DEPARTMENT OF PUBLIC WORKS

STATE OF CALIFORNIA

REPORTS OF THE

DIVISION OF WATER RESOURCES

EDWARD HYATT, State Engineer

REPORT ON WATER MASTER SERVICE ON MILL CREEK AND TRIBUTARIES MODOC COUNTY, CALIFORNIA 1931 SEASON

By Leslie C. Jopson, Modoc County Watermaster

Sacramento, California
February, 1932

March 7, 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 on Mill Creek and Tributaries Modoc County, California, during the period from April 1st to September 22nd, 1931.

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 "Stipulation for Consent Judgement," 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

ICJ:CM

ORGANIZATION

Walter E. Garrison	Director of Public Works
Edward Hyatt	State Engineer
Harold Conkling	Deputy State Engineer

GORDON ZANDER
Supervising Hydraulic Engineer

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GENERAL DESCRIPTION OF WORK

A proposed stipulation for judgment was presented to the water users at a water users meeting held at Lake City on March 17, 1931. After some discussion and slight amendment the stipulation was circulated among the water users for signature. All of the parties except Oliver Crampton either signed within a short time or indicated that they would do so. Mr. Crampton refused to either sign or be bound by the stipulation during the 1931 season, but finally agreed to sign rather than go into court in an effort to change his status in the stipulation.

Subsequent to the 1931 irrigation season the Division of Water Resources submitted its report of referee to the Superior Court of Modoc County. No exceptions were filed to this report and on December 19, 1931, a decree, based on the stipulation for judgment, was entered by the court.

Water master service was commenced on April 1, 1931, and terminated for the season on September 22nd. The writer acted as water master throughout the 1931 season with the assistance of Mr. J. W. McPartland during August and September.

All of the ditches ordinarily used on Mill Creek were opened in 1931. On Rutherford Creek however, several of the ditches below Rutherford swamp were not opened due to lack of water. The unopened ditches on Rutherford Creek were the Hays Garden, Hays House, Hays Lower, Robinson and Warrens Ditches.

The ditches which were in use in 1931 diverted all possible water whenever it was available for them.

Rotation was resorted to on Upper Rutherford Creek and Mill Creek very early in the season. Warrens and Vernon on Rutherford Creek pooled their water on April 27th and rotated it on a basis of four days to each

until May 13th when the water became too low to irrigate field crops.

Rotation among the third or irrigation rights on Mill Creek began on April 20th and continued to about June 7th. The schedule was arranged to give each user his proportional share of the water over a thirteen day period. This plan was modified to give the extreme lower users a larger proportion of the time as the losses incurred in reaching them diminished the available head considerably.

During the time that the rotation was in effect the lower users received the water twice and the upper users three times. The last lower users period was about double in length as the water supply was rapidly diminishing and it did not appear possible to give them water again.

After June 7th the domestic rights in Lake City diverted all of the available water in Mill Creek. It became necessary about July 1st to resort to rotation among the domestic users in order to provide adequate heads to irrigate the gardens.

A schedule was put into effect which divided the users into groups who rotated a certain proportion of the water among themselves. Later a rotation schedule for all of the users below the forks, except J. A. Wimer, Horace Hobbs and Read was inaugerated which allowed an irrigation head in each of the two branches. The water was then rotated on each branch on the basis of approximately 12 hours to each user. The users above the forks either rotated the water in the ditches between the parties on the ditch or took a small continuous flow. The Wimer, Horace Hobbs and Read places either required stock water or preferred a small continuous flow.

DESCRIPTION OF RESULTS FOR SEASON

The precipitation at Cedarville for the seasonal year commencing September 1, 1930, and terminating August 31, 1931, has been compared with the precipitations 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 percent of the mean precipitation at Cedarville for the period 1894 to 1930. The figure of 75.5 percent for the relation of the 1930-31 precipitation to the mean precipitation is high for Lake City due to the effect of the torrential rainfall which occurred at Cedarville on June 8, 1931. This storm did not strike Lake City in its course and consequently the rainfall at that place was considerable less than that at Cedarville for the month of June. The distribution and occurrence of the precipitation during the 1930-31 season was such that very little snow was stored up in the mountains for summer water supply.

