STATE OF CALIFORNIA

DEPARTMENT OF PUBLIC WORKS

REPORTS OF THE
DIVISION OF WATER RESOURCES
EDWARD HYATT, STATE ENGINEER

REPORT ON WATER MASTER SERVICE ON PIT RIVER IN BIG VALLEY MODOC AND LASSEN COUNTIES, CALIFORNIA FOR THE SEASON OF 1940

By

W. A. Alexander
Water Master Assistant
Sacramento, California

TABLE OF CONTENTS

	Page
LETTER OF TRANSMITTAL	
INTRODUCTION	1
DISCUSSION OF RESULTS	
Precipitation	1
Water Supply	2, 3, 4
Distribution	4
Lookout Dam	4
Gerig Dam	5
Bieber Dam	6, 7
McArthur Dam	7, 8
General	8, 9
Changes of Ownership	9

TABLES

1. Snow Survey - Upper Pit River
2. Precipitation - Upper Pit River
3. Daily Discharge in cubic feet per second of Pit River near Canby, California, for the period April 1 to September 30, 1940.
4. Ownership of Lands and Water Rights.

EDWARD HYATT, STATE ENGINEER
CHIEF OF DIVISION

CULBERT L. OLSON
GOVERNOR OF CALIFORNIA

FRANK W. CLARK
DIRECTOR

STATE OF CALIFORNIA

Department of Public Works

SACRAMENTO

DIVISION OF WATER RESOURCES
401 PUBLIC WORKS BUILDING

Mr. Harold Conkling
Deputy State Engineer
Sacramento, California

Attention: Mr. Gordon Zander, Supervising Hydraulic Engineer

Dear Sir:

Herewith is submitted a report covering water master service on Pit River in Big Valley, Modoc and Lassen Counties, California for the season of 1940.

The report presents a general description of the work, and a discussion of the results obtained. Records of precipitation, run-off and other pertinent data are included.

W A Alexandy
Water Master Assistant

COPY

REPORT ON

WATER MASTER SERVICE

IN

BIG VALLEY, MODOC
AND
LASSEN COUNTIES, CALIFORNIA

DURING SEASON OF 1940

INTRODUCTION

The Big Valley Water Master District was created by order of the Division of Water Resources, under date of November 13, 1934, to embrace all of the water rights on Pit River in Big Valley as ascertained and determined by an agreement in writing entitled "Agreement Determining Rights to Water and to the Use Thereof from Pit River in Big Valley in Modoc and Lassen Counties, California," dated October 10, 1933 and duly recorded in each of the offices of the County Recorder of Modoc and Lassen Counties in December, 1934.

Water master service in the Big Valley Water Master District was carried on throughout the 1940 season in accordance with the "Distribution of Water" procedure contained in Sections 37 to 37f, inclusive, of the Water Commission Act. Such service extended over the period from April 1 to October 1. Harrison Smitherum, Supervising Water Master, administered the distribution of water within the Big Valley Water Master District until about June 1. Subsequent to this date W. A. Alexander, Deputy Water Master, Big Valley Water Master District, administered the distribution of water within this district along with similar work in the Hat Creek and Burney Creek Water Master Districts.

DISCUSSION OF RESULTS

Precipitation

Data from snow surveys made annually by the Division of Water Resources at the three snow courses in the upper Pit River Watershed are shown in Table 1 of this report. In this table are recorded the past eleven years of records in comparison with the deduced normal (long time mean) along with the record average for the eleven years of record.

As shown in the above mentioned table, the water content of the snow varied from 26.7 per cent of the deduced normal at 6500 feet elevation to 78 per cent of the deduced normal at 7500 feet elevation. This condition existed throughout California in this year with nearly normal snow pack above 7000 feet elevation, but with very little snow below this elevation.

The monthly, seasonal and eleven year mean record of precipitation at Alturas, Jess Valley and Bieber stations since 1929 are set forth in Table 2 of this report.

