STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

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

REPORT ON WATER MASTER SERVICE IN COW CREEK WATER MASTER DISTRICT SHASTA COUNTY, CALIFORNIA 1941 SEASON

BY

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SACRAMENTO

DIVISION OF WATER RESOURCES
401 PUBLIC WORKS BUILDING

February 18, 1943

Mr. Harold Conkling
Deputy State Engineer
Sacramento, California

Attention: Gordon Zander, Supervising Hydraulic Engineer

Dear Sir:

Herewith is submitted the annual report covering water master service within the Cow Creek Water Master District, Shasta County, California during the 1941 season.

The report covers the distribution of water on North Cow, Cedar, Oak Run and Clover Creeks and presents a general description of the work. Records of precipitation, runoff and other pertinent data are included.

Respectfully submitted

G. M. VICKROY
Water Master

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REPORT ON
WATER MASTER SERVICE
IN
COW CREEK WATER DISTRICT
SHASTA COUNTY, CALIFORNIA
1941 SEASON

INTRODUCTION

The Cow Creek Water Master District, Shasta County, California, was created by order of the Division of Water Resources, entered October 17, 1932, to include the water rights on North Cow Creek and its tributaries and on Oak Run Creek and its tributaries, in Shasta County, California which water rights were established by decrees entered by the Superior Court, Shasta County, California, on April 29, 1932, in the case of Charles L. Lemm, et al., v. John Rutherford, et al., No. 5804, and on July 22, 1932, in the case of F. A. Colby, et al., v. L. O. Strayer, et al., No. 5701, respectively. On January 21, 1938, said district was enlarged by "Order Changing Cow Creek Water Master District, Shasta County, California, and containing a Destription of all the Lands Within said District as so Changed," to embrace the water rights on Clover Creek and its tributaries, in Shasta County, California, as established by decree entered by the Superior Court, Shasta County, California, on October 4, 1937, in the case of Millville Ditch Company v. Jesse Hufford, et al., No. 6904. The foregoing procedure is in accordance with the provisions of Section 37 of the Water Commission Act.

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Water Master Service in the Cow Creek Water Master District for the 1941 season covered the regulation of diversions from North Cow Creek and its tributaries, Clover Creek and its tributaries and Oak Run Creek, within the scope of the said district as enlarged by said order of January 21, 1938, 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 July 1 to September 30. G. M. Vickroy administered the distribution of water from the streams within the district during the entire period under appointment as Water Master.

WATER SUPPLY

Precipitation

Data on precipitation, as compiled from records kept at Redding and McCloud, are presented in Table 1 of this report. Based upon these data the total precipitation for the 1940-41 season was 70.67 inches or 165 per cent of the mean for the 29 seasonal years - 1912 to 1941. Of this total 82 per cent fell during the period from October 1 to April 1, as compared to the 29 year mean of 81 per cent for the same period.

Stream Flow

Records of the net available flow of North Cow Creek, Cedar Creek, Oak Run Creek and Clover Creek, as determined for each stream by the summation of the amounts of water diverted by the various ditches therefrom plus the flow in the stream below the lower-most ditch, are shown in Tables 2, 3, 4 and 5, respectively. The records cover the period from July 1 to September 30, 1941.

Hydrographs plotted from the data contained in the above numbered tables are presented on Plates 1, 2, 3 and 4. A graph representing the irrigation demands on each stream has been superimposed upon the hydrograph for that stream, thereby showing a comparison between the net available supply and the demands thereon.

DISTRIBUTION OF WATER

North Cow Creek

The regulation of diversions from North Cow Creek was made in accordance with the allotments and priorities set forth in the decree in the case of Lemm v. Rutherford, No. 5804, Superior Court, Shasta County, California, entered April 29, 1932. The amounts of water available for distribution were as set forth in Table 2, submitted at the end of this report.

The available water was distributed on a continuous flow basis throughout the entire season, the supply being sufficient to provide 100 per cent of continuous flow allotments. No controversies as to water distribution were had during the 1941 season.

