DEPARTMENT OF PUBLIC WORKS

STATE OF CALIFORNIA

REPORTS OF THE

DIVISION OF WATER RESOURCES

EDWARD HYATT, State Engineer

oOo

REPORT ON WATER MASTER SERVICE ON MILLCREEK AND TRIBUTARIES

MODOC COUNTY, CALIFORNIA

FOR SEASON OF 1932

oOo

By Leslie C. Jopson, Modoc County Water Master

Sacramento, California

March, 1933

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STATE OF CALIFORNIA

Department of Public Works

SACRAMENTO

DIVISION OF WATER RESOURCES
401 PUBLIC WORKS BUILDING

EDWARD HYATT, STATE ENGINEER
CHIEF OF DIVISION

March 1, 1933

Mr. Harold Conkling,
Deputy State Engineer,
Sacramento, California.

Attention: Mr. Gordon Zander,
Supervising Hydraulic Engineer.

Dear Sir:

There is herewith transmitted a report covering the water distribution work on Mill Creek and tributaries, Modoc County, California, during the period April 1st to September 27th, 1932.

The report describes the methods and practices followed in the distribution of the waters of Mill Creek and tributaries in accordance with the provisions of the decree in the case of George M. Warrens, vs J. A. Wimer, et al., and presents the results obtained under this distribution.

Respectfully submitted,

_____
Modoc County 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	Modoc County Water Master
Heath Stanley	Deputy Water Master

GENERAL DESCRIPTION OF WORK

Water master service was conducted on Mill Creek and Tributaries in 1932 in accordance with the provisions of the decree in the case of George M. Warrens vs. J. A. Wimer, et al. This decree was signed on December 19, 1931 after the close of the 1931 season. On December 30, 1931 an order was entered by the State Engineer creating the Mill Creek Water Master District.

Water master service was commenced by the writer on April 1st and terminated on September 27, 1932. Mr. Heath Stanley was employed on a part time daily basis as a deputy water master on Mill, Emerson, Owl, Cedar and Soldier Creeks during the months of April and May.

In 1932 there was a considerable surplus of water on Mill Creek during April and May and on Rutherford Creek during May. This water flowed into Upper Alkali Lake. Brown Creek had a very satisfactory supply during the early part of the season but failed rapidly in June and was dry shortly after July 1. The 1932 season was the first in four years in which stock water was available in Rutherford Creek below Rutherford Swamp.

Due to the ample water supply on Mill and Rutherford Creeks all the ranches were adequately irrigated and as a result the crops were quite satisfactory.

There was some interference with the water distribution on Rutherford Creek but after warning several of the parties this ceased and the work went along very smoothly.

DISCUSSION OF RESULTS FOR SEASON

Table 1 contains the monthly and seasonal precipitation at Cedarville for the 1931-32 season. This precipitation has been compared to that of the preceding seasons of water master service in Surprise Valley. The seasonal mean for 1931-32 was 110.7 per cent of the mean for the period 1894-1931. The exceedingly dry spring and summer following the wet winter lowered the seasonal precipitation below what might have been expected.

Table 2 is a tabulation of the water supply of Mill Creek above all diversion. Plate 1 at the end of this report is a graphical presentation of this water supply compared to that of 1929.

Table 3 is a tabulation of the net available water supply of Rutherford Creek and its tributaries, including Brown Creek, and the water developed in Rutherford Swamp. Plate 2 at the end of this report is a graphical comparison of this water supply and the supply in 1929.

Table 4 is a tabulation of the per cent of allotments delivered to each priority class on Mill Creek during the periods indicated. The table also gives the per cent of total allotments delivered during these periods.

Table 5 is a tabulation of the per cent of allotments delivered to each priority class on Rutherford Creek during the periods shown. The amount of water developed in Rutherford Swamp and the per cent of full allotments delivered on Brown Creek and Lower Rutherford Creek is also shown.

Table 6 shows the crop yield on typical lands irrigated from Mill Creek and Tributaries. The returns in general were quite satisfactory.

At the start of the season a log was placed in the West Channel of Mill Creek at the junction with the Wimer Branch to cause a more equitable division of the water at this point. Double head-gates were installed in several of the small town ditches during the season.

RECOMMENDATIONS

A number of the weirs installed in the ditches should be replaced as soon as the material becomes available by Parshall Flumes.

The Flumes will give much better service and require less repairing.