Table 2 is a tabulation of the Water Supply on Mill Creek above all diversions. Plate 1 at the end of the report shows this water supply graphically as well as the water supply in 1929 to give an indication of the amount of the shortage in 1931.

Table 3 is a tabulation of the net available water supply on Rutherford Creek and its tributaries including Brown Creek and the water developed in Rutherford Swamp. Plate 2 at the end of the report shows this water supply graphically as well as the water supply in 1929 to give an indication of the shortage in 1931.

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

Table 5 is a tabulation of the percent of allotments delivered on

Rutherford Creek to each priority class during the periods shown. It also shows the amount of water developed in Rutherford Swamp and the percentage of full allotments diverted by the prior rights on Brown Creek and on Lower Rutherford Creek.

Table 6 is a tabulation of crop production on typical lands on Mill and Rutherford Creeks. The returns were in nearly all cases considerably below normal.

No time was available in 1931 to construct badly needed headgates and measuring devices in the ditches diverting from Mill Creek. However, two temporary register stations were installed, one in each branch just below the forks, in order to give a twenty four hour check on the low flow distribution. This was made necessary by the complaints charging night manipulation of the water.

When the water supply became inadequate to fill the domestic requirements in July a program of creek channel cleaning was inaugurated to eliminate excessive waste from spreading and ponding in the creek channel All the available men in Lake City turned out for this work and the creek channel was canalized from its lowest point of diversion for more than a mile up the canyon. Groups of men also cleaned out the various springs draining into the creek in order to prevent waste where the stock had tramped them full of debris. As a result of the combined effort to prevent waste about 0.10 cubic foot per second of water was added to the stream flow in July. This increase in flow undoubtedly was a large factor in preventing the complete failure of the water supply later in the season.

CONTROVERSIES

As stated in the chapter entitled "General Description of Work", Oliver Crampton refused to either sign the stipulation for judgment or to abide by its provisions until late in the season. In line with this action he insisted on diverting water to the capacity of his ditch at the start of the general irrigation season, stating that he would soon complete his irrigation by so doing and would then let the other users have all the water. The water master agreed not to interfere with this operation expecting Mr. Crampton to complete his irrigation in about a couple of weeks. But at the end of two weeks Mr. Crampton was still irrigating with the end not yet in sight. Accordingly he was shut down to the maximum allotment recommended for his property in the stipulation for judgment.

The other water users on the creek had become quite incensed at Mr. Crampton's behavior. Upon learning that the water master had no authority to reduce Mr. Crampton's use below the amount recommended in the stipulation they proceeded to take legal action to force Mr. Crampton to pro-rate with them.

An application was made to the court for an order to force Mr. Crampton to submit to regulation of his diversion by the water master in order to prevent him from interfering with the investigation of the referee on the stream. The court denied the application stating that the court had no authority to regulate diversions until the rights had been adjudicated.

The water users, on the advice of their attorney, then decided to assume the responsibility of regulating the Crampton diversion themselves. When Mr. Crampton became aware of their plans he agreed to submit to regulation of his diversion by the water master and requested that he be allowed a turn in the general irrigation water rotation and that he be assured of an adequate

domestic water supply during the dry season. This plan of distribution was agreed upon and no further difficulty with Mr. Crampton occurred. Late in the summer some of the town users shut the Crampton ditch down without the water master's knowledge but it was always opened again. This interference caused Mr. Crampton's tenant more or less trouble but nothing serious developed.

