DEPARTMENT OF PUBLIC WORKS

STATE OF CALIFORNIA

REPORTS OF THE

DIVISION OF WATER RESOURCES

EDWARD HYATT, State Engineer

REPORT ON

WATER MASTER SERVICE

ON

OWL CREEK

MODOC COUNTY, CALIFORNIA

FOR SEASON OF 1931

By Leslie C. Jopson, Modoc County Water Master

Sacramento, California
February, 1932

TABLE OF CONTENTS

Page

LETTER OF TRANSMITTAL

ORGANIZATION

GENERAL DESCRIPTION 1

DISCUSSION OF RESULTS FOR SEASON 3

RECOMMENDATIONS 5

FINANCIAL REPORT 6

TABLES:

1. Precipitation Data 8

2. Continuous Records of Daily Discharge in Cubic Feet per Second of Owl Creek at Register Station for the period March 27th to August 8th, 1931 9

3. Water Deliveries on Owl Creek Compared with allotments - 1931 Season 10

4. Crop production on Typical Lands Irrigated from Owl Creek, 1931 Season 11

PLATE:

1. Hydrographs of Owl Creek showing Water Supply above all Diversions in 1927 and 1931 13

STATE OF CALIFORNIA
Department of Public Works
SACRAMENTO

DIVISION OF WATER RESOURCES
401 PUBLIC WORKS BUILDING

EDWARD HYATT, STATE ENGINEER
CHIEF OF DIVISION

February 10, 1932

Mr. Harold Conkling
Deputy State Engineer
Sacramento, California

Dear Sir:

Attention: Mr. Gordon Zander, Supervising Hydraulic Engineer

There is transmitted herewith a report covering the water distribution work of the water master in the Owl Creek Water Master District, Modoc County, California, during the period from March 27th to August 8th, 1931.

The report describes the methods and practices followed in the distribution of the waters of Owl Creek in accordance with the provisions of the decree in the case of C. E. Cummins, et al. vs. Wiley Allen, et al, and presents the results obtained under this distribution.

Respectfully submitted,

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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 in the Owl Creek Water Master District during the 1931 season in accordance with the provisions of the decree in the case of C. E. Cummins, et al. vs. Wiley Allen, et al.

The field work was commenced by the writer on March 27th and was terminated for the season on August 8th. Mr. Heath Stanley was employed on a part time daily basis to assist as water master on Owl, Cedar, Emerson and Soldier Creeks from April 15th to July 1st.

The water supply of Owl Creek was so low in 1931 that a number of the diversions were not opened, some of them because there was no water available for use under their priorities and others because the ditch owners arranged to receive their water through other ditches to prevent all possible loss in transportation. The diversions not opened in 1931 were as follows:

Allen-Arreche	(No water available)
St. John	(No water available)
Reeder	(No user)
Chase	(Water taken through Wade Ditch)
Cummins Lower South	(Used only as a rediversion)
Cummins Lower North	(Used only as a rediversion)
Old Channel	(Used only as a rediversion)
King	(Used only as a rediversion)
Williams	(Used only as a rediversion)

The five latter ditches received a limited amount of the water diverted by the McClintock and the Cummins Upper South Ditches and returned by them to the creek channel near the heads of the ditches named. The excessive loss in the creek channel below the Cummins Upper South Ditch was avoided in this way.

There was insufficient water available in 1931 to supply even the

first few priorities with their full head for more than a short irrigation season. Approximately fifty per cent of the rights did not receive enough water to materially benefit them.

DISCUSSION 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 1931. This figure of 75.5 per cent is higher than the average in the Valley due to the effect of a cloudburst which occurred in the vicinity of Cedarville on June 8th. This cloudburst did not strike with as much force in the vicinity of Owl Creek and it is estimated that a figure of 65 per cent of the mean precipitation would be nearer right for the year in that vicinity. The distribution and occurrence of the precipitation was such that very little snow piled up in the mountains during the winter.