FINANCIAL STATEMENT

The funds collected from the water users in the various water master districts are placed to the credit of the various Water Master Districts Funds by the State Treasurer. The State contributes an amount to the funds 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 the Water Master Service.

FINANCIAL STATEMENT

MILL CREEK WATER DISTRICT FUND

March 1, 1933

RECEIPTS

Contributed by State	$350.00	
Contributed by Taxpayers (Mar. 1/32 to Mar. 1/33)	251.71	$601.71

DISBURSEMENTS

Water Master Compensation	$205.38	
Water Master Travel Expense	121.90	
Cost of Publication of Financial Statement	32.50	359.78

BALANCE $241.93

T A B L E S

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
Mean 1894 to 1932	0.55	1.01	1.59	1.61	1.76	1.55	1.45	.90	1.03	.65	.24	.18	12.52
1931-32 in per cent of total mean	2.6	25.6	7.8	14.8	17.8	5.6	15.7	14.9	4.2	1.8	.0	.0	110.7

TABLE 2

CONTINUOUS RECORDS OF DAILY DISCHARGE IN CUBIC FEET PER SECOND OF MILL CREEK ABOVE DIVERSIONS FOR THE PERIOD APRIL 12 to SEPTEMBER 27, 1932.

Day	Apr.	May	June	July	Aug.	Sept.	
1		47.0	35.0	12.9	3.65	2.25	
2	No	42.0	40.0	11.8	3.50	2.25	
3		42.0	44.0	10.9	3.50	2.15	
4	Record	39.0	45.0	10.4	3.40	2.15	
5		39.0	39.0	9.65	3.25	2.05	
6		45.0	35.0	9.30	3.25	2.05	
7	No	50.0	30.0	8.60	3.25	2.05	
8		59.0	30.0	8.60	3.10	2.15	
9	Record	54.0	33.0	8.25	3.25	2.15	
10		59.0	39.0	7.95	3.25	2.15	
11		60.0	40.0	7.95	3.25	2.15	
12	72.0	69.0	42.0	7.50	3.10	2.05	
13	80.0	72.0	42.0	7.45	3.00	*2.05	
14	74.0	70.0	44.0	7.45	3.00	*1.90	
15	64.0	75.0	42.0	7.15	2.85	*1.90	
16	67.0	75.0	39.0	6.55	2.85	1.90	
17	64.0	74.0	33.0	6.30	2.70	1.90	
18	70.0	83.0	30.0	7.15	2.70	1.90	
19	69.0	77.0	28.0	6.80	2.70	1.90	
20	57.0	67.0	25.0	5.85	2.70	1.90	
21	44.0	55.0	26.0	5.45	2.70	1.85	
22	37.0	47.0	30.0	5.05	2.70	1.80	
23	*39.0	44.0	28.0	4.85	2.60	1.80	
24	*41.0	40.0	26.0	4.65	2.50	1.80	
25	42.0	39.0	26.0	4.30	2.50	1.80	
26	35.0	39.0	22.0	4.00	2.50	1.80	
27	39.0	44.0	20.0	*4.00	2.50	1.80	
28	55.0	42.0	18.4	4.00	2.50		
29	64.0	40.0	16.0	4.00	2.50	No	
30	55.0	42.0	15.3	3.80	2.60	Record	
31	--	40.0	--	3.80	2.50		
Total Sec. Feet Days	**1068.0	1670.0	962.7	216.40	90.35	***53.6	169 Day Period
Mean Sec. Feet	56.2	53.9	32.0	6.98	2.91	1.99	24.0
Maximum Sec. Feet	80.0	83.0	45.0	12.9	3.65	2.25	83.0
Minimum Sec. Feet	35.0	39.0	15.3	3.80	2.50	1.80	1.80
Total Ac. Feet	2120	3310	1910	428	178	104	8050

* Discharge Estimated
** 19 Day Period
*** 27 Day Period

TABLE 3

ESTIMATED NET AVAILABLE WATER SUPPLY IN CUBIC FEET PER SECOND OF RUTHERFORD CREEK AND TRIBUTARIES FOR THE PERIOD APRIL 1 to AUGUST 31, 1932