Based upon the data in the above mentioned table, precipitation for the 1939-40 season at Bieber was 21.09 inches or about 155 per cent of the mean for the 11 year period 1929 to 1940. Of this total 86 per cent fell during the period October 1 to April 1, as compared to the long time mean of 78 per cent for the same period.

Water Supply

The water supply for Pit River in Big Valley is derived mainly from the flow of Pit River and its tributaries above Big Valley and from the flow of Ash Creek which has its junction with Pit River above the

Gerig Dam. The flow of Ash Creek reaching Pit River is of little value for irrigation purposes to the majority of the Pit River Water Users as the flow reaching Pit River usually fails prior to the time that the supply from Pit River becomes less than the irrigation demand. The Will Gerig, Peter Gerig, J. A. Hollenbeck and Babcock Ranches receive partial benefit from use of Ash Creek water each spring prior to May 15 by diverting directly from Ash Creek. These ranches receive their main irrigation supply from Pit River by means of Gerig Dam. The Ash Creek water reaching these ranches failed on about May 15 of this year.

A gaging station is maintained and operated throughout the entire year by the United States Geological Survey on Pit River below Canby. The mean daily flow at this station as compiled by the U.S.G.S. is presented in Table 3 of this report. The flow at this station represents the flow reaching Big Valley during the irrigation season, except for a short period from about April 1 to May 15 when the flow is supplemented by flow from numerous small tributaries below Canby Station. The flow at this station for 1940 is shown in Table 3 of this report.

A hydrograph of the flow at Canby Station for the 1940 irrigation season is shown as Plate 1 of this report. The various priority groups established by the aforementioned agreement are indicated by horizontal lines on the hydrograph. The two peaks, one in August and the other early in September, indicate the water purchased from the Hot Spring Valley Irrigation District by a group of water users in the Big Valley Water Master District.

A comparison of the total seasonal irrigation water supply reaching Big Valley in Pit River is set forth in the following tabulation. The flow was measured at Gouger Neck Station during the 1930 and 1931 seasons and at Canby Station subsequent thereto.

Season from April 1 to Sept. 30	Total Flow in Acre-Feet
1930	18,000
1931	1,790
1932	68,400
1933	9,580
1934	1,900
1935	77,000
1936	53,000
1937	28,900
1938	212,000
1939	12,720
1940	37,299

Distribution

Distribution for the 1940 season followed the practices initiated during the past seven seasons with little modification. The results accomplished in the several sections into which the district is divided follow.

Lookout Dam

The water level of the reservoir behind this dam is maintained at about 7.0 foot gage height throughout the irrigation season. By maintaining this level it is possible to make efficient distribution through the Oiler and Three corner diversions and to provide subirrigation to the lands so irrigated along the east side of the river.

During the 1940 season irrigation heads were released through the Oiler Diversion to the Metzger and Leventon Ranches until about May 26. Subsequent to this date stock water only was available for these ranches. Irrigation water for the Will Gerig Ranch was released through the Three Corners Diversion about May 5, May 27th and June 10.

The Lookout Dam and the Oiler Diversion are in poor condition and should be repaired in the near future to allow continued operation and efficient distribution.

Gerig Dam

The Gerig Dam was replaced by a concrete structure during the 1939 season. The new dam raises the level of the reservoir about one foot higher than the old dam, thereby raising the water level at Fulcher Pipe to about the same level formerly maintained by Fulcher Dam, thereby supplanting entirely the use of the Fulcher Dam during the 1940 season. A rotation schedule is started when the flow of Pit River drops to about 70 cubic feet per second. This rotation schedule was started at Fulcher Pipe about May 3 in 1940. The distribution procedure at this dam is as follows:

1. The reservoir or channel is allowed to fill to its maximum capacity with all diversions closed.

2. Fulcher Pipe diversion is opened, with the Rock Dam in Egg Lake Slough closed, and the water is allowed to pass through the Kramer Ditch for about 48 hours.

3. Rock Dam is then opened still allowing a full head to flow through Fulcher Pipe for about 36 hours. Pipe is then closed.