The Fassett, Hobson Upper, Ward Upper and Eldridge Middle Ditches were not used in 1941. As a step toward resuming use of the Ward Upper Ditch, R. A. Ward brought suit against Augusta A. Hobson to force permission to enter upon the Hobson property to rebuild the Ward Upper dam.

Cedar Creek

The diversions from Cedar Creek were regulated in accordance with the provisions of the above mentioned Lemm v. Rutherford decree. The amounts of water available for distribution were as set forth in Table 3, submitted at the end of this report.

The flow was in excess of all demands prior to July 1. On July 1, 100 per cent of allotments was available but the flow rapidly decreased to 35 per cent of allotments at the end of the month. Delivery of 35 per cent allotments was made throughout August and up to September 3. Rains on September 3 and subsequent thereto increased the flow to about 50 per cent of allotments for the remainder of the season, which terminated on September 30.

Oak Run Creek

The regulation of diversions from Oak Run Creek is governed by the provisions of the decree in the case of Colby v. Strayer, No. 5701 Superior Court, Shasta County, California, entered on July 22, 1932. The amounts of water available for distribution during the 1941 season are shown in Table 4, submitted at the end of this report.

The available water supply was sufficient to deliver 100 per cent of allotments throughout the season. Little or no regulation was required but frequent visits were made to each ditch during the period from July 1 to September 30 to make sure that all users were receiving a just diversion of the available water.

Clover Creek

The regulation of diversions from Clover Creek was made in accordance with the provisions of the decree in the case of Millville Ditch Company v. Hufford, No. 6904, Superior Court, Shasta County, California, entered on October 4, 1937. The amounts of water available for distribution are shown in Table 5, submitted at the end of this report.

The available flow was in excess of demands throughout the season. Little or no regulation was required but frequent visits to the various ditches were necessary during the period from July 1 to September 30 to make sure that each party was receiving his share of the available water.

TABLE 1

Average of Precipitation at Redding and McCloud - 1912 to 1941 (1)
Monthly, Seasonal and Average Amounts in Inches

Season	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Seasonal
1940-41	3.24	2.34	15.40	15.84	12.33	7.96	8.29	2.81	1.70	T	0.33	0.43	70.67
Totals	66.26	124.88	194.08	252.08	203.37	164.17	100.01	63.31	30.85	6.46	3.71	28.10	1237.28
Mean 29 years	2.28	4.31	6.69	8.70	7.01	5.66	3.45	2.18	1.06	0.22	0.13	0.93	42.66

(1) See 1940 Water Master Report for previous records.

TABLE 2

Net Available Flow in Cubic Feet per Second
NORTH COW CREEK
July 1 to September 30, 1941

Day	July	August	September
1	43.0	28.0	26.0
2	42.0	28.0	26.0
3	41.0	28.0	28.0
4	40.0	28.0	28.0
5	39.0	28.0	28.0
6	38.0	28.0	28.0
7	37.0	28.0	28.0
8	37.0	27.5	28.0
9	37.0	27.0	28.0
10	37.0	27.0	28.0
11	37.0	27.0	28.0
12	37.0	27.0	28.0
13	36.5	27.0	28.0
14	36.0	27.0	28.0
15	35.5	27.0	28.0
16	35.0	27.0	28.0
17	34.5	27.0	28.0
18	34.0	26.5	28.0
19	33.5	26.5	28.0
20	33.0	26.0	29.0
21	32.5	26.0	29.0
22	32.0	26.0	29.0
23	31.5	26.0	29.0
24	30.5	26.0	29.0
25	30.0	26.0	29.0
26	29.5	26.0	29.0
27	29.0	26.0	29.0
28	28.5	26.0	29.0
29	28.0	26.0	29.0
30	28.0	26.0	30.0
31	28.0	26.0	
Total	1070.5	831.5	848.0
Mean	34.7	26.8	28.3
Acre -Feet	2120	1650	1680

Total for 92 day period 5,450 acre-feet.