Day	Apr.	May	June	July	Aug.	Sept.	
1	5.99	17.26	11.51	3.00	1.01		
2	6.14	17.59	10.00	2.54	.93		
3	6.29	17.92	8.65	2.44	.86		
4	6.44	18.25	8.62	2.34	.83		
5	6.59	18.58	8.59	2.24	.80		
6	6.74	18.91	8.57	2.14	.78		
7	6.88	19.24	8.55	2.05	.75		
8	7.13	19.19	8.53	2.00	.72		
9	7.38	19.13	8.51	1.95	.70		
10	7.63	19.08	8.49	1.90	.68		
11	7.88	19.02	8.47	1.85	.65		
12	8.13	18.97	8.44	1.80	.62		
13	8.38	18.91	8.41	1.75	.59		
14	8.63	18.75	8.38	1.78	.56		
15	8.88	18.55	8.35	1.81	.53		
16	8.86	18.30	8.33	1.84	.51		
17	8.84	18.00	7.84	1.87	.49		
18	8.82	17.70	7.35	1.90	.49		
19	8.80	17.30	6.86	1.94	.49	NO	
20	8.78	16.90	6.37	1.87	.50		
21	8.76	16.00	5.88	1.80	.50		
22	8.74	15.10	5.39	1.74	.50		
23	8.72	14.30	4.90	1.68	.51	RECORD	
24	8.70	13.50	4.73	1.62	.51		
25	8.68	12.70	4.56	1.56	.54		
26	10.11	11.90	4.39	1.50	.57		
27	11.54	12.20	4.24	1.44	.60		
28	12.97	12.45	4.06	1.36	.63		
29	14.40	12.65	3.86	1.27	.66		
30	15.83	12.80	3.66	1.18	.70		
31	--	13.01	--	1.09	.74		
Total Sec. Feet Days	261.66	514.16	214.49	57.25	19.95		153 Day Period
Mean Sec. Feet	8.72	16.59	7.15	1.85	.64		9.98
Maximum Sec. Feet	15.83	19.24	11.51	3.00	1.01		19.24
Minimum Sec. Feet	5.99	11.90	3.66	1.09	.49		.49
Total Acre Feet	519	1020	425	114	39.6		2120

TABLE 4

WATER DELIVERIES ON MILL CREEK COMPARED TO ALLOTMENTS
1932 SEASON

Period	Per Cent of Allotment Delivered					Average Net Available Water Supply c.f.s.	Channel Loss c.f.s.	Average Total Water Supply c.f.s.
	1st Priority 3.02 c.f.s.	2nd Priority 1.50 c.f.s.	3rd Priority 20.45 c.f.s.	4th Priority 3.47 c.f.s.	Total 27.44 c.f.s.			
4/12 to 4/21	100	100	100	100	100	64.8	1.3	66.1
4/22 to 5/1	100	100	100	100	100	46.4	+ 1.0	45.4
5/2 to 5/11	100	100	100	100	100	51.9	+ 3.0	48.9
5/12 to 5/21	100	100	100	100	100	75.7	+ 4.0	71.7
5/22 to 5/31	100	100	100	100	100	47.2	+ 5.5	41.7
6/1 to 6/10	100	100	100	100	100	43.0	+ 6.0	37.0
6/11 to 6/20	100	100	100	100	100	39.0	+ 2.5	36.5
6/21 to 6/30	100	100	99	0	87	23.8	+ 1.0	22.8
7/1 to 7/10	100	100	28	0	34	9.32	0.5	9.82
7/11 to 7/20	100	100	15	0	24	6.51	0.5	7.01
7/21 to 7/30	100	100	2	0	14	3.89	0.5	4.39
7/31 to 8/9	100	57	0	0	10	2.87	0.5	3.37
8/10 to 8/19	100	33	0	0	9	2.52	0.4	2.92
8/20 to 8/29	100	10	0	0	8	2.17	0.4	2.57
8/30 to 9/8	94	0	0	0	7	1.90	0.3	2.20
9/9 to 9/18	83	0	0	0	6	1.67	0.3	1.97
9/19 to 9/27	71	0	0	0	5	1.43	0.3	1.73