4. Gerig Pipe diversion in levee is then opened and allowed to flow for about 24 hours at which time the check at the head of the Watson Ditch is opened. Water is allowed to stay on Gerig Ranch for about 36 hours. The swing dam is then opened and the water allowed to return to Pit River through Hollenbeck Slough.

5. At times of surplus, water is allowed to continue past the Swing Dam through the Watson Ditch to the Babcock and McElroy Brown Ranches. Water is usually

available to these ranches early in May and during the haying season of each year. During the 1940 season these ranches received water until about May 15 and during July.

Bieber Dam

The Bieber Dam is supported by two major structures, Ricketts Dam and Spilling Dam. These supporting structures are installed as soon as the water is low enough in the spring at the same time the Bieber Dam is installed. The Bieber Dam supplies a means of diverting water from Pit River through the Babcock Ditch for the irrigation of the lands on the west side of Pit River, south of Bieber.

The distribution procedure used at this dam during the irrigation season after rotation schedule has been started is as follows: This procedure was followed during the 1940 season.

1. The Babcock Diversion is opened with the McElroy Brown Dam and the pipes under the Kate Gerig Road closed, allowing the water to reach its maximum height with the road acting as a levee. The water is held at this elevation for 24 hours with the Kate Gerig diversion open and the McElroy Brown Dam partially open.

2. With the Kate Gerig Dam closed and the De Mange Box open the pipes are opened at the Kate Gerig road and the water allowed to pass through the De Mange Diversion for about 48 hours at which time the De Mange Box is closed and the Kate Gerig Dam opened.

3. The pipes at the Kate Gerig road are again closed for about 12 hours or until the water level has reached its maximum elevation. The pipes are then

opened and the water released to spread over the Kate Gerig Ranch.

4. The water passing through the Kate Gerig Ranch goes through a series of dams and checks to the Babcock Ranch and thence to the Thompson Ranch. When the water is released by Babcock to Thompson the diversion at Bieber Dam is closed. The time required between the Kate Gerig Ranch and the Thompson Ranch is about four days.

5. The flow reaching Bieber Dam is now allowed to pass down the river through the Bieber Dam.

McArthur Dam

The McArthur Dam is supported by a concrete structure in Goble Slough which was constructed during the 1939 season. This new dam materially increased the efficiency of distribution of the available irrigation supply for the McArthur Ranch during the 1940 season.

The distribution procedure at McArthur Dam is as follows:

1. The water level in the channel behind the dam is raised to its maximum capacity with all the pot holes behind the supporting levee filled to capacity.

2. The storage behind Bieber Dam is released by removing several flash boards in the dam. This head passing down the river reaches the filled channel on the McArthur Ranch and spreads over the bank at the upper end of the ranch, thereby spreading over all of the upper portion of the ranch above the dam.

3. The Bieber Dam is closed and the storage is recaptured.

4. After holding the water above the McArthur Dam for about 12 to 24 hours, the water is released through pipes in the levee to the lower portion of the ranch and thence to the Avilla Ranch. The surplus water from the McArthur Ranch usually provides enough water to irrigate the Avilla Ranch. If not, some of the channel storage is

released to complete the irrigation.

The dams on the Avilla Ranch are in poor condition and should be repaired or replaced in the near future to provide proper control of the available water so as to prevent further waste and insure efficient distribution of the available irrigation supply to this ranch.

General

If the channel storage in the river and in the various sloughs is kept to the maximum during the irrigation season less time is required to complete each rotation period. During the 1940 season the first rotation period was from May 3 to May 26, and the second period May 26 to June 17, or an average of about 23 days.

According to the aforementioned agreement, the channel storage behind each dam is maintained during the period after the irrigation of hay crops has been completed, for stock watering purposes. It is possible to maintain this storage only when the dams are in first class state of repair as the flow in Pit River during July and August is not more than sufficient to offset the evaporation loss.

During the 1940 season subsequent to June 17 and through July, haying was in progress and the available water was used for the irrigation of pasture land and by the parties of the 3rd and 4th priority classes. For the remainder of the season stock water only was available to the water users of the Big Valley Water Master District.

