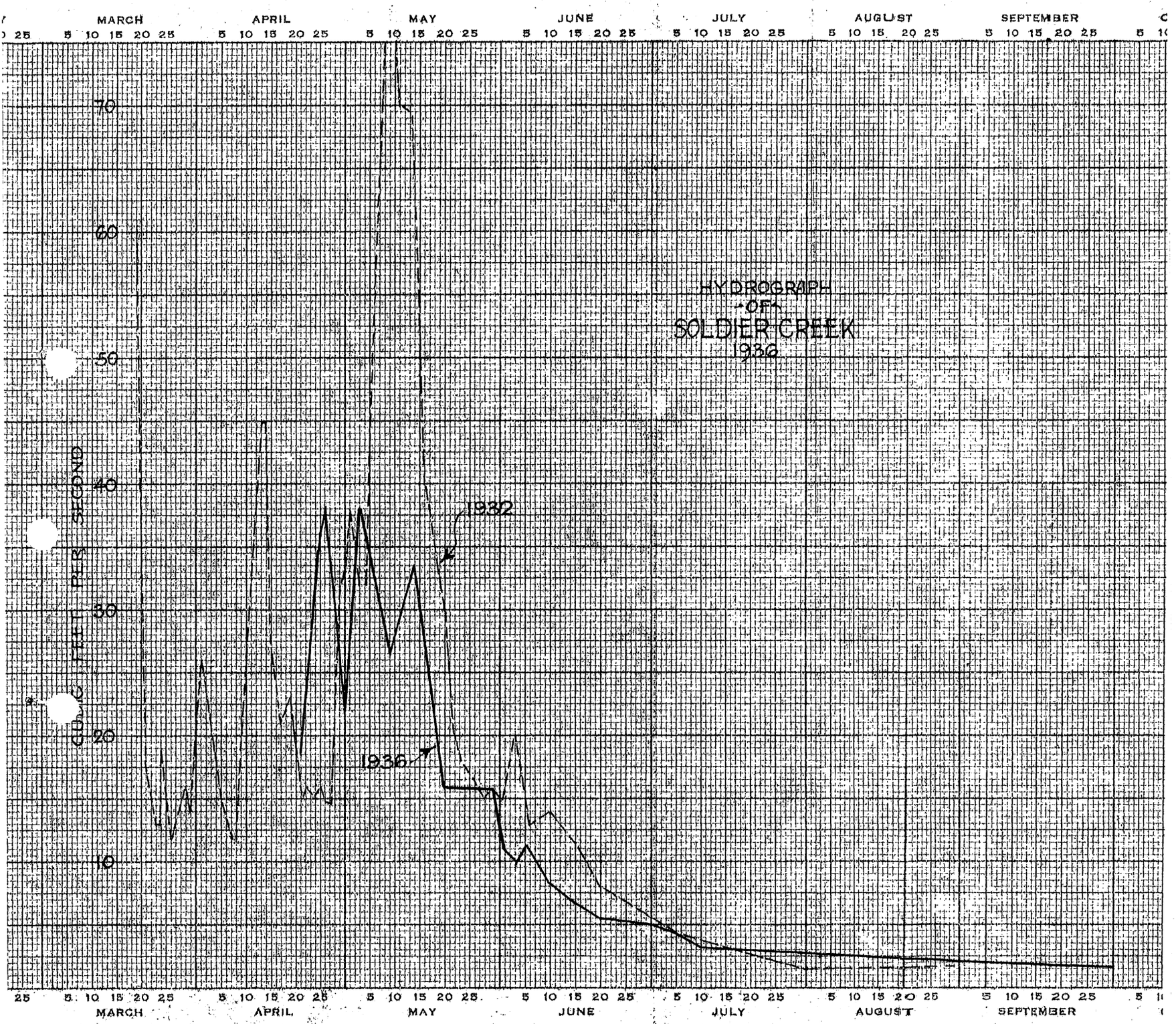
	1930	1931	1932	1933	1934	1935	1936
Eagle Peak Course - Elev. 7500 Ft.							
Date of Survey	4/3	4/1	3/30	3/30	4/2	4/10	4/9
Depth of Snow - Inches	24.3	13.3	43.8	38.1	9.9	66.1	52.0
Water Content - Inches	11.0	5.2	18.7	14.3	3.3	22.6	22.0
Density - Per cent	45.3	39.1	42.6	37.5	33.3	34.2	42.3
Deduced Normal Water Content							
% of Deduced Normal	55.0	27.0	94.0	71.5	16.5	113.0	110.0
Record Average - In.							
% of Record Average	78.0	36.3	131.0	100.0	23.0	158.0	154.0
Cedar Peak Course - Elev. 7200 Ft.							
Date of Survey	3/31	3/31	3/26	3/28	3/31	3/27	4/5
Depth of Snow - In.	29.3	22.1	49.2	43.9	2.2	56.4	68.2
Water Content - In.	13.0	8.0	19.8	16.3	0.9	21.1	26.2
Density - Per cent	44.4	37.6	40.3	37.1	40.8	37.4	38.4
Deduced Normal Water Content							
% of Deduced Normal	58.7	36.1	88.4	73.4	4.1	98.2	118.0
Record Average - In.							
% of Record Average	82.0	50.4	118.0	102.5	5.7	133.0	165.0
Adin Mountain Course - Elev. 6500 Ft.							
Date of Survey	3/27	3/27	3/24	3/27	4/1	4/17	3/26
Depth of Snow - In.	13.3	6.1	30.0	37.6	0	45.9	47.2
Water Content - In.	6.1	2.9	13.3	14.1	0	18.8	20.0
Density - Per Cent	45.6	47.3	44.3	37.5	0	40.9	42.3
Deduced Normal Water Content							
% of Deduced Normal	37.9	18.0	82.5	87.6	0	116.6	124.3
Record Average - In.							
% of Record Average	53.0	25.2	115.6	122.5	0	163.7	174.0