TABLE 3

Net Available Flow in Cubic Feet per Second
CEDAR CREEK
July 1 to September 30, 1941

Day	July	August	September
1	7.0	2.4	2.4
2	6.8	2.4	2.4
3	6.6	2.4	3.7
4	6.4	2.4	3.7
5	6.2	2.4	3.5
6	6.0	2.4	3.5
7	5.8	2.4	3.5
8	5.6	2.4	3.5
9	5.4	2.4	3.5
10	5.2	2.4	3.5
11	5.0	2.4	3.5
12	5.7	2.4	3.5
13	5.3	2.4	3.5
14	5.0	2.4	3.5
15	4.7	2.4	3.5
16	4.4	2.4	3.5
17	4.0	2.4	3.5
18	3.8	2.4	3.5
19	3.7	2.4	3.5
20	3.6	2.4	3.5
21	3.5	2.4	3.5
22	3.3	2.4	3.5
23	3.1	2.4	3.5
24	3.0	2.4	3.5
25	2.9	2.4	3.5
26	2.8	2.4	3.5
27	2.7	2.4	3.5
28	2.6	2.4	3.5
29	2.5	2.4	3.5
30	2.4	2.4	3.5
31	2.4	2.4	
Total	137.4	74.4	91.0
Mean	4.41	2.40	3.03
Acre-feet	272	148	180

Total for 92 day period 600 acre-feet.

TABLE 4

Net Available Flow in Cubic Feet per Second
OAK RUN CREEK
July 1 to September 30, 1941

Day	July	August	September
1	9.0	7.0	7.0
2	9.0	7.0	7.0
3	9.0	7.0	8.5
4	9.0	7.0	8.5
5	9.0	7.0	8.5
6	9.0	7.0	8.5
7	9.0	7.0	8.5
8	9.0	7.0	8.5
9	9.0	7.0	8.5
10	9.0	7.0	8.5
11	8.9	7.0	8.5
12	8.8	7.0	8.5
13	8.7	7.0	8.5
14	8.6	7.0	8.5
15	8.5	7.0	8.5
16	8.4	7.0	8.5
17	8.3	7.0	8.5
18	8.2	7.0	8.5
19	8.1	7.0	8.5
20	8.0	7.0	8.5
21	7.9	7.0	8.5
22	7.8	7.0	8.5
23	7.7	7.0	8.5
24	7.6	7.0	8.5
25	7.5	7.0	8.5
26	7.4	7.0	8.5
27	7.3	7.0	8.5
28	7.2	7.0	8.5
29	7.1	7.0	8.5
30	7.0	7.0	8.5
31	7.0	7.0	
Total	256.0	217.0	258.0
Mean	8.25	7.00	8.58
Acre-feet	508	430	512

Total for 92 day period 1,450 acre-feet.

TABLE 5

Net Available Flow in Cubic Feet per Second
CLOVER CREEK
July 1 to September 30, 1941

Day	July	August	September
1	40.0	28.0	27.0
2	40.0	28.0	27.0
3	40.0	28.0	28.0
4	40.0	27.0	28.0
5	40.0	27.0	28.0
6	39.5	27.0	28.0
7	39.0	27.0	28.0
8	38.5	27.0	28.0
9	38.0	27.0	28.0
10	37.5	27.0	28.0
11	37.0	27.0	28.0
12	36.5	27.0	28.0
13	36.0	27.0	28.0
14	35.0	27.0	28.0
15	34.0	27.0	28.0
16	33.5	27.0	28.0
17	33.0	27.0	28.0
18	32.5	27.0	28.0
19	32.0	27.0	28.0
20	32.0	27.0	28.0
21	32.0	27.0	28.0
22	32.0	27.0	28.0
23	32.0	27.0	30.0
24	32.0	27.0	30.0
25	32.0	27.0	30.0
26	31.5	27.0	30.0
27	31.0	27.0	30.0
28	29.0	27.0	30.0
29	28.5	27.0	30.0
30	28.0	27.0	30.0
31	28.0	27.0	
Total	1070.0	840.0	854.0
Mean	34.5	27.1	28.5
Acre-feet	212.0	1670.	1690.

Total for 92 day period 5,480 acre-feet.