During the period August 15 to September 7, 1940, a total of 1100 acre-feet was released from Big Sage Reservoir by the Hot

Springs Valley Irrigation District and sold to a group of the water users within the Big Valley Water Master District at a rate of $0.50 per acre-foot. The cost was apportioned according to the acreage irrigated by this group within the Big Valley Water Master District. This water was released at the end of the Hot Springs Valley Irrigation period.

Changes of Ownership

The ownership of lands and water rights within the Big Valley Water Master District set forth in the "Agreement Determining Rights to Water and to the Use Thereof from Pit River in Big Valley in Modoc and Lassen Counties, California", have been traced to the owner of said lands and water rights as shown on the statement for Big Valley Water Master District for 1941. Table 4 of this report sets forth the original ownership, intermediate ownerships, water right and present owners along with the latest known mailing address.

TABLE 1

DIVISION OF WATER RESOURCES

SNOW SURVEY - UPPER PIT RIVER

	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940
Eagle Peak Course - Elev. 7500 ft. Date of Survey	4/3	4/1	3/30	3/30	4/2	4/10	4/9	3/29	3/31	3/30	4/40
Depth of Snow - Inches	24.3	13.3	43.8	38.1	9.9	66.1	52.0	47.3	71.3	27.2	38.4
Water Content - Inches	11.0	5.2	18.7	14.3	3.3	22.6	22.0	17.5	23.6	10.4	15.6
Density - Per cent	45.3	39.1	42.6	37.5	33.3	34.2	42.3	37.1	33.1	38.2	40.6
Deduced Normal Water Content								20.0	20.0	20.0	20.0
% of Deduced Normal	55.0	27.0	94.0	71.5	16.5	113.0	110.0	87.5	118.0	52.0	78.0
Record Average - In.								14.32	15.35	14.8	14.9
% of Record Average	78.0	36.3	131.0	100.0	23.0	158.0	154.0	122.0	153.7	70.5	104.7
Cedar Pass Course - Elev. 7200 ft. Date of Survey	3/31	3/31	3/26	3/28	3/31	3/27	4/5	4/10	3/26	3/28	3/22
Depth of Snow - In.	29.3	22.1	49.2	43.9	2.2	56.2	68.2	54.2	79.1	28.2	35.9
Water Content - In.	13.0	8.0	19.8	16.3	0.9	21.1	26.2	21.6	25.2	10.5	14.6
Density - Per cent	44.4	37.6	40.3	37.1	40.8	37.4	38.4	40.0	31.8	37.2	40.7
Deduced Normal Water Content								22.2	22.2	22.2	22.2
% of Deduced Normal	58.7	36.1	88.4	73.4	4.1	98.2	118.0	97.4	114.0	47.4	65.8
Record Average - In.								15.9	16.9	16.3	16.1
% of Record Average	82.0	50.4	118.0	102.5	5.7	133.0	165.0	136.0	149.1	64.4	90.7
Adin Mountain Course - Elev. 6500 ft. Date of Survey	3/27	3/27	3/24	3/27	4/1	4/17	3/26	4/7	4/8	3/31	4/7
Depth of Snow - In.	13.3	6.1	30.0	37.6	0	45.9	47.2	37.4	61.4	17.5	10.8
Water Content - In.	6.1	2.9	13.3	14.1	0	18.8	20.0	16.7	28.1	8.1	4.3
Density - Per cent	45.6	47.3	44.3	37.5	0	40.9	42.3	44.8	45.8	46.2	39.8
Deduced Normal Water Content								16.1	16.1	16.1	16.1
% of Deduced Normal	37.9	18.0	82.5	87.6	0	116.6	124.3	104.0	174.	50.2	26.7
Record Average - In.								11.5	13.3	12.8	12.0
% of Record Average	53.0	25.2	115.6	122.5	0	163.7	174.0	145.2	211.3	63.3	35.8