TABLE 5

WATER DELIVERIES ON RUTHERFORD CREEK COMPARED WITH ALLOTMENTS - 1932

Period	Per Cent of Allotment Delivered											
	1st Priority 0.21 c.f.s.	2nd Priority 0.10 c.f.s.	3rd Priority 0.20 c.f.s.	4th Priority 0.11 c.f.s.	5th Priority 1.18 c.f.s.	6th Priority 0.20 c.f.s.	7th Priority 4.95 c.f.s.	Total 6.95 c.f.s.	*Brown Creek 1.60 c.f.s.	**Prior Rights Below Swamp 0.50 c.f.s.	***Developed Water in c.f.s.	Net Available Water Supply c.f.s.
4/1 to 4/10	100	100	100	100	100	15	30	49	180	100	0.40	6.72
4/11 to 4/20	100	100	100	100	100	100	50	65	200	100	.40	8.60
4/21 to 4/30	100	100	100	100	100	100	86	90	230	100	.40	10.85
5/1 to 5/10	100	100	100	100	100	100	148	100	290	100	.50	18.52
5/11 to 5/20	100	100	100	100	100	100	180	100	200	100	.50	18.24
5/21 to 5/30	100	100	100	100	100	100	140	100	100	100	.50	13.36
5/31 to 6/9	100	100	100	100	100	100	120	100	50	100	.50	9.45
6/10 to 6/19	100	100	100	100	100	100	91	94	33	100	.50	8.09
6/20 to 6/29	100	100	100	100	97	65	27	54	12	80	.50	4.84
6/30 to 7/9	100	100	100	100	30	0	16	26	0	60	.35	2.44
7/10 to 7/19	100	100	100	100	18	0	7	19	0	50	.30	1.84
7/20 to 7/29	100	100	75	0	3	0	11	15	0	50	.30	1.58
7/30 to 8/8	100	85	15	0	0	0	6	9	0	10	.30	.90
8/9 to 8/18	100	55	0	0	0	0	2	4	0	0	.30	.58
8/19 to 8/28	100	20	0	0	0	0	2	3	0	0	.30	.54

*Brown Creek decreed rights = 0.80 c.f.s. but due to limited season 1.60 c.f.s. allowed as maximum rate of diversion

**0.25 c.f.s. for stock water and 0.25 c.f.s. for garden on Hay, Daniels and Darst ranches

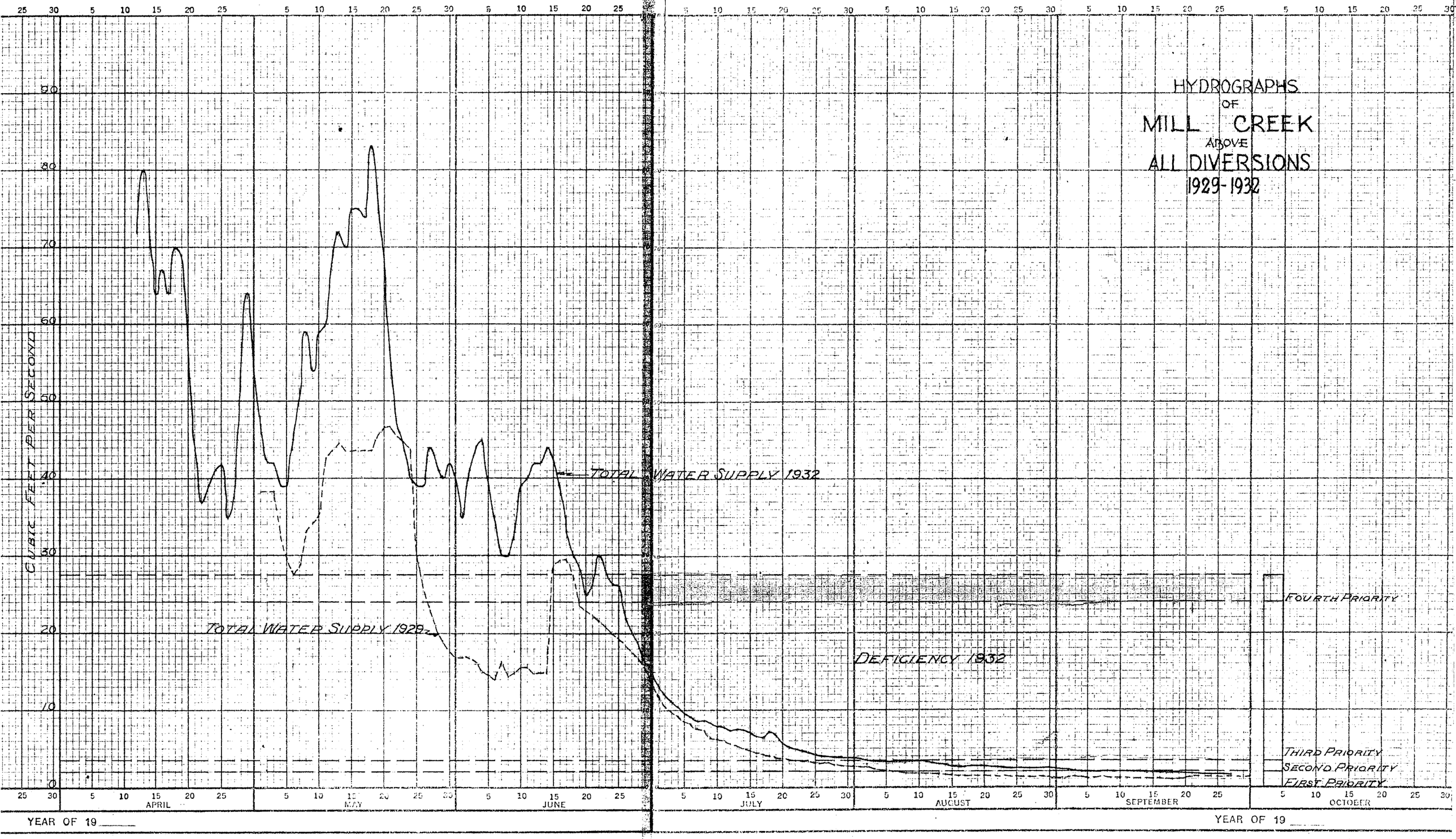
***Bennett Collecting Ditch and Hays Collecting Ditch