During the period of extreme low flow occurring in August and September an effort was made to divide the available stream flow so as to give all of the users a reasonable proportion of the water on either a rotation or a continuous flow schedule. The plan of distribution was acceptable to all of the users, but inasmuch as, the water was changed twice a day it was necessary to have the water users themselves turn the water and quite often this resulted in the taking of too much water. Whenever an excess of water was diverted by the rotation users the stock water of J. A. Wimer and Horace Hobbs became inadequate and they either had to do without water or go and readjust the diversion. Mr Wimer was greatly put out by the interference with his water and several times had to drive his stock up through town to get them to water. The water master checked up on the faulty manipulation of the water during various hours of the night and day, whenever he had the time, but constant supervision would have been necessary to prevent interference entirely on a creek situated like Mill Creek where there are a great many users and some of them none to friendly toward each other.

Several of the users were discovered with more than their share of the water and were warned to be more careful. It is hoped that with the inception of water distribution under the Water Commission Act that the more easily invoked procedure contained therein in regards suppressing water thiefs will be a great help in preventing petty manipulation of the water at night.

Considerable discussion occurred during the season in regard to the water developed in Rutherford Swamp. At the time the Bennett Collecting Ditch and Re-diversion Ditch were built the Bennett Ranch was given a clear title to the water that was developed on the Wilson Ranch. However, in 1931, the swamp on the Wilson Ranch was practically dry except for the springs tapped by the drain ditch and the irrigator on the ranch put obstructions in the ditch several times to force the water out over his land. Upon Mr. Bennett's request the water master investigated the agreement regarding the use of the ditch and informed Mr. Wilson of its provisions. No further interference by Mr. Wilson occurred after this action.

Horace Hobbs has a contingent right to divert a limited amount of water from Rutherford Creek just above Bennett's Re-diversion but is not supposed to interfere with the flow of Bennett's developed water or with the natural flow of Rutherford Creek. In 1931, Hobbs opened this diversion a number of times and seriously interfered with Bennett's water due to there generally being at such times no water available at that point except the water developed by Bennett. The water users on Lower Rutherford also suffered from the manipulation by Hobbs on several occasions.

The Hays Collecting Ditch heading on the Hobbs Ranch was also the source of controversy as Mr. Hobbs continually obstructed the flow in the ditch and spread the water on his own land. Mr. Hays objected strenuously to this interference insisting that he had a clear title to all the water that was picked up by the ditch. The water master endeavored to secure information as to whether Mr. Hobbs had in fact a right to use the water if he needed it but no definite information was available.

Mr. Hobbs finally agreed under protest to let the water go to Mr. Hays. The stipulation for judgment did not settle the question of ownership of the developed water until such water was commingled with the natural waters of a stream.

Mr. Hays also had some difficulty with the Bennett Re-diversion Ditch which diverts the entire flow of Rutherford Creek at its head and spills the water in excess of that developed by the Bennett Collecting Ditch back into Rutherford Creek at the west boundary of the Brown Ranch. A very inadequate means of regulating this spill is used and whenever an increase or decrease in flow occurs Mr. Hays is generally the loser.

RECOMMENDATIONS

A large number of structures should be installed without delay on Mill Creek in order to properly divide the water. A list of the structures which should be installed are as follows

Ditch or Channel	Structure
King	Headgate and 6" Parshall Measuring Flume
Brown	Headgate and 9" Parshall Measuring Flume
Dry	Headgate and 6" Parshall Measuring Flume
Largent	3" Parshall Measuring Flume
Johnson	Headgate and 3" Parshall Measuring Flume
Barclay	Headgate and 6" Parshall Measuring Flume
Odbert	Headgate and 6" Parshall Measuring Flume
Heard	Headgate and 6" Parshall Measuring Flume
Wallace	Headgate and 3" Parshall Measuring Flume
Hotel	Headgate and 3" Parshall Measuring Flume
Streiff	Headgate and 9" Parshall Measuring Flume
Hobbs	Headgate and 9" Parshall Measuring Flume
Wimer	Headgate and 3" Parshall Measuring Flume
	Headgate and 9" Parshall Measuring Flume
Bear	9" Parshall Measuring Flume
Wilson	2 Headgates and 9" Parshall Measuring Flumes
Polander	Headgate and 3" Parshall Measuring Flume
Little Channel	Headgate and 9" Parshall Measuring Flume
Jacobs	4 Headgates and 9" Parshall Measuring Flumes
Mikle	2 Headgates and 9" Parchall Measuring Flumes
Bennett Re-diversion	Division Structure and 2 3" Parshall Measuring Flumes
Hays	6" Parshall Measuring Flume
Lower Rutherford Channel	2' Parshall Measuring Flume
Daniels Upper	Headgate and 9" Parshall Measuring Flume
Robinson	Headgate and 9" Parshall Measuring Flume