TABLE 2

Division of Water Resources

Precipitation-Upper Pit River

		Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Season
Jess Valley	1929 - 30			2.41	2.72	2.01	1.29	1.01	1.57	.13	.02	.05	1.94	
	1930 - 31	.90	1.19	.13	.80	.88	1.64	.39	1.01	.61	.00	.28	.46	8.29
Elev. 5400 Ft	1931 - 32	1.67	2.24	1.58	2.20	.74	2.45	3.37	2.64	.53	.11	.00	.08	17.61
	1932 - 33	.24	.52	1.64	3.09	.85	1.03	1.84	1.53	.19	.08	T	.72	11.73
	1933 - 34	.90	.07	1.14	1.36	1.58	2.04	.65	1.77	2.32	.11	.10	.40	12.44
	1934 - 35	.61	2.87	2.12	1.53	2.02	1.71	4.31	2.25	.00	T	.09	T	17.51
	1935 - 36	2.49	1.13	2.17	3.67	2.94	1.44	0.92	1.11	1.67	.38	.37	.91	19.20
	1936 - 37	.00	.00	1.06	2.78	2.43	1.72	1.83	.87	1.00	1.89	.00	.28	13.86
	1937 - 38	1.41	3.45	4.42	1.25	2.56	4.13	2.60	1.23	1.22	1.30	.00	.54	24.11
	1938 - 39	1.87	1.59	.40	1.66	1.87	1.54	.59	.81	.87	.80	.15	.60	12.75
	1939 - 40	1.72	0.01	2.41	2.17	3.06	2.54	2.86	0.15	0.37	0.10	0	2.71	18.10
	11 Yr. Record Mean	1.18	1.31	1.95	2.11	1.90	1.96	1.85	1.36	0.81	0.47	0.10	0.59	15.80
Alturas	1929 - 30	0.54	.00	1.60	2.24	1.77	1.14	0.64	0.90	0.10	T	0.03	1.00	9.96
	1930 - 31	1.15	0.57	0.23	0.67	0.67	1.03	0.46	0.06	0.57	.00	T	0.64	6.05
Elev. 4460 Ft	1931 - 32	1.33	1.54	2.50	1.65	0.46	1.10	1.51	1.26	0.29	T	T	T	11.64
	1932 - 33	0.07	0.33	1.53	3.12	0.23	0.70	1.44	1.08	0.24	0.31	0.70	0.42	10.17
	1933 - 34	1.00	.00	0.74	0.54	0.94	0.87	0.42	2.01	1.88	T	0.18	0.59	9.17
	1934 - 35	0.52	3.04	1.56	2.52	1.23	1.44	2.74	0.81	.00	0.12	T	0.03	14.01
	1935 - 36	1.22	0.57	1.54	4.93	2.95	0.72	0.56	1.03	0.82	0.19	0.18	0.49	15.20
	1936 - 37	0.01	0.03	0.96	2.05	2.44	1.63	0.97	0.27	0.30	0.15	.00	0.06	8.87
	1937 - 38	1.14	3.75	5.68	1.01	2.24	3.21	1.04	0.53	0.71	0.98	.00	0.43	20.72
	1938 - 39	1.56	0.98	0.07	1.07	0.45	0.98	0.28	0.38	0.36	0.78	0.08	0.57	7.56
	1939 - 40	2.00	0.02	1.60	1.70	3.08	1.98	1.03	0.27	0.05	.00	.00	0.37	12.10
	11 Yr. Record Mean	0.96	0.98	1.64	1.96	1.50	1.35	1.00	0.78	0.48	0.23	0.11	0.42	11.41
	31 Yr. Record Mean	0.88	1.15	1.32	1.82	1.38	1.45	1.19	0.91	0.59	0.40	0.23	0.57	11.89
Bieber	1929 - 30	.83	.00	4.51	3.78	2.75	.67	.92	1.54	.02	T	.20	1.25	16.47
	1930 - 31	.43	.90	.28	1.38	1.98	1.44	.26	1.37	.31	T	.04	.59	8.98
Elev. 4200 Ft	1931 - 32	2.25	1.18	4.09	1.94	.69	1.25	1.72	1.23	.20	.22	.00	T	14.77
	1932 - 33	.86	.73	1.78	3.39	.31	2.57	1.28	2.59	T	T	T	.42	13.93
	1933 - 34	2.16	.00	1.67	1.19	1.79	1.33	.12	1.93	.56	.21	.00	.50	11.46
	1934 - 35	1.05	3.23	1.89	2.38	1.60	2.91	4.75	1.01	.04	.02	.00	.04	18.92
	1935 - 36	1.96	.38	2.69	5.56	3.40	.95	.80	.81	.75	.10	.10	.54	18.04
	1936 - 37	.10	.00	1.70	2.03	5.05	1.85	1.46	.36	1.04	.18	.00	.10	13.87
	1937 - 38	2.10	5.30	5.46	1.82	4.62	6.59	1.01	0.54	0.60	0.70	.00	.45	29.19
	1938 - 39	1.30	.95	.59	1.83	.46	1.28	.68	.55	.31	.60	.00	.47	9.02
	1939 - 40	1.68	.02	3.53	2.84	5.64	3.50	1.19	1.19	0.04	0	0	1.46	21.09
	11 Yr. Record Mean	1.34	1.15	2.56	2.57	2.57	2.21	1.29	1.19	0.35	0.18	0.03	0.53	15.96