PLATES

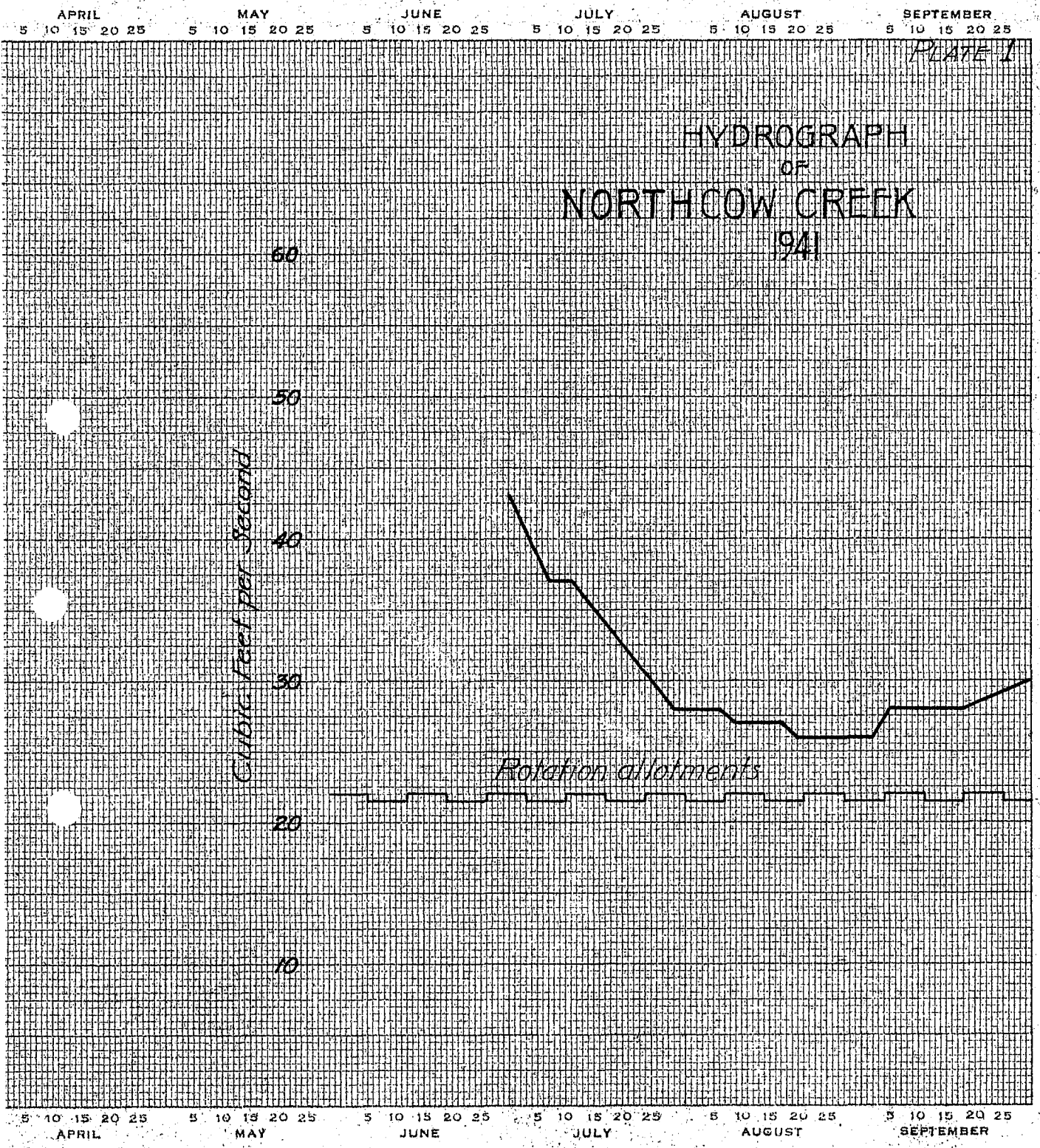


PLATE 1
HYDROGRAPH
OF
NORTHCOW CREEK
1941
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
5 10 15 20 25
60
50
40
30
20
10
Cubic feet per Second
Rotation allotments