TABLE 3

CONTINUOUS RECORDS OF DAILY DISCHARGE IN CUBIC FEET PER SECOND OF SOLDIER CREEK ABOVE ALL DIVERSION FOR THE PERIOD APRIL 21st TO SEPTEMBER 30th, 1936

Day	April	May	June	July	August	Sept.	
1		25.6	10.9	5.00	2.00	1.70	
2		30.4	10.2	4.80	1.90	1.70	
3		38.6	9.90	4.60	1.90	1.70	
4		36.0	10.2	4.50	2.00	1.70	
5		30.4	11.3	4.30	2.00	1.70	
6		25.6	12.0	4.20	1.90	1.70	
7		23.8	14.4	4.00	1.90	1.70	
8		25.6	12.7	3.60	1.90	1.70	
9		26.4	11.3	3.40	1.90	1.70	
10		20.4	10.6	3.10	1.90	1.70	
11		30.4	10.6	3.00	2.40	1.70	
12		31.4	9.90	2.90	2.00	1.70	
13		33.5	9.60	2.90	1.90	1.70	
14		30.2	9.00	2.90	1.90	1.70	
15		24.6	8.10	2.80	1.90	1.70	
16		21.8	7.60	2.80	1.90	1.70	
17		21.8	7.60	2.80	1.90	1.70	
18		20.4	7.00	2.70	1.80	1.70	
19		17.8	6.80	2.70	1.80	1.70	
20		15.8	6.60	2.60	1.80	1.70	
21	18.5	15.8	6.30	2.50	1.80	1.70	
22	20.4	15.8	6.10	2.50	1.80	1.70	
23	21.7	14.7	5.70	2.30	1.80	1.70	
24	30.4	15.8	5.70	2.30	1.80	1.70	
25	36.0	15.8	5.50	2.20	1.80	1.70	
26	38.6	17.8	5.40	2.20	1.80	1.60	
27	31.3	18.5	5.40	2.10	1.80	1.60	
28	27.2	15.2	5.20	2.10	1.80	1.60	
29	25.6	15.8	5.00	2.10	1.80	1.60	
30	21.8	15.8	5.00	2.10	1.80	1.60	
31		13.4		2.00	1.80		
Total Sec. Feet Days	*271.5	712.9	251.6	94.0	58.4	50.5	163 Day Period
Mean Sec. Feet	27.2	23.0	8.39	3.03	1.88	1.68	8.83
Maximum Sec. Feet	38.6	38.6	14.4	5.00	2.40	1.70	38.6
Minimum Sec. Feet	18.5	13.4	5.00	2.00	1.80	1.60	1.60
Total Acre-Total	538.	1414.	499.	186.	116.	100.	2853.

* 10 Day Period


HYDROGRAPH
OF
SOLDIER CREEK
1936
1932
1936
CUBIC FEET PER SECOND
70
60
50
40
30
20
10
MARCH
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
5 10 15 20 25