TABLE 3

DAILY DISCHARGE IN CUBIC-FEET PER SECOND
PIT RIVER NEAR CANBY
APRIL 1 TO SEPTEMBER 30, 1940

Day	April	May	June	July	August	Sept.	
1	1500	158	25.0	45.0	9.00	18.0	
2	956	179	35.0	30.0	10.0	17.0	
3	1010	151	40.0	25.0	13.0	12.0	
4	938	201	35.0	35.0	16.0	11.0	
5	806	166	30.0	30.0	9.00	12.0	
6	668	155	26.0	32.0	9.00	15.0	
7	526	136	20.0	26.0	9.50	60.0	
8	411	87.0	16.0	22.0	14.0	125	
9	370	45.0	26.0	27.0	16.0	175	
10	350	30.0	62.0	25.0	18.0	101	
11	325	30.0	107	22.0	18.0	54.0	
12	300	29.0	85.0	20.0	17.0	37.0	
13	275	24.0	85.0	20.0	14.0	30.0	
14	246	14.0	95.0	17.0	14.0	25.0	
15	228	9.00	98.0	16.0	12.0	20.0	
16	255	40.0	92.0	16.0	55.0	21.0	
17	265	60.0	72.0	15.0	136	16.0	
18	270	113	54.0	15.0	144	14.0	
19	270	136	54.0	14.0	140	14.0	
20	193	129	38.0	13.0	113	14.0	
21	210	136	25.0	14.0	85.0	14.0	
22	218	116	24.0	15.0	72.0	16.0	
23	192	110	25.0	7.50	62.0	26.0	
24	188	87.0	27.0	5.00	47.0	37.0	
25	157	69.0	30.0	5.00	38.0	40.0	
26	136	62.0	26.0	7.50	30.0	40.0	
27	151	67.0	44.0	4.80	26.0	40.0	
28	107	72.0	98.0	5.00	25.0	35.0	
29	95.0	47.0	85.0	6.50	25.0	35.0	
30	87.0	27.0	72.0	7.50	21.0	30.0	
31	--	21.0	--	8.50	20.0	--	
Total Sec.Feet Days	11697.0	2706.	1551.	551.5	1237.5	1104.	183 day Period
Mean Sec.Feet	390.0	87.3	51.7	17.8	39.9	36.8	298.9
Max. Sec.Feet	1500	201.0	107.0	45.0	144.0	175.0	1500.0
Min. Sec.Feet	87.0	9.00	16.0	4.80	9.00	11.0	4.80
Total Ac. Ft.	23200.0	5370	3080	1090	2450	2190	37300