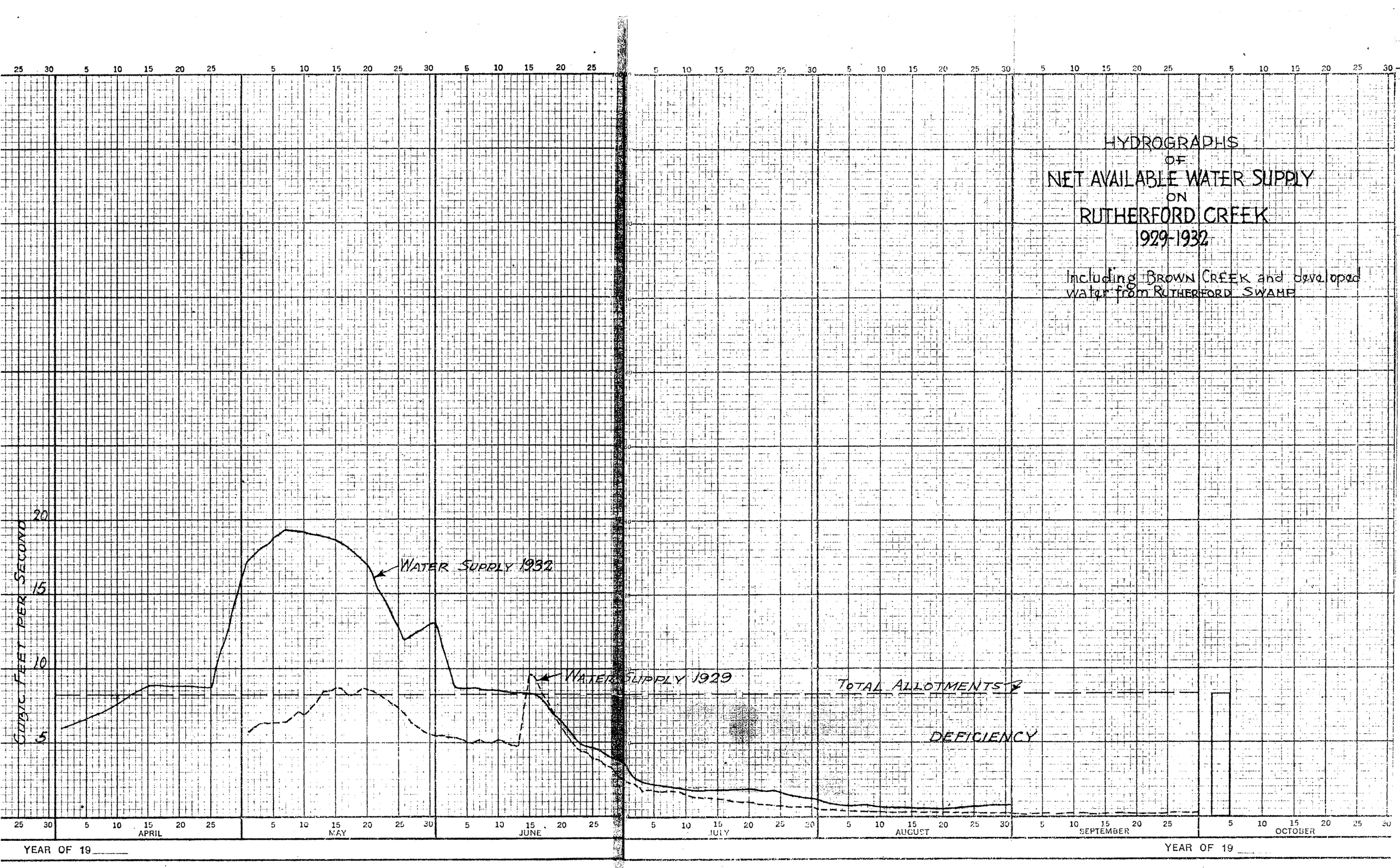
TABLE 6

ESTIMATED CROP YIELDS ON TYPICAL LANDS IRRIGATED FROM MILL AND RUTHERFORD CREEKS - 1932

Owner	Crop	Acres	Total Yield		Yield Per Acre	
			Tons	Sacks	Tons	Sacks
David Baty	Meadow Hay	400.0	667		1.7	
Mrs. Nannie Daniels	Meadow Hay	40.9	106		2.6	
	Rye	3.0		15		5.0
W. S. Hays	Meadow Hay	47.0	126		2.7	
	Barley	10.0		140		14
	Oats	4.0		100		25
	Wheat	40.0		250		6.2
Roy Hobbs	Alfalfa seed	24.0		6500 lbs		270.8 lbs.
V. L. Jacobs	Meadow Hay	80.0	202		2.5	
W. S. Jacobs	Alfalfa	3.0	5		1.7	
	Meadow Hay	40.0	126		3.2	
O. P. Robinson (Mickle)	Meadow Hay	50.6	184		3.6	
O. P. Robinson	Alfalfa	15.0	40		2.7	
	Meadow Hay	120.7	350		2.9	
	Barley	13.2		400		30.3
Joshua Streiff	Alfalfa	20.0	85		4.2	
	Meadow Hay	15.0	40		2.7	
	Garden	2.0	Good			
Geo. M. Warrens	Grain Hay	8.0	21		2.6	
	Meadow Hay	109.0	166		1.5	
	Barley	6.0		80		13.3
	Rye	2.0		14		7.0
	Wheat	25.0		360		14.4
	Alfalfa seed	20.0		3000 lbs		150.0 lbs