and in addition several division structures and a measuring station in Brown Creek Channel.

A considerable number of the ditches listed above were equipped with weirs in 1929, but practically all such installations are now out of order and require some sort of replacement.

FINANCIAL STATEMENT

The finances for conducting investigations and water master service on all streams in Northern California, except in Water Master Districts operating under the procedure of Sections 37 to 37f of the Water Commission Act, during the 1931 season were combined into one fund due to more or less related work on the various streams.

The water users on Mill Creek subscribed a total of $400.00 as their share of the fund. An equal amount was credited to the fund by the State to match the subscribed funds.

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 MILL CREEK ABOVE
ALL DIVERSIONS FOR THE PERIOD APRIL 1st TO SEPTEMBER 22nd, 1931

Day	April	May	June	July	August	September	
1	13.7	13.8	1.95	1.20	0.75	0.34	
2	11.3	13.0	1.90	1.10	.75	.33	
3	9.10	12.3	1.75	1.00	.70	.33	
4	8.30	11.7	1.65	1.00	.70	.39	
5	9.10	11.3	1.55	1.10	.70	.45	
6	10.4	10.6	1.45	1.00	.70	.40	
7	9.60	9.10	1.50	1.00	.65	.47	
8	9.10	8.30	1.95	.90	.65	.48	
9	9.10	7.50	3.65	.90	.60	.47	
10	10.0	6.80	2.50	.85	.60	.46	
11	9.50	6.40	2.15	.85	.55	.45	
12	8.70	6.40	1.90	.90	.55	.44	
13	8.00	6.40	1.85	.80	.50	.43	
14	6.80	6.80	1.85	.75	.50	.42	
15	6.10	5.80	2.70	.75	.45	.42	
16	6.80	5.40	2.70	.75	.45	.42	
17	8.30	4.80	3.10	.70	.45	.42	
18	9.10	4.50	2.50	.70	.40	.48	
19	9.10	4.20	2.15	.70	.40	.50	
20	9.50	3.95	2.00	.70	.35	.49	
21	10.4	3.70	1.80	.65	.35	.47	
22	9.50	3.40	1.70	.65	.35	.47	
23	8.50	3.10	1.70	.65	.35		
24	7.50	3.10	1.60	.65	.35		
25	7.50	2.90	1.45	.70	.35		
26	8.30	2.70	1.30	.75	.34		
27	10.0	2.70	1.30	.70	.34		
28	12.7	2.65	1.30	.70	.34		
29	13.8	2.45	1.30	.70	.33		
30	14.3	2.45	1.20	.75	.33		
31	-- -	2.10	- --	.80	.33		
Total Sec.Ft. Days	284.10	190.30	57.40	25.35	15.16	*9.53	175 Day Period
Mean Sec.Ft.	9.47	6.14	1.91	.82	.49	.43	3.32
Max. Sec.Ft.	14.3	13.8	3.65	1.20	.75	.50	14.3
Min. Sec.Ft.	6.1	2.10	1.20	.65	.33	.33	.33
Total Ac.Ft.	563	377	114	50.3	30.1	18.9	1153

* 22 day period gage heights from automatic water stage recorder.

