DEPARTMENT OF PUBLIC WORKS

STATE OF CALIFORNIA

REPORTS OF THE

DIVISION OF WATER RESOURCES

EDWARD HYATT, State Engineer

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REPORT ON WATER MASTER SERVICE ON SOLDIER CREEK

MODOC COUNTY, CALIFORNIA

FOR SEASON OF 1933

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By Leslie C. Jopson, Modoc County Water Master

Sacramento, California

March 1, 1934

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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	Modoc County Water Master
F. G. Montelegre	Deputy Water Master.

STATE OF CALIFORNIA

Department of Public Works

SACRAMENTO

DIVISION OF WATER RESOURCES
401 PUBLIC WORKS BUILDING

March 1, 1934

EDWARD HYATT, STATE ENGINEER
CHIEF OF DIVISION

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 24, 1933.

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,

[illegible]

Modoc County Water Master

GENERAL DESCRIPTION OF WORK

Water master service was continued in the Soldier Creek Water Master District in 1933 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 continued until September 24th, when water master service was terminated for the season in Surprise Valley.

Mr. Leslie C. Jopson, Modoc County Water Master handled the distribution of water on Soldier Creek with part time assistance from F. G. Montelegre, Deputy Water Master.

During the 1933 season all the ditches except the Jones Ditch were opened and diverted water. The domestic rights diverted water continuously but all of the irrigation rights diverted on a rotation basis, except the Daniels rights, according to the schedule of rotation contained in the decree in the case of the San Francisco Cattle Loan Company, et al., vs. C. M. Crampton, et al. A secondary rotation schedule was inaugurated between certain groups of the lower users as will be described in the following chapter.

A division structure was installed in the Stiner-Heard East Ditch to divide the water between the Stiner and the Heard Ranches.

DISCUSSION OF RESULTS FOR SEASON

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 1932-33 seasonal precipitation with the 1894-1933 mean are also shown in this table. The 1932-33 record shows the precipitation of that season as 64.2 per cent of the mean.

Table 2 is a tabulation of the water supply of Soldier Creek above all diversions for the 1933 season. The hydrograph at the end of this report is a graphical comparison of this flow and that of 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.

Table 4 is a tabulation of crop yields on typical lands irrigated from Soldier Creek. The yields in 1933 were approximately fifty per cent of those received in 1932. The crop shortage was partly due to insufficient water and partly due to the winter killing of considerable alfalfa.

The two lower users of the Company Ditch, the Street and the Sharp Ranches, have in the past divided the water in the ditch into two laterals about three quearters of a mile above the Street Ranch but in 1933 the two users agreed to abandon the old Street Lateral and to run all the water down the Sharp Lateral to a point just above the place of use on the Street Ranch. A new division structure was installed at this point to divide the water between the two ranches and a new

lateral about four hundred feet in length constructed to serve the Street Ranch. The low flow loss to the lower users was cut at least fifty per cent by the change. The water was distributed according to the provisions of the decree in the case of the San Francisco Cattle Loan Co., et al., vs. C. M. Crampton, et al., with certain minor deviations to prevent waste.

The principal deviation was made to eliminate the excessive losses incurred when moderate flows were being diverted through both the East and the West channels. During the major portions of the first, third and fifth rotation periods in 1933 the flow was insufficient to fill all the rights of the two channels and in order to prevent waste the entire flow available for diversion was turned into the West channel where the second and third rights were allowed to divert the water. A record was kept of the amount of water used by the second and third rights in excess of their allotments and near the end of the fifth rotation period these rights were shut off so that the fourth and other rights on the East Channel might use a sufficient amount of second and third priority water to compensate for the excess water diverted by the West Channel users. Under this procedure the water was turned into the East Channel the last two and one-half days of the fifth period. During the seventh rotation period there was sufficient water for both channels to divert continuously.

The third priority right referred to in the foregoing paragraph was decreed to lands on the East Channel of the Creek but the owners have land on both channels and in 1933 elected to take their third priority water through the West channel for use on the lands tributary thereto.

VIOLATIONS OF DECREE AND CONTROVERSIES

There were no controversies of consequence during the 1933 season, although there were several questions in regard to the use of the water which came up for discussion. The main points brought up and settled were as follows:

1. The use of water in the west channel was adjusted between the second and third priority rights on the basis that with flows measured at the head of the Toney Ditch, of less than 1.55 cubic feet per second the entire flow should go to the second priority as per decree. For flows in excess of 1.55 cubic feet per second the water was rotated between the second and third priority rights on the basis of seven parts to the second rights and six parts to the third rights. When the flow exceed about 2.50 cubic feet per second the Brown Ditch was unable to carry the water and a portion of the flow was necessarily shunted across the George Toney Meadow. Under this condition it was preferable to have the third priority rights use the water first in order to wet the meadow for the passage of this water.

2. The Toney-Streif Ditch on the East Channel of the creek which was originally decreed the third priority right was allowed to divert water on the fifth priority in exchange for the third priority right used on the West channel. The West channel was originally decreed a fifth priority right.

3. The use of water on the Company Ditch was regulated upon the request of the lower most user on the ditch who had difficulty in getting his allotment past the other users. The taps of the two upper users were especially subjected to regulation as their rights in the ditch were the smallest and they were rather careless in observing the lower users rights.

RECOMMENDATIONS

The main structures on Soldier Creek are in fair shape with new ones required as set forth in the 1932 report. An effort should be made to have the channels cleaned above and below the channel division in order to facilitate the use of the structure as a division. At the present time the west channel backs water into the division during the lower flows.

FINANCIAL STATEMENT

There was no water master service assessment levied upon the water users in the Soldier Creek Water Master District in 1933 due to a sufficient surplus having been built up in preceding years to carry the cost of the service through the season without additional funds.

There is submitted on the following page a statement of the Soldier Creek Water Master District Fund showing the receipts and disbursements during the 1933 season.

FINANCIAL STATEMENT

SOLDIER CREEK WATER DISTRICT FUND

January 1, 1934

RECEIPTS

Balance on March 1, 1933	$ 566.52	
Contributed by Taxpayers (Mar. 1/33 to Jan. 1/34). .	15.80	$ 582.32

DISBURSEMENTS
(Mar. 1/33 to Jan. 1/34)

Water Master Compensation.	257.43	
Water Master Travel Expense.	97.74	355.17

BALANCE	227.15

TABLES

TABLE 1

PRECIPITATION

Cedarville, California

Season	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	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	.90	1.06	.26	.25	T	7.33
Mean 1894 to 1933	.56	.98	1.59	1.54	1.76	1.55	1.45	.90	1.03	.65	.24	.18	12.43
1931-32 in per cent of total mean	.0	1.1	6.8	10.5	11.5	7.1	5.5	7.9	9.3	2.3	2.2	0	64.2

TABLE 2

CONTINUOUS RECORDS OF DAILY DISCHARGE IN CUBIC FEET PER SECOND OF SOLDIER CREEK ABOVE ALL DIVERSIONS FOR THE PERIOD MARCH 19 TO SEPTEMBER 24,1933.

Day	March	Apr.	May	June.	July	Aug.	Sept.	
1		9.80	15.3	25.7	3.45	2.50	.90	
2		13.8	13.8	24.4	3.30	1.20	.85	
3		19.0	13.3	22.6	3.10	1.00	.85	
4		14.3	16.8	20.2	3.00	1.00	.85	
5		12.4	14.3	21.3	2.90	1.00	.80	
6		10.8	12.4	20.2	2.80	1.00	.80	
7		9.20	10.2	19.0	2.90	1.00	.80	
8		7.60	9.10	17.9	2.90	1.00	.75	
9	NO	6.05	8.80	16.3	2.75	1.00	.75	
10		5.50	9.10	14.8	2.55	1.00	.70	
11		5.80	9.90	14.3	2.40	1.00	.70	
12		8.00	9.90	13.8	2.25	1.00	.70	
13		9.10	13.8	12.0	2.10	1.00	.65	
14	RECORD	13.3	15.3	9.90	2.10	1.00	.65	
15		16.3	20.2	9.10	2.05	1.00	.65	
16		11.5	19.6	8.00	2.00	1.00	.60	
17		7.60	16.9	6.65	1.90	1.10	.60	
18		6.40	17.9	5.80	1.85	1.00	.70	
19	4.50	5.80	18.5	5.25	1.80	1.00	.65	
20	6.00	7.00	19.0	5.00	1.75	1.00	.65	
21	4.30	11.5	17.9	4.75	1.75	.95	.65	
22	3.85	17.4	15.8	4.50	1.75	.95	.65	
23	3.30	25.0	19.0	4.30	1.70	.95	.65	
24	2.90	26.3	25.0	4.05	1.60	.95	3.50	
25	2.55	20.2	30.3	3.95	1.55	.95	NO	
26	2.25	27.7	31.8	3.85	1.50	.90		
27	2.70	29.7	31.8	4.05	1.45	.90		
28	3.30	27.7	31.8	3.85	1.35	.90	RECORD	
29	3.65	26.3	34.0	3.70	1.30	.90		
30	5.00	19.6	34.6	3.50	1.30	.90		
31	6.65	--	32.4	--	1.35	.90		
Total Sec. Feet Days	*50.95	430.65	588.50	332.70	66.45	31.95	**20.05	190 Day Period
Mean Sec.Feet	3.92	14.56	18.98	11.09	2.14	1.03	.84	8.01
Maximum Sec.Feet	6.00	29.7	34.6	25.7	3.45	2.50	3.50	34.6
Minimum Sec.Feet	2.25	5.50	8.80	3.50	1.30	.90	.60	.60
Total Acre Feet	101	854	1170	660	132	63.4	39.8	3020

* 13 Day Period.
**24 Day Period.

TABLE 3

AVERAGE WATER DELIVERIES ON SOLDIER CREEK COMPARED WITH ALLOTMENTS
1933

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	8/19 to 9/18
	Per Cent										
1	100	100	100	100	100	100	100	100	100	63	37
2	0	100	124	100	105	100	112	100	36	--	--
3	0	100	124	100	105	100	112	100	0	--	--
4	0	37	0	100	55	100	112	38	0	--	--
5	0	0	0	100	7	100	112	0	0	--	--
6	0	0	0	100	100	100	112	0	0	--	--
7	0	0	0	100	100	100	112	0	0	--	--
8	0	0	0	100	0	41	0	0	0	--	--
9	0	0	0	35	0	0	0	0	--	--	--
10	0	0	0	0	0	0	0	0	--	--	--
11	0	0	0	0	0	0	0	0	--	--	--
12	--	0	--	0	--	0	--	0	--	--	--
Total Deliveries c. f. s.	2.20	11.19	8.83	22.29	11.53	21.41	24.50	11.21	3.34	1.39	.82
Allotments c. f. s.	24.52	26.22	24.52	26.22	24.52	26.22	*21.83	21.85	**11.75	***2.20	***2.20
Per Cent of Allotments Delivered	9	43	36	85	47	82	112	51	28	63	37
Combined Flow above all Diversions	4.42	11.44	11.83	22.79	13.73	21.91	26.50	11.41	3.44	1.49	.92
Channel Loss: c. f. s.	2.22	.25	3.00	.50	2.20	.50	2.00	.20	.10	.10	.10

*Include Permit Rights of 4.37 cubic feet per second for 5 days.
**Upper Ditches only (Generally no water available for remaining rights).
***Domestic Allotments. (Generally no water available for remaining rights)

Note: The San Francisco Cattle Loan Co. Ranch is allowed the first 3.60 cubic feet per second of water in excess of the decreed rights whenever there is sufficient water to reach them.

TABLE 4

CROP PRODUCTION ON TYPICAL LANDS IRRIGATED FROM
SOLDIER CREEK AND TRIBUTARIES - 1933 SEASON

Owner	Crop	Acres	Total Yield		Yield per Acre	
			Sacks	Tons	Sacks	Tons
S. Bennett (Brown)	Meadow Hay	67.6		69		1.0
	Alfalfa Hay	50.0		129		2.6
	Barley	14.0	40		2.9	
	Pasture	20.0		Good		
S. Bennett (Streif)	Meadow Hay	101.0		150		1.5
	Alfalfa Hay	17.0		20		1.2
	Barley	7.0	40		5.7	
George Stiner	Alfalfa Hay	77.1		90		1.2
	Barley	8.0	90		11.2	
	Wheat	10.0	68		6.8	
	Pasture	37.0		Fair		
George M. Warrens	Grain Hay	3.0		4		1.3
	Alfalfa Seed	70.0	7000#		100#	
	Garden					

PLATES