TABLE NO. 4

OWNERSHIP OF LANDS AND WATER RIGHTS

OWNER UNDER AGREEMENT (1)	WATER RIGHTS CUBIC FEET PER SECOND	TRACT NO.	PRESENT OWNER	ADDRESS OF PRESENT OWNER
		LANDS IN LASSEN COUNTY		
Avilla, Antone	14.00		Avilla, Anton P.	Red Bluff, California
			Avilla, Lloyd	" "
			Totten, Irene	" "
			Copper, Ida	" "
Babcock, Arad	1.52		Babcock, Arad	Bieber, California
Babcock, Bros.)				
Babcock, Lester A.)				
Babcock, Ernest G.)	17.36		Babcock, Ernest G.	Bieber, California
Jones, Elmer A.)				
Walker Investment Inc.)				
Babcock, Lester A.	2.02		Babcock, Lester A.	Bieber, California
Babcock, Andrew	2.61		Babcock, Andrew	Bieber, California
De Mange, A. E.	3.33		De Mange, R.C., Trustee	601 Livingston Bldg. Bloomington Ill.
Fox, Dan	2.72		Fox, Dan	Bieber, California
Gerig, Kate	6.03		Gerig, Kate	Bieber, California
Gerig, Peter	8.43		Gerig, Peter	Bieber, California
Knox, Mrs.Dolly (Peter Gerig)				
Gerig, William H.	3.67		Gerig, William H.	Bieber, California
Holl, James H.	7.64		Holl, James H.	Bieber, California

TABLE NO.4 (Cont.)