TABLE 3

ESTIMATED NET AVAILABLE WATER SUPPLY IN CUBIC FEET PER SECOND OF RUTHERFORD CREEK AND TRIBUTARIES FOR THE PERIOD APRIL 1st TO SEPTEMBER 22nd, 1931

Day	April	May	June	July	August	September	
1	2.25	2.05	0.80	0.25	0.10	0.06	
2	2.15	2.00	.70	.23	.09	.06	
3	2.05	2.00	.65	.21	.08	.05	
4	2.00	1.95	.60	.20	.08	.05	
5	2.05	1.95	.60	.20	.08	.07	
6	2.50	2.05	.60	.19	.08	.07	
7	2.45	2.15	.60	.19	.08	.08	
8	2.30	2.00	.75	.19	.08	.08	
9	2.20	1.80	.85	.18	.08	.08	
10	2.10	1.40	.80	.18	.08	.08	
11	2.05	1.35	.80	.18	.08	.08	
12	2.00	1.30	.75	.17	.08	.08	
13	1.95	1.20	.70	.17	.08	.08	
14	1.90	1.15	.70	.17	.07	.09	
15	1.85	1.10	.65	.16	.07	.09	
16	1.80	1.10	.65	.16	.07	.09	
17	1.75	1.10	.65	.15	.07	.09	
18	1.70	1.10	.60	.15	.07	.10	
19	2.05	1.10	.60	.14	.07	.10	
20	2.10	1.00	.60	.14	.07	.10	
21	2.60	1.00	.55	.13	.07	.10	
22	2.55	.95	.55	.13	.07	.10	
23	2.55	.95	.50	.12	.07	.	
24	5.00	.95	.45	.12	.07		
25	5.00	.90	.40	.12	.07		
26	3.45	.90	.35	.11	.07		
27	2.90	.85	.35	.11	.07		
28	2.35	.85	.35	.11	.07		
29	2.25	.85	.30	.11	.07		
30	2.15	.85	.30	.10	.07		
31	- --	.85	--	.10	.07		
Total Sec.Ft. Days	72.00	40.75	17.75	4.87	2.33	**1.78	175 Day Period
MEAN Sec. Ft.	2.40	1.31	.59	.16	.08	.08	0.80
Max. Sec.Ft.	5.00	2.15	.85	.25	.10	.10	5.00
Min. Sec.Ft.	1.70	.85	.30	.10	.07	.05	.05
Total Ac. Ft.	143	80.8	35.2	9.66	4.62	3.53	277

*Includes Brown Creek and developed water in Rutherford Swamp.

**22 day period.

TABLE 4

WATER DELIVERIES ON MILL CREEK COMPARED WITH ALLOTMENTS
1931 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 (2.02c.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.)			
4/1 to 4/10	80	70	33	0	35	9.50	0.50	10.00
4/11 to 4/20	95	95	22	0	28	7.78	.41	8.19
4/21 to 4/30	95	95	31	0	35	9.74	.51	10.25
5/1 to 5/10	100	55	35	0	36	9.92	.52	10.44
5/11 to 5/20	100	50	11	0	18	5.06	.40	5.46
5/21 to 5/30	100	25	2	0	9	2.57	.35	2.92
5/31 to 6/9	65	18	1	0	6	1.78	.16	1.94
6/10 to 6/19	95	17	0	0	8	2.17	.17	2.34
6/20 to 6/29	71	0	0	0	5	1.44	.10	1.54
6/30 to 7/9	47	0	0	0	3	.94	.10	1.04
7/10 to 7/19	36	0	0	0	3	.72	.06	.78
7/20 to 7/29	31	0	0	0	2	.62	.06	.68
7/30 to 8/8	33	0	0	0	2	.67	.05	.72
8/9 to 8/18	22	0	0	0	2	.45	.05	.50
8/19 to 8/28	15	0	0	0	1	.30	.05	.35
8/29 to 9/7	16	0	0	0	1	.32	.05	.37
9/8 to 9/17	19	0	0	0	1	.39	.05	.44
4/1 to 9/17					12	3.20	.21	3.41