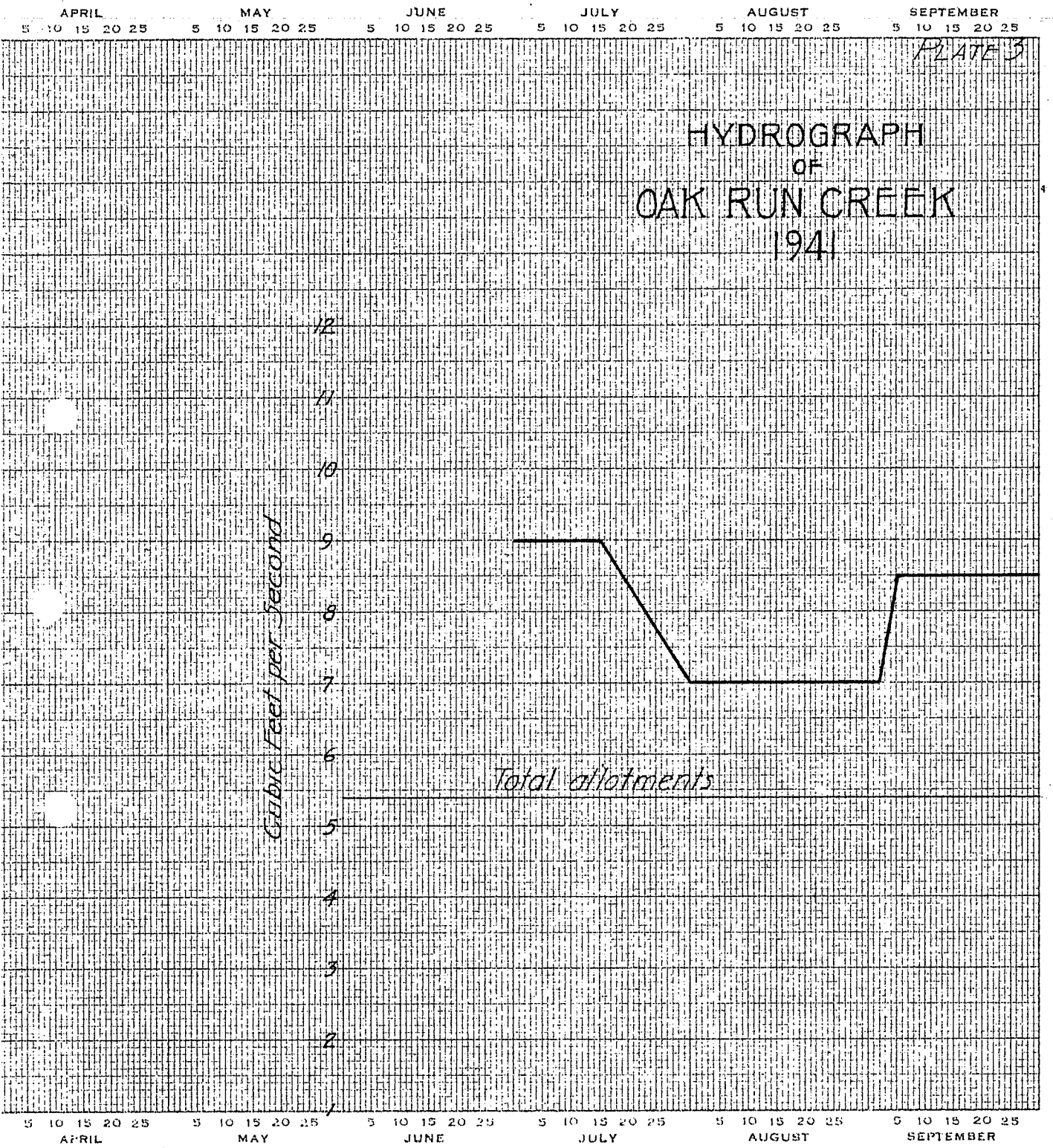
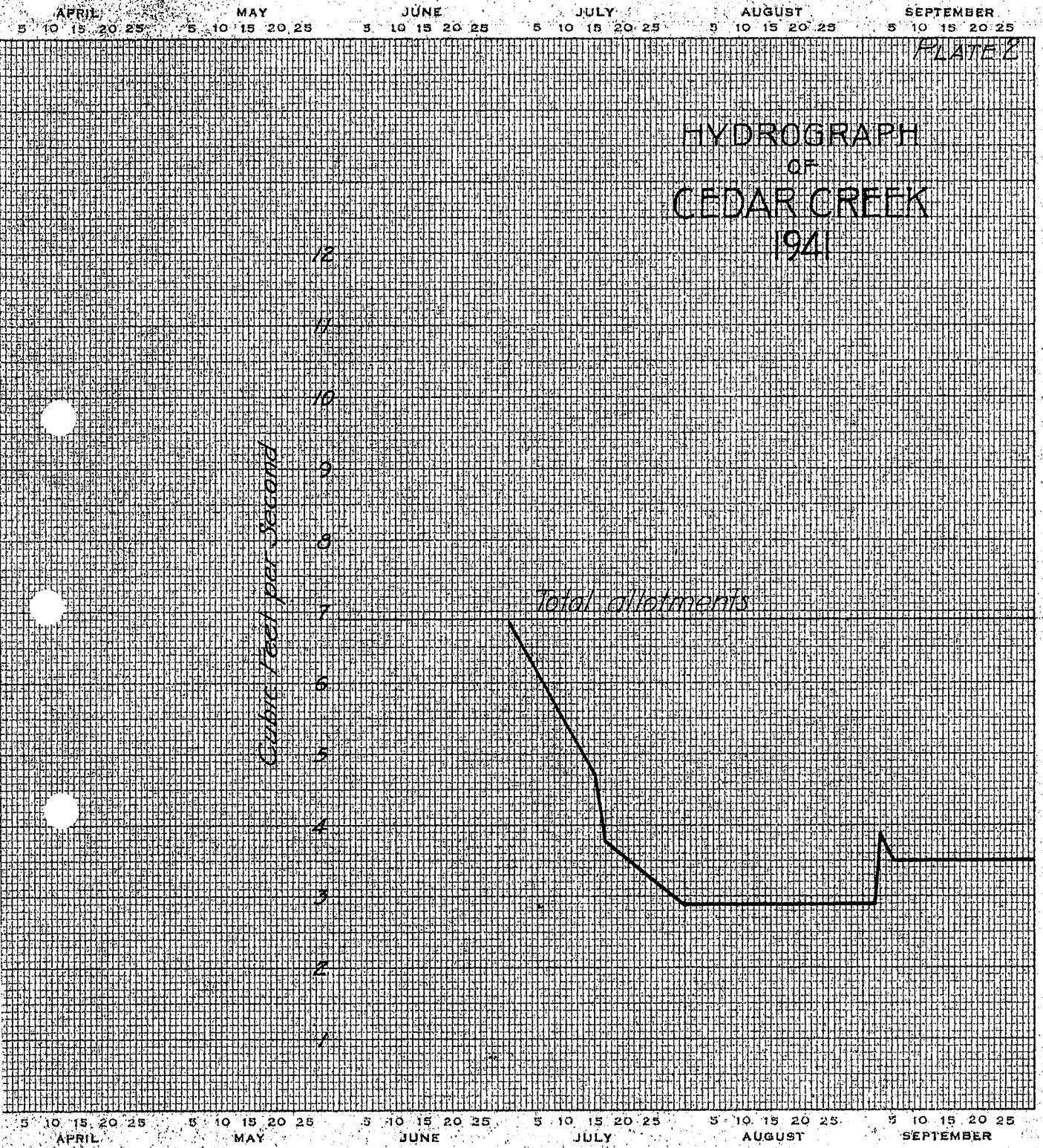


PLATE 3
HYDROGRAPH
OF
OAK RUN CREEK
1941
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
5 10 15 20 25
Cubic Feet per Second
12
11
10
9
8
7
6
5
4
3
2
1
Total allotments

PLATE 2

HYDROGRAPH OF CEDAR CREEK 1941



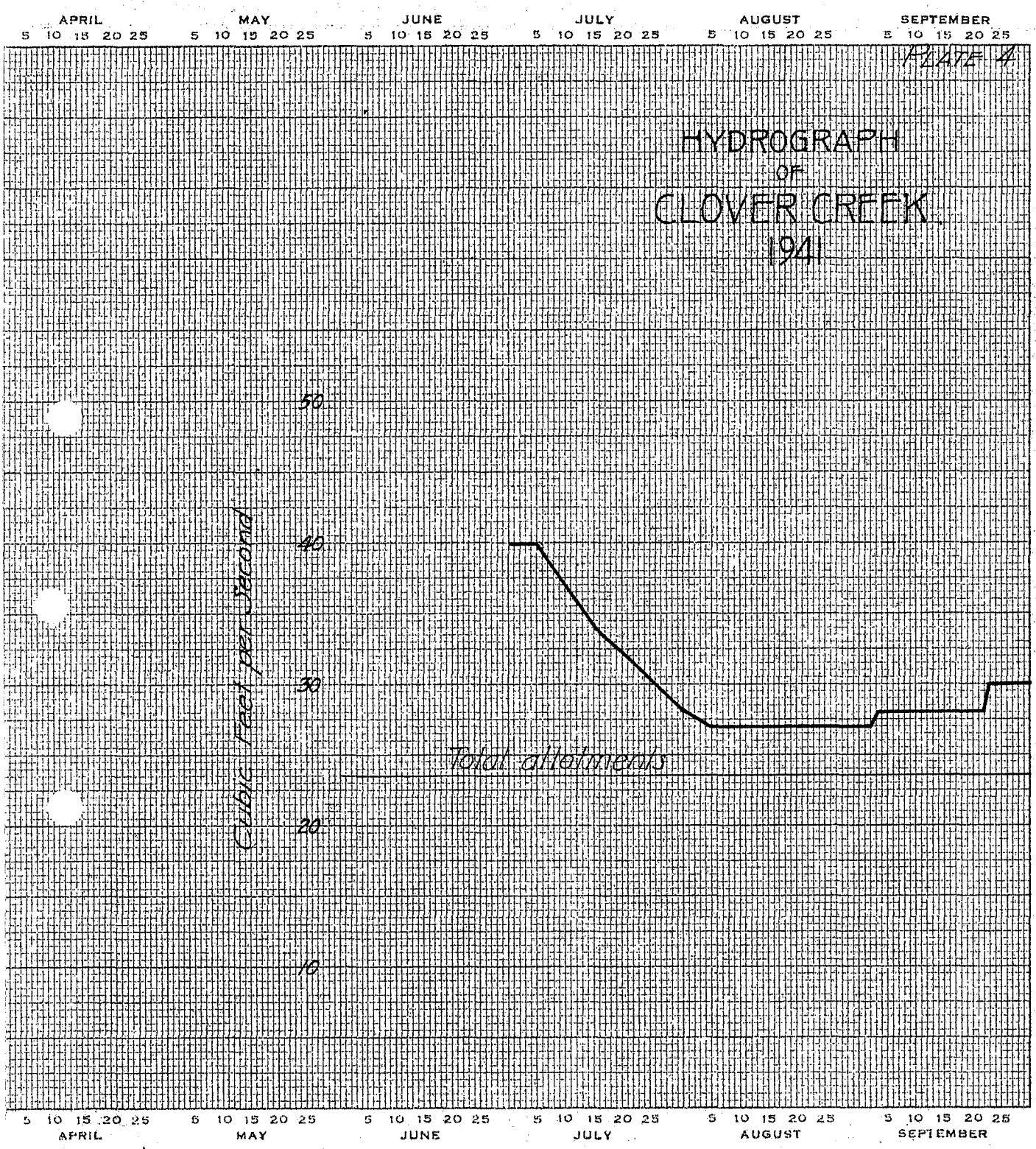


PLATE 4
HYDROGRAPH
OF
CLOVER CREEK
1941
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
5 10 15 20 25
50
40
30
20
10
Cubic Feet per Second
Total allotments