	and Chaff		16		0.8	
Frances E. Wilson	Meadow Hay	75.0	150		2.0	
	Barley	8.1		53		6.5
	Orchard	3.0		Fair		
	Garden	1.5		Good		
Gherald Wilson	Alfalfa	60.0	250		4.2	
	Meadow Hay	40.0	100		2.5	
J. A. Wimer	Alfalfa	20.0	75		3.8	
	Meadow Hay	65.0	225		3.5	
	Barley	3.0		69		23
	Oats	3.0		50		16.7
	Wheat	8.0		191		23.9

PLATES


HYDROGRAPHS
OF
MILL CREEK
ABOVE
ALL DIVERSIONS
1929-1932
CUBIC FEET PER SECOND
90
80
70
60
50
40
30
20
10
0
TOTAL WATER SUPPLY 1932
TOTAL WATER SUPPLY 1929
DEFICIENCY 1932
FOURTH PRIORITY
THIRD PRIORITY
SECOND PRIORITY
FIRST PRIORITY
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER
YEAR OF 19
YEAR OF 19


HYDROGRAPHS
OF
NET AVAILABLE WATER SUPPLY
ON
RUTHERFORD CREEK
1929-1932
Including BROWN CREEK and developed water from RUTHERFORD SWAMP
CUBIC FEET PER SECOND
20
15
10
5
WATER SUPPLY 1932
WATER SUPPLY 1929
TOTAL ALLOTMENTS
DEFICIENCY
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER
YEAR OF 19
YEAR OF 19