TABLE 5

WATER DELIVERIES ON RUTHERFORD CREEK COMPARED WITH ALLOTMENTS
1931 SEASON

Period	Per Cent of Allotment Delivered									**	***	Net
	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.	Available Water Supply c.f.s.
4/1 to 4/10	x	x	85	64	17	0	0	11	44	70	0.40	2.20
4/11 to 4/20	x	x	x	0	0	0	0	9	38	72	.45	1.92
4/21 to 4/30	x	x	x	64	25	0	16	24	25	100	.50	3.08
5/1 to 5/10	x	x	x	x	33	0	0	15	16	64	.35	1.94
5/11 to 5/20	x	x	x	x	0	0	0	9	6	40	.23	1.15
5/21 to 5/30	x	x	x	x	0	0	0	9	4	0	.21	.90
5/31 to 6/9	x	x	80	10	0	0	0	7	1	0	.20	.70
6/10 to 6/19	x	x	80	0	0	0	0	7	1	0	.20	.69
6/20 to 6/29	x	x	1	0	0	0	0	5	0	0	.10	.44
6/30 to 7/9	67	10	0	0	0	0	0	2	0	0	.06	.21
7/10 to 7/19	57	0	0	0	0	0	0	2	0	0	.04	.16
7/20 to 7/29	43	0	0	0	0	0	0	1	0	0	.03	.12
7/30 to 8/8	38	0	0	0	0	0	0	1	0	0	.02	.09
8/9 to 8/18	29	0	0	0	0	0	0	1	0	0	.02	.08
8/19 to 8/28	24	0	0	0	0	0	0	1	0	0	.02	.07
8/29 to 9/7	19	0	0	0	0	0	0	1	0	0	.02	.06
9/8 to 9/17	24	0	0	0	0	0	0	1	0	0	.03	.08

x 100% allotment.

* Brown Creek has decreed rights of 0.80 cubic foot per second but due to limited season 1.60 cubic feet per second is allowed as a maxumum rate of diversion.

** 0.25 cubic foot per second for stockwater and 0.25 cubic foot per second for garden irrigation on Hays, Daniels and Darst Ranches.