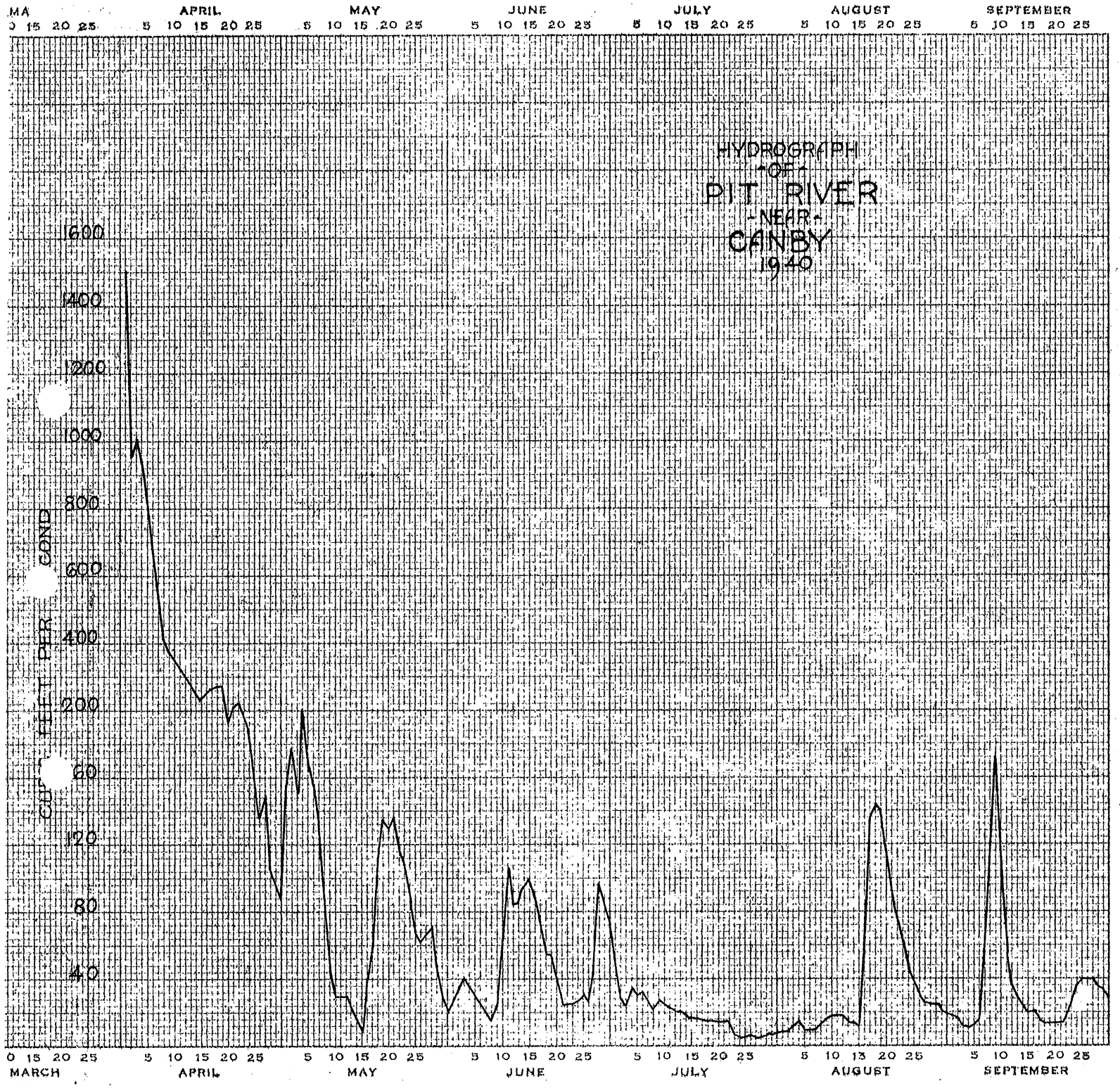
OWNERSHIP OF LANDS AND WATER RIGHTS

OWNER UNDER AGREEMENT (1)	WATER RIGHTS CUBIC FEET PER SECOND	TRACT NO	PRESENT OWNER	ADDRESS OF PRESENT OWNER
		LANDS IN LASSEN COUNTY (Cont.)		
Hollenbeck, Estate of Mary	2.14		Hollenbeck, Belle	McArthur, California
Hollenbeck, Jas. A.	2.82		Hollenbeck, J. A.	Pittville, California
Kramer, Estate of G. L.	8.48		Kramer, Estate of G. L.	c/o L.W.Kramer, Bieber, Calif.
McArthur, Roderick	17.77		McArthur, Roderick	McArthur, California
Merritt, Marjorie M. and Brown, McElroy	9.22		Merritt, Marjorie M. and Brown, McElroy	Bieber, California
Knox, Mrs.Dolly, (Peter Gerig)	0.47		Summers, J. L.	" "
Jones, Elmer J.	4.33		Thompson, M. J. and Thompson, W. H.	Bieber, California
Watson, H. C.	1.13		Watson, H. C.	Alturas, California
		LANDS IN MODOC COUNTY		
Stevenson, J. W. and Stevenson, Emma	2.65		Eades, E. A.	Lookout, California
Harvey, G. W.	0.90		Harvey, G. W.	Lookout, California
Hayes, A. L	0.25		Hayes, Emily	Lookout, California
Joiner, Willis	0.62		Joiner, Willis and Lydia N.	Lookout, California
Kramer, William	5.66		Kramer, William	Lookout, California
Leventon, J. W.	2.94		Leventon, Donald J.	Lookout, California
Metzger, D. J. McInnes, Ida and Bank of Tehama County	14.66		Metzger, D. J.	Red Bluff, California

TABLE NO. 4 (Cont.)

OWNERSHIP OF LANDS AND WATER RIGHTS

OWNER UNDER AGREEMENT (1)	WATER RIGHTS CUBIC FEET PER SECOND	TRACT No.	PRESENT OWNERS	ADDRESS OF PRESENT OWNER
		LANDS IN MODOC COUNTY (Cont.)		
Monchamp, L. H.	1.14		Monchamp, L. H.	Lookout, California
Nichols, R. L. and Nichols, Nora E.	0.46		Nichols, R. L. and Nichols, Nora E.	Lookout, California
Roberts, H. M.	2.55		Roberts, H. M.	Lookout, California
Robinson, E. C.	1.17		Robinson, Ernest C.	Lookout, California
Thrasher, A. and Thrasher, T.	0.15		Thrasher, Tressie	Lookout, California


HYDROGRAPH
OF
PIT RIVER
NEAR
CANBY
1940
CUBIC FEET PER SECOND
1600
1400
1200
1000
800
600
400
200
60
120
80
40
MARCH
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER