DEPARTMENT OF PUBLIC WORKS

STATE OF CALIFORNIA

REPORTS OF THE

DIVISION OF WATER RESOURCES

EDWARD HYATT, State Engineer

REPORT ON WATER MASTER SERVICE ON EMERSON CREEK MODOC COUNTY, CALIFORNIA FOR SEASON OF 1931

LESLIE C. JOPSON, Modoc County Water Master

Sacramento, California

February 1932

TABLE OF CONTENTS

	Page
LETTER OF TRANSMITTAL	
ORGANIZATION	
GENERAL DESCRIPTION OF WORK	1
DISCUSSION OF RESULTS FOR SEASON	2
RECOMMENDATIONS	4
FINANCIAL STATEMENT	5

TABLES:

1. Precipitation Data
2. Continuous Records of Daily Discharge in Cubic Feet per Second of Emerson Creek above all Diversions for the Period April 1st to July 31st, 1931.
3. Water Deliveries on Emerson Creek Compared with Allotments - 1931 Season.
4. Estimated Crop Yields on Typical Lands Irrigated from Emerson Creek - 1931.

PLATE:

Hydrograph of Emerson Creek showing Total Water Supply 1927 and 1931.

STATE OF CALIFORNIA

Department of Public Works

SACRAMENTO

DIVISION OF WATER RESOURCES
401 PUBLIC WORKS BUILDING

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 Emerson Creek Water Master District, Modoc County, California, during the period from April 1st to July 31st, 1931.

The report describes the methods and practices followed in the distribution of the waters of Emerson Creek in accordance with the provisions of the decree in the case of F. A. Murphey, et al., vs. W. G. Warren, et al., and presents the results obtained under this distribution.

Respectfully submitted,

LESLIE C. JOPSON
Modoc County Water Master

ORGANIZATION

Walter E. Garrison	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
Heath Stanley	Deputy Water Master

GENERAL DESCRIPTION OF WORK

Water master service was conducted on Emerson Creek during the 1931 season in accordance with the provisions of the decree in the case entitled F. A. Murphey, et al., vs. W. G. Warren, et al., dated March 25, 1930.

The field work was commenced by the writer on April 1st and was terminated for the season on July 31st. Mr. Heath Stanley was employed on a part time daily basis to assist as water master on Emerson, Owl, Cedar and Soldier Creeks from April 15th to July 1st.

The water supply on Emerson Creek in 1931 was inadequate to fill more than the first two priorities. As a result several of the ditches on the creek were not opened either because there was no water available for their priority, or the users, in order to save transportation losses, used other ditches.

The diversions not opened in 1931 are as follows:

Taylor	(No water available)
Hill	(No water available)
Old Channel	(Used diversion 11)
Lower Channel	(Used diversion 11)

A large part of the area under the Old Channel and Lower Channel diversions was not irrigated in 1931.

DESCRIPTION OF RESULTS FOR SEASON

The precipitation at Cedarville for the seasonal year commencing September 1st, 1930, and terminating August 31st, 1931, has been compared with the precipitation during preceding seasons of water master service in Surprise Valley in Table 1 of this report. The seasonal precipitation in 1930-31 was about 75.5 per cent of the mean precipitation at Cedarville for the period 1894 to 1930. The figure of 75.5 per cent includes the precipitation of June 8th which was exceptionally heavy at Cedarville but was comparatively light in the Emerson Creek vicinity. It is probable that 65 per cent of the mean precipitation would be a better figure for the seasonal rainfall at Emerson Creek. The distribution and occurrence of the precipitation during the winter was such that very little snow piled up in the mountains.

Table 2 is a tabulation of the water supply of Emerson Creek at the register station, and since there are no diversions above the station, the record represents the total water supply of the stream. The record is shown graphically on the plate at the end of the report. The total water supply in 1927 is also shown to give an indication of normal conditions.

Table 3 is a tabulation of the per cent of allotments delivered to each priority class during the periods shown. The table also gives the per cent of total allotments delivered during each of the indicated periods.

Table 4 is a tabulation of crop yields from typical lands on Emerson Creek in 1931. The crops grown were exceptionally good

when cognizance is taken of the deficient water supply. Several ranches, however, which filed no crop reports had complete crop failures.

There were no new structures installed in 1931, as the past installations were adequate to take care of the 1931 water supply.

Rotation was resorted to on Emerson Creek, in 1931, in order to provide adequate irrigation heads. The Erramouspe, Warren and Murphey ditches, with about equal irrigation allotments, pooled their water on April 20th and used it in rotation on the basis of a three day delivery to each party. Stock water was used continuously by all of the parties.

The latter part of May, the Scott Ranch joined in the rotation, and the schedule was changed to a one day basis to the Erramouspe, Warren and Murphey Ranches and a three day basis to the Scott Ranch in accordance with the amount of water contributed by each party.

The rotation described above was terminated when the flow of the creek dropped to domestic requirements,each party thereafter diverting a continuous flow. On June 30th, the creek became so low that the ditch loss in the Erramouspe Ditch consumed all of the water diverted. In order to make some delivery to the Erramouspe Ranch, the Erramouspe allotment was combined with the Warren allotment in the Warren Ditch which appeared to have considerably less loss. Mr. Warren and Mr. Erramouspe rotated the water between themselves as they needed it.

RECOMMENDATIONS

A structure which would save considerable of the water master's time on Emerson Creek would be a dividing device in the creek at the head of the Scott and Erramouspe Ditches. At present, the division is made by means of loose rock dams and results in an uneven distribution if the flow in the creek fluctuates. An adjustable device to divide the flow proportionally would automatically take care of most of the fluctuation.

FINANCIAL STATEMENT

The funds collected from the water users in the various Water Master Districts to defray the expenses of water master service are placed to the credit of the Water Master District, in which they belong, by the State Treasurer. The funds are then subject to draft by the Division of Water Resources to meet the costs of water master service in the district.

There is submitted on the following page, a statement of the Emerson Creek Water Master Service Fund showing the receipts and disbursements during the 1931 season.

FINANCIAL STATEMENT

EMERSON CREEK WATER DISTRICT FUND

MARCH 1, 1932

RECEIPTS

Contributed by State in 1931	$250.00	
Contributed by Taxpayers (Jan. 1/31 to Mar. 1/32)	236.38	
		$486.38

DISBURSEMENTS
(Jan. 1/31 to Mar. 1/32)

Water Master Compensation	$199.91	
Water Master Travel Expense	68.34	
Cost of Publication of Financial Statement	25.00	
		293.25

BALANCE 193.13

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	T	.00	9.72
Mean 1894-1930	.55	1.01	1.59	1.61	1.81	1.64	1.49	.89	1.12	.68	.28	.21	12.88
1930-31 in Per cent of Total Mean	12.7	4.6	9.5	1.4	5.2	5.1	13.1	4.5	1.9	17.5	.0	.0	75.5

TABLE 2

CONTINUOUS RECORDS OF DAILY DISCHARGE IN CUBIC FEET PER SECOND OF EMERSON CREEK ABOVE ALL DIVERSIONS FOR THE PERIOD APRIL 1st TO JULY 31st, 1931

Day	April	May	June	July	
1	6.80	9.50	2.75	1.90	
2	5.75	8.75	2.60	1.85	
3	5.45	8.75	2.60	1.65	
4	5.45	8.75	2.45	1.75	
5	5.45	8.75	2.45	1.65	
6	5.75	8.75	2.30	1.60	
7	6.05	7.50	2.30	1.55	
8	5.75	6.75	2.30	1.55	
9	5.75	6.45	3.45	1.45	
10	5.75	5.75	2.75	1.35	
11	5.20	5.45	2.60	1.35	
12	4.90	5.45	2.45	1.35	
13	4.65	5.45	2.45	1.35	
14	4.45	5.45	2.60	1.35	
15	4.65	5.45	2.75	1.35	
16	4.90	5.45	2.60	1.35	
17	5.20	5.45	2.60	1.30	
18	4.90	5.15	2.45	1.30	
19	4.90	4.90	2.45	1.20	
20	4.90	4.65	2.30	1.15	
21	5.20	4.65	2.30	1.15	
22	4.90	4.45	2.15	1.15	
23	4.90	4.00	2.05	1.15	
24	4.90	3.80	1.95	1.20	
25	4.90	3.80	1.85	1.15	
26	4.90	3.60	1.75	1.10	
27	6.95	3.45	1.75	1.10	
28	7.50	3.45	1.85	1.10	
29	8.10	3.25	1.95	1.10	
30	8.90	3.00	1.95	1.10	
31	---	2.75	---	1.10	
Total Sec. Feet Days	167.75	172.75	70.75	41.95	122 Day Period
Mean Sec. Feet	5.59	5.57	2.36	1.35	3.71
Maximum Sec. Feet	8.90	9.50	3.45	1.90	9.50
Minimum Sec. Feet	4.45	2.75	1.75	1.10	1.10
Total Acre Feet	333	343	140	83.2	899

TABLE 3

WATER DELIVERIES ON EMERSON CREEK COMPARED WITH ALLOTMENTS - 1931 SEASON

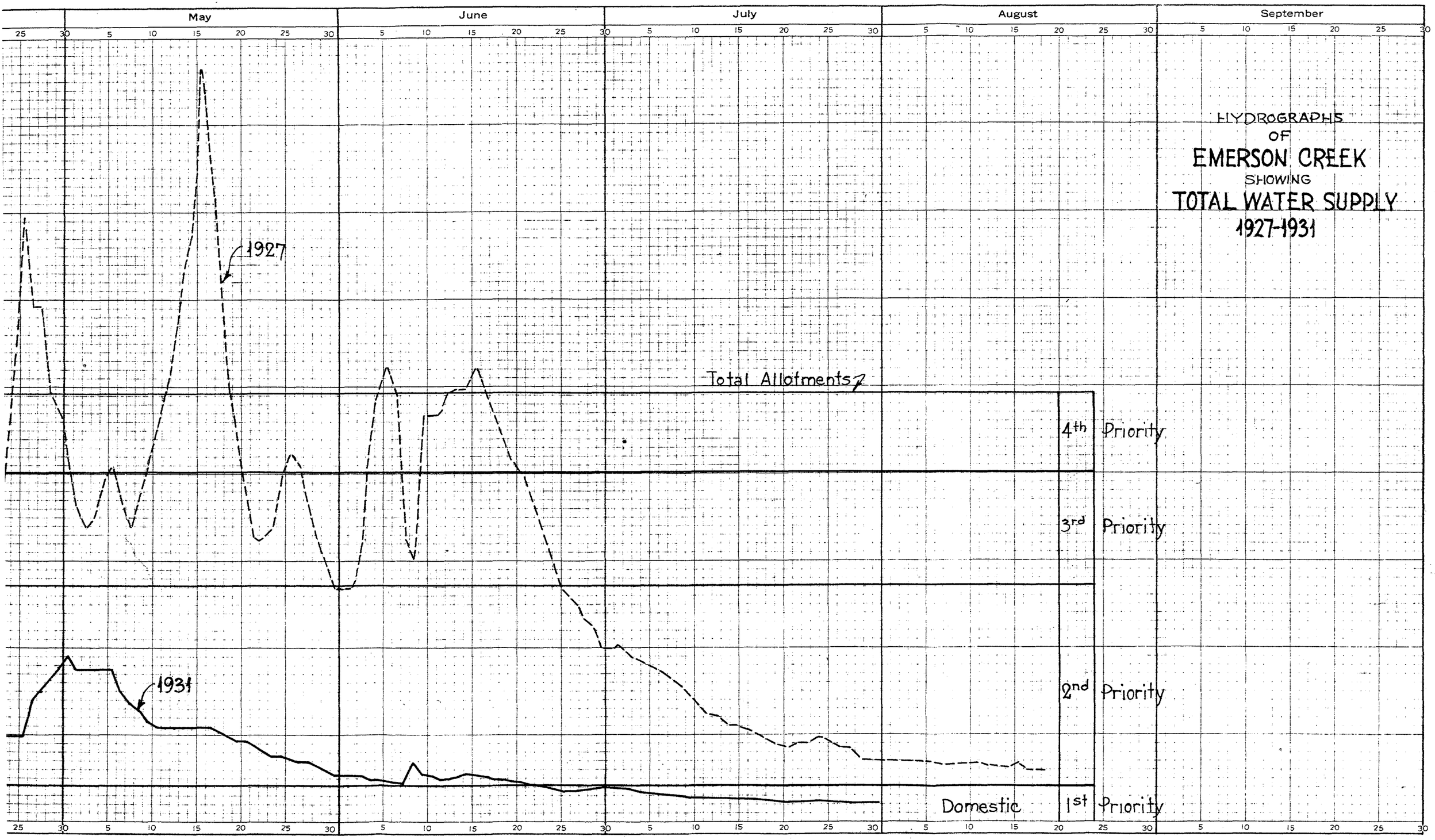
Period	Per Cent of Allotment Delivered				Total Deliveries c.f.s.	Per Cent of Total Allotment Delivered (24.65 c.f.s.)	Continuous Flow Above All Diversions c.f.s.	Per Cent Channel Loss
	1st Priority (2.05 c.f.s.)	2nd Priority (11.55 c.f.s.)	3rd Priority (6.50 c.f.s.)	4th Priority (4.55 c.f.s.)				
4-1 to 4-10	100	28	0	0	5.30	22	5.80	9
4-10 to 4-20	100	20	0	0	4.36	18	4.86	10
4-21 to 4-30	100	31	0	0	5.62	23	6.12	8
5-1 to 5-10	100	47	0	0	7.47	30	7.97	6
5-11 to 5-20	100	24	0	0	4.78	19	5.28	9
5-21 to 5-30	100	10	0	0	3.24	13	3.74	13
5-31 to 6-9	95	1	0	0	2.10	9	2.60	19
6-10 to 6-19	95	1	0	0	2.07	8	2.57	19
6-20 to 6-29	73	0	0	0	1.49	6	1.99	25
6-30 to 7-9	59	0	0	0	1.21	5	1.71	29
7-10 to 7-19	40	0	0	0	.82	3	1.32	38
7-20 to 7-29	31	0	0	0	.64	3	1.14	44
Seasonal					3.26	13	3.76	13

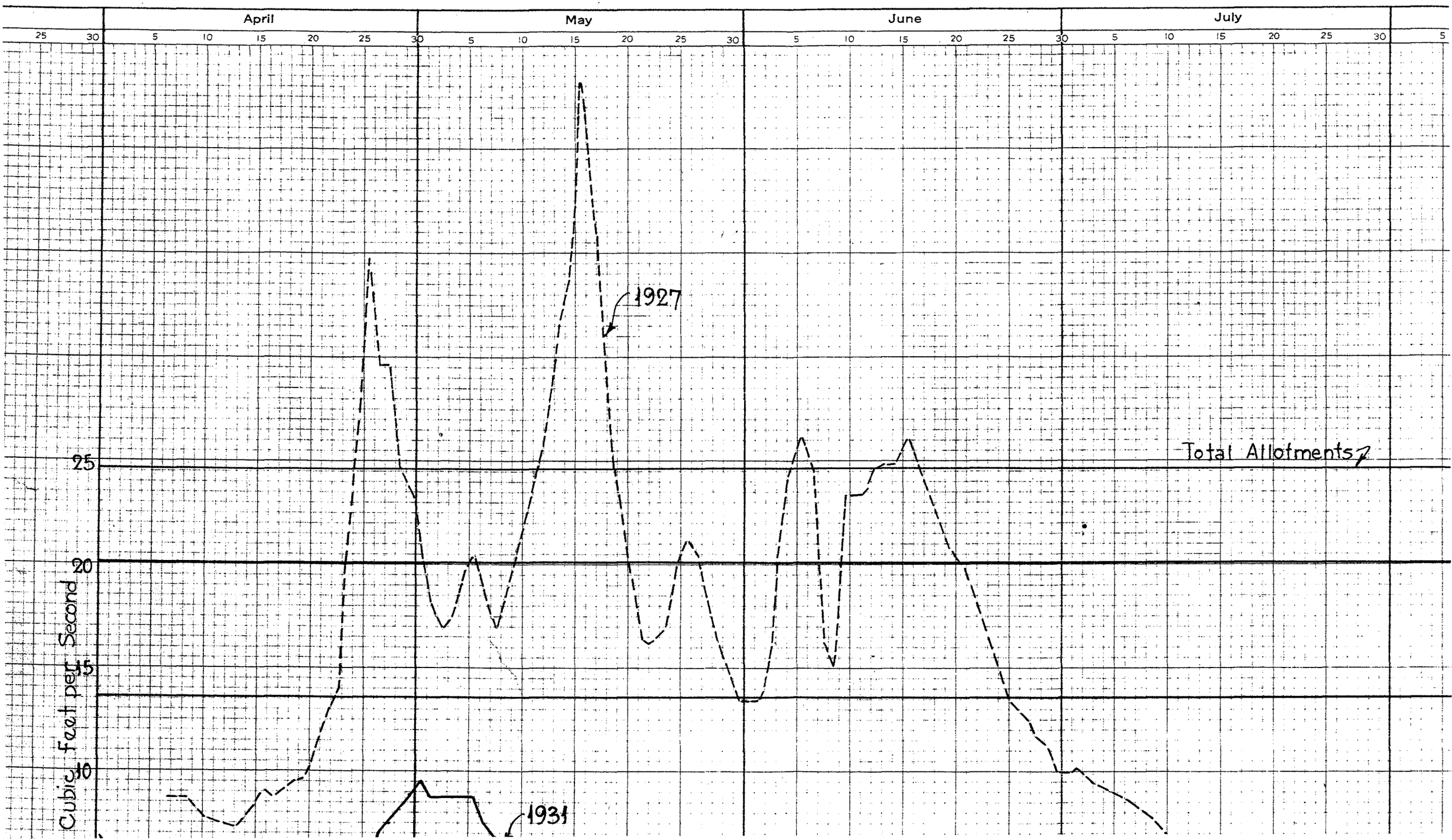
TABLE 4

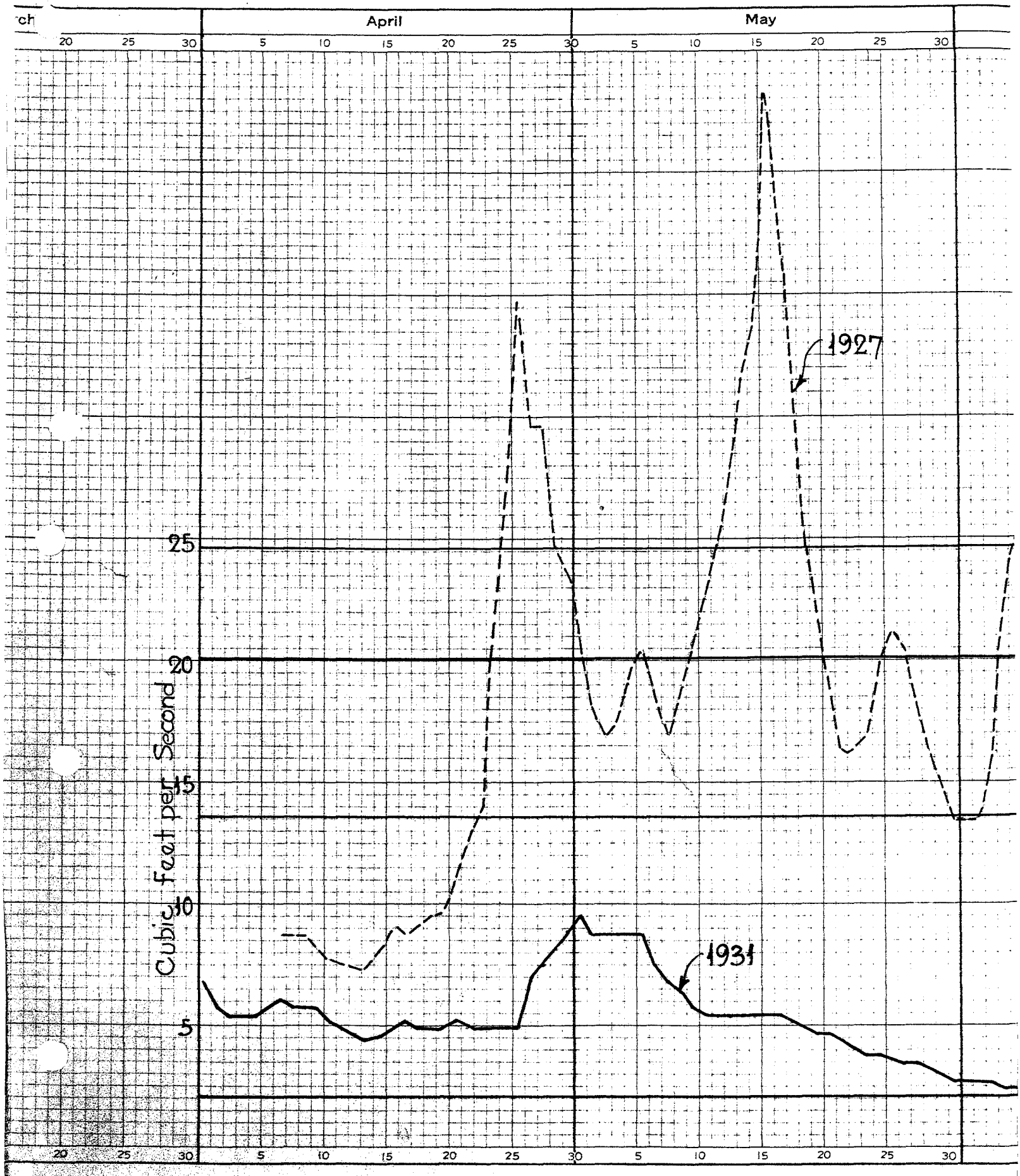
ESTIMATED CROP YIELDS ON TYPICAL LANDS
IRRIGATED FROM EMERSON CREEK - 1931

Owner	Crop	Acres	Total Yield		Yield per Acre	
			Sacks	Tons	Sacks	Tons
W. F. Cockrell	Alfalfa Hay	30.0		60		2.0
	Meadow Hay	155.0		220		1.4
	Barley	5.0	50		10	
	Wheat	10.0	100		10	
	Garden	1.0			Fair	
Ernest E. Cook	Alfalfa Hay	45.0		115		2.6
	Meadow Hay	60.0		105		1.8
John Erramouspe	Alfalfa Hay	96.0		192		2.0
	Meadow Hay	33.4		35		1.0
	Garden	0.8			Fair	
W. G. Warren	Alfalfa Hay	15.0		30		2.0
	Barley	30.0	311		10	
	Wheat	27.0	197		7	
	Garden	1.2			Good	

PLATE


HYDROGRAPHS
OF
EMERSON CREEK
SHOWING
TOTAL WATER SUPPLY
1927-1931
May
June
July
August
September
1927
1931
Total Allotments
4th Priority
3rd Priority
2nd Priority
1st Priority
Domestic


April
May
June
July
25
30
5
10
15
20
25
30
5
10
15
20
25
30
5
10
15
20
25
30
5
10
15
20
25
30
5
1927
1931
Total Allotments
25
20
15
10
Cubic Feet per Second


ch
April
May
20
25
30
5
10
15
20
25
30
5
10
15
20
25
30
1927
1931
25
20
15
10
5
Cubic Feet per Second