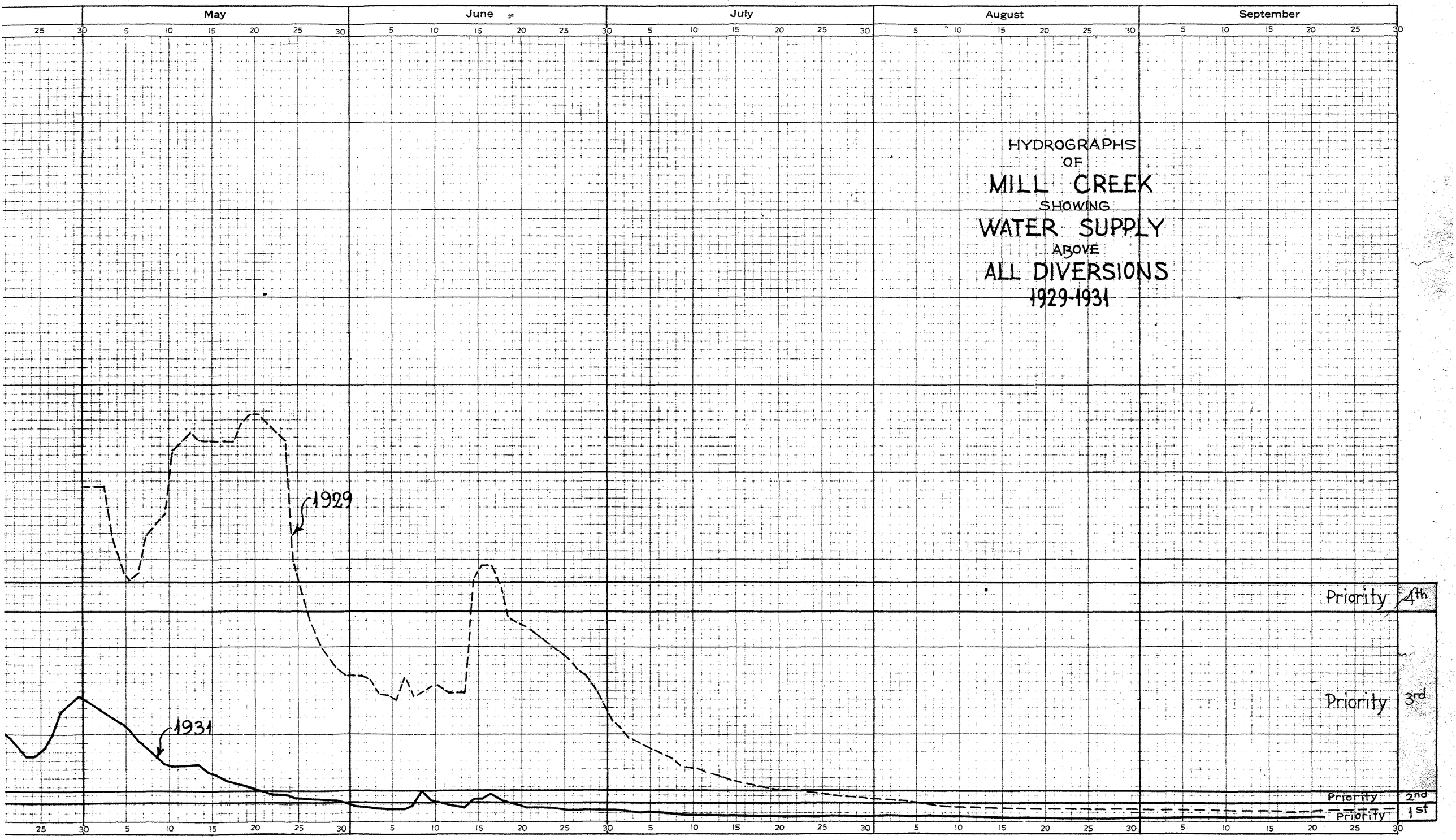
*** Bennett Collecting Ditch and Hays Collecting Ditch.

TABLE 6

ESTIMATED CROP YIELDS ON TYPICAL LANDS
IRRIGATED FROM MILL AND RUTHERFORD CREEKS
- 1931 -

Owner	Crop	Acres	Total Yield		Yield Per Acre	
			Sacks	Tons	Sacks	Tons
David Baty	Meadow Hay	444.0		150 (Approx		0.3
Mrs. Minnie Daniels	Meadow Hay	5.0		3		0.6
	Pasture	65.0			Fair	
W. J. Hays	Meadow Hay	20.0		20		1.0
	Pasture	120.0			Fair	
V. L. Jacobs	Alfalfa Hay	6.8		15		2.2
	Meadow Hay	86.4		160		1.9
	Pasture	23.5			Good	
W. S. Jacobs	Meadow Hay	31.7		80		2.5
O. P. Robinson	Alfalfa Hay	14		25		1.8
	Meadow Hay	140.2		75		0.5
	Wheat	43.3			Failure	
Joshua Strieff	Alfalfa Hay	15.6		40		2.6
	Meadow Hay	24.4		60		2.5
	Pasture	10.4			Good	
A. M. Warrens	Grain Hay	12.0		12		1.0
	Meadow Hay	85.0		52		0.6
	Alfalfa Seed	23.6	1500 lbs		64 lbs	
	Orchard				Fair	
J. A. Wimer	Alfalfa Hay	40.9		100		2.4
	Meadow Hay	48.4		100		2.1
	Barley	5.5	116		21.0	
	Wheat	2.0	23		11.5	
	Pasture	12.6			Fair	
	Garden	0.8			Failure	

PLATES


May
June
July
August
September
HYDROGRAPHS
OF
MILL CREEK
SHOWING
WATER SUPPLY
ABOVE
ALL DIVERSIONS
1929-1931
1929
1931
Priority 4th
Priority 3rd
Priority 2nd
Priority 1st