Table 2 is a tabulation of the water supply of Owl Creek at the register station. In 1931 there were no diversions opened above this point so that Table 2 also represents the total water supply. Plate 1 shows graphically the daily run-off of the Creek as tabulated in Table 2. The plate also shows the water supply of the Creek in 1927 as a criterion of normal flow. The water allotments from the Creek are also shown.

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 Owl Creek in 1931. The crops grown were sub-normal both in yield and in acreage. There having been insufficient water to mature even the crops on the limited areas to which water was applied.

A new staff gage was installed on Owl Creek in 1931 to replace the old one which was dislodged during the sudden rise of the creek on June 8th. The new gage was placed in the same location as the former one and was set to read as near as was possible to the old gage readings.

The Cummins Land and Livestock Co. diverted their water through the McClintock Ditch the same as was done in 1930.

The users on the Ennis-Arreche Ditch pooled their water and rotated the use of it throughout the irrigation season.

The users on the Wade and on the Chase Ditches pooled their water and used only the Wade Ditch to conserve water. The water was rotated between the parties on the ditches.

The owner of the Cook Ditch secured the permission of the operator of the McClintock Ranch to use a limited amount of the McClintock water to irrigate a small orchard the latter part of June. The water was used after the McClintock allotment became too small to irrigate meadow to advantage.

The special rights set forth in the decree to be effective in July and August received no water in 1931.

RECOMMENDATIONS

The main diversion systems on Owl Creek have all been equipped with Parshall Measuring Flumes and the quantities of water diverted at any time is readily ascertainable. However, the headgates in some cases are very unsatisfactory and should be replaced, also some of the diversion dams are not effective without constant manipulation. A considerable saving in the water master's time could be effected if the headgates and dams were properly maintained.

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 Owl Creek Water Master Service Fund showing the receipts and disbursements during the 1931 season.

FINANCIAL STATEMENT

OWL CREEK WATER DISTRICT FUND

MARCH 1, 1932

RECEIPTS

Balance on December 31, 1930	$229.35	
Contributed by State in 1931	250.00	
Contributed by Taxpayers (Jan. 1/31 to Mar. 1/32)	256.53	
		$735.88

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

Water Master Compensation	217.30	
Water Master Travel Expense	85.61	
Cost of Publication of Financial Statement	25.00	
Contingencies	17.12	
		345.03

BALANCE 390.85

TABLES

TABLE 1

PRECIPITATION
Cedarville, California

Season	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	August	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 Owl Creek at Register Station for the period March 27th to August 5th, 1931

Day	March	April	May	June	July	August	
1		11.8	19.5	8.40	3.50	1.40	
2		9.00	22.3	8.25	3.45	1.40	
3		8.00	24.5	7.60	3.20	1.30	
4		7.00	24.5	6.50	3.00	1.30	
5		6.00	27.9	6.30	3.00	1.30	
6		8.00	29.8	6.00	3.00	1.30	
7		9.25	24.6	5.50	3.00	1.30	
8		9.25	23.8	*30.0	3.00	1.25	
9		9.25	23.8	12.2	2.80		
10	N	10.0	24.5	11.5	2.80	No	
11	O	9.25	24.5	10.8	2.65		
12	R	8.50	25.1	10.1	2.65	R	
13	E	7.90	25.6	9.50	2.65	E	
14	C	7.60	22.9	9.30	2.50	C	
15	O	7.90	21.7	8.90	2.50	O	
16	R	10.0	20.6	8.50	2.40	R	
17	D	11.8	18.5	8.00	2.25	D	
18		11.3	16.4	7.50	2.15		
19		11.3	15.0	7.20	2.00		
20		12.2	14.0	6.90	1.90		
21		15.0	13.5	6.50	1.90		
22		13.1	13.5	6.00	1.90		
23		12.6	13.5	5.40	1.90		
24		12.6	13.1	4.80	2.00		
25		12.2	12.7	4.20	1.90		
26		11.3	12.2	3.85	1.80		
27	5.50	14.0	11.4	3.85	1.70		
28	5.00	16.4	11.0	3.85	1.60		
29	5.00	17.5	10.5	3.75	1.50		
30	5.75	17.5	9.70	3.65	1.40		
31	8.60	--	9.25	--	1.40		
Total Second Ft. Days	**29.85	327.50	579.85	234.80	73.35	*** 10.55	135 Day Period
Mean Sec. Ft.	5.97	10.92	18.70	7.83	2.37	1.32	9.30
Max. Sec. Ft.	8.60	17.5	29.8	30.0	3.50	1.40	30.0
Min. Sec. Ft.	5.00	6.00	9.25	3.65	1.40	1.25	1.25
Total Acre Ft.	59.2	649	1150	466	145	20.9	2490

No water was diverted above register station in 1931

* Estimated
** Five day period
*** Eight day period

TABLE 3

WATER DELIVERIES ON OWL CREEK COMPARED
WITH ALLOTMENTS - 1931 SEASON

Priority	4/1 to 4/15	4/16 to 4/30	5/1 to 5/15	5/16 to 5/31	6/1 to 6/15	6/16 to 6/30	7/1 to 7/15	7/16 to 7/31	8/1 to 8/8
1	100	100	100	100	100	100	100	90	90
2	100	100	100	100	100	100	100	90	65
3	100	100	100	100	100	100	100	60	2
4	100	100	100	100	100	100	66	1	0
4-A	0	0	100	10	0	0	0	0	0
5	100	100	100	100	100	100	8	0	0
6	100	100	100	100	100	100	4	0	0
7	0	0	0	0	0	0	0	0	0
8	100	100	100	90	90	35	*0	**0	***0
9	0	63	100	100	40	0	0	0	0
10	16	50	100	65	18	0	0	0	0
11	0	37	100	30	12	0	0	0	0
12	0	6	42	3	2	0	0	0	0
13	0	0	85	20	0	0	0	0	0
14	0	0	80	0	0	0	0	0	0
15	0	0	40	0	0	0	0	0	0
16	0	0	20	0	0	0	0	0	0
17	0	0	20	0	0	0	0	0	0
18	0	0	20	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0
****22	0	0	0	0	0	0	0	0	0
Total Deliveries in c.f.s. &	7.72	11.41	21.92	11.95	8.55	4.65	2.18	1.27	0.82
Per cent of allotments delivered	19	28	54	30	21	12	5	3	2
Combined Flow above all Diversions	8.58	13.25	24.33	13.43	10.06	5.60	2.91	1.86	1.32
Channel Loss in per cent of Total Flow	10	14	10	11	15	17	25	32	38

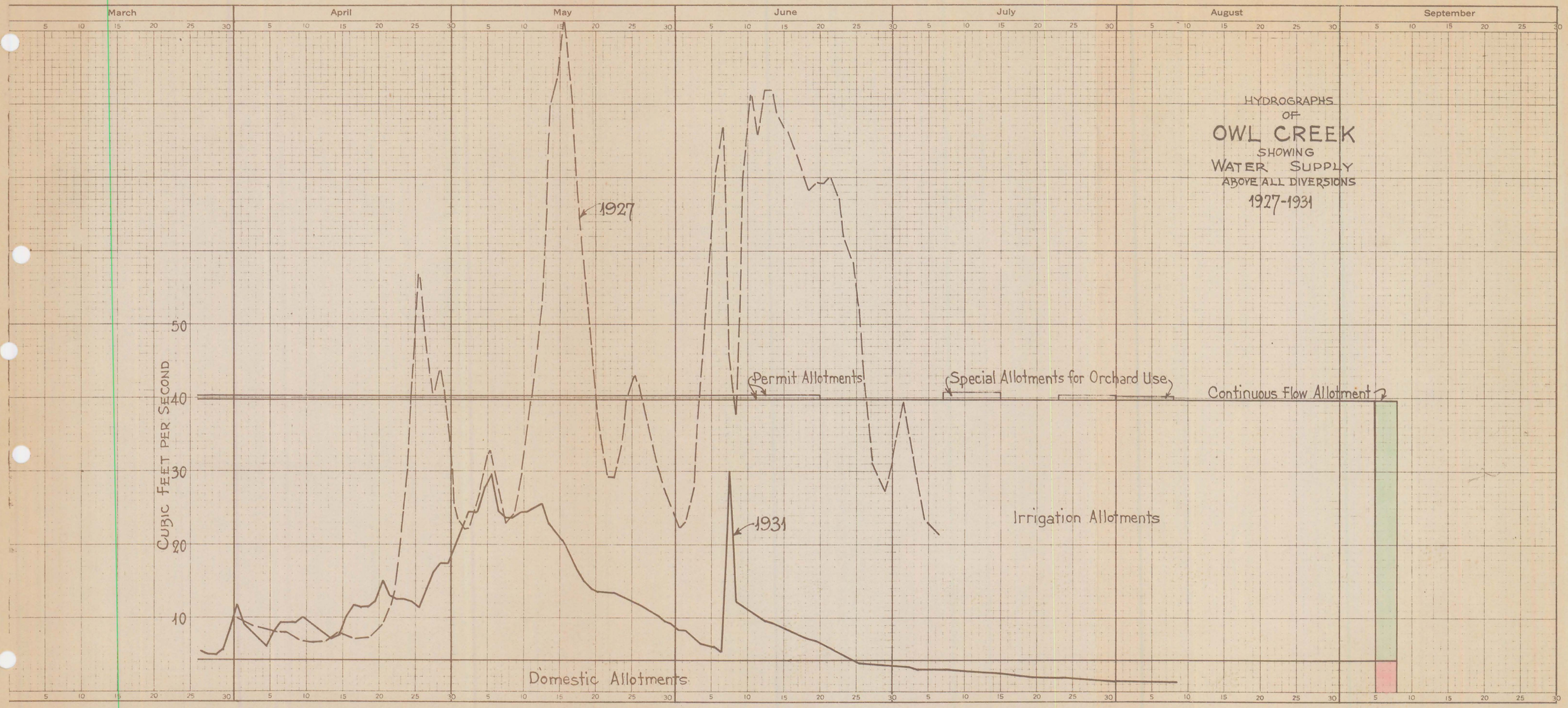
* 1.00 c.f.s. July 8 to 15, Inclusive
** 0.51 c.f.s. July 24 to 31, Inclusive
*** 0.44 c.f.s. August 1 to 8, Inclusive
**** Permit right of 0.54 c.f.s. to Walter Malitz - March 20th to June 20th. 22nd priority indicates water diverted under ****until June 30; after June 30 it indicates water diverted under special rights shown above.
Total allotment outside of special and permit rights 39.75 c.f.s.

TABLE 4

CROP PRODUCTION ON TYPICAL LANDS
IRRIGATED FROM OWL CREEK - 1931 SEASON

Owner	Crop	Acres	Total Yield		Yield per acre	
			Sacks	Tons	Sacks	Tons
Lyle Cook	Meadow Hay	350		200		0.6
	Orchard			Poor		
J. W. Heryford	Meadow Hay	220		330		1.5
	Alfalfa Seed	12	2300#		190#	
	Pasture			Poor		
W. Malitz	Alfalfa Hay	10		10		1.0
	Orchard			Poor		
	Garden			Fair	(Pumped water to mature it)	
K. Perry	Alfalfa Hay	20		10		0.5
	Meadow Hay	16		20		1.3

PLATE


HYDROGRAPHS
OF
OWL CREEK
SHOWING
WATER SUPPLY
ABOVE ALL DIVERSIONS
1927-1931
March
April
May
June
July
August
September
CUBIC FEET PER SECOND
50
40
30
20
10
1927
1931
Permit Allotments
Special Allotments for Orchard Use
Continuous Flow Allotment
Irrigation Allotments
Domestic Allotments