STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

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

REPORT ON

WATERMASTER SERVICE

ON

SHASTA RIVER AND ITS TRIBUTARIES

SISKIYOU COUNTY, CALIFORNIA

1944 Season

By

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DIVISION OF WATER RESOURCES
401 PUBLIC WORKS BUILDING

March 16, 1945

Mr. Harold Conkling
Deputy State Engineer
Sacramento, California

Attention: Mr. Gordon Zander
Supervising Hydraulic Engineer

Dear Sir:

Herewith is submitted the annual report covering watermaster service within the Shasta River Watermaster District, Siskiyou County, California, during the 1944 season.

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.

Respectfully submitted,

/S/ P. E. Stephenson
Assistant Hydraulic Engineer

FOR VICTORY
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STATES
SAVINGS
BONDS
AND STAMPS

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REPORT ON

WATERMASTER SERVICE

on

SHASTA RIVER AND ITS TRIBUTARIES

SISKIYOU COUNTY, CALIFORNIA

1944 Season

INTRODUCTION

The Shasta River Watermaster Service Area was created by order of the Division of Water Resources under date of March 1, 1933, to embrace the water rights on Shasta River and its tributaries in Siskiyou County, California, excepting certain tributaries and springs named in said order, as established by Decree of the Superior Court, Siskiyou County, California, in the Shasta River Proceeding No. 7035, entered on December 30, 1932. Subsequent to creation of the district, the boundaries were changed to exclude the water rights on Willow Creek and its tributaries by order of the Division of Water Resources under date of December 30, 1935.

Watermaster service in the Shasta River Watermaster Service Area was carried on throughout the 1944 season in accordance with the "Distribution of Water" procedure contained in Sections 4000 to 4560, inclusive, of the Water Code. Such service extended over the period from April 1 to September 30. P. E. Stephenson, Watermaster, Shasta River Watermaster District, administered the distribution of water from the streams within the district during the entire period.

WATER SUPPLY

Precipitation

Data on precipitation, as compiled from records of Division of Water Resources station at Edgewood, are presented in Table 1. Snow survey data taken at stations within and directly adjacent to the Shasta River water shed are presented in Table 2.

Based upon the data presented in Table 1, the total precipitation for the 1943-44 season was 10.93 inches or about 59 per cent of the mean for the ten-year period of record, 1934 to 1944. During the period October 1 to April 1, the precipitation was 5.68 inches as compared with the ten-year mean of 14.01 inches. The precipitation in April, May and June was 4.07 inches as compared with the ten-year mean of 3.62 inches.

Snow Surveys

A record of the water content of the snow at the Parks Creek, Sweetwater, North Fork of Sacramento and Mount Shasta snow survey courses as measured on or about April 1 of each year is presented in Table 2. The Parks Creek and Sweetwater courses are within the Parks Creek water shed at elevations 6,500 feet and 5,500 feet, respectively. The North Fork of Sacramento course lies on the south slope of the Eddy Mountains just outside the Shasta River water shed at 6,800 feet elevation. The Mount Shasta course is on the south slope of Mount Shasta at 8,000 feet elevation. The average water content of the snow at the four stations is considered representative of the snow pack on the Shasta River water shed. This average water content of the snow for the 1944 season was 16.8 inches or 50 per cent of the mean for the period of record which compares with the precipitation at Edgewood where the rainfall during the period October 1 to April 1 was 40 per cent of the ten-year period of record.

A curve has been developed for forecasting the run-off of Shasta River from the data presented in Table 2 together with that portion of the measured run-off of Shasta River, above the Yreka Ditch, which appears to be incidental to the melting snow. The period during which this run-off occurs varies considerably with the average water content of the snow pack as shown in the following tabulation:

Water-Content of Snow Inches	Period during which Run-Off occurs
Over 50	April 1 to July 31
30 to 40	April 1 to June 30
16 to 26	April 1 to May 31

A comparison of the measured run-off of Shasta River above the head of the Yreka Ditch with the estimated run-off, obtained by applying the average water content of the snow on April 1 to the above-mentioned curve, is shown in the following tabulation:

Year	Average Water-Content of Snow Inches	Run-Off in Acre-Feet	
		Measured	Estimated from Curve
1937	32.5	12,100 **	11,900
1938	55.0	30,200 ***	30,200
1939	17.1	3,000 *	3,300
1940	33.1	12,600 **	12,500
1941	56.8	32,000 ***	31,800
1942	30.2	13,200 **	10,500
1943	25.7	7,100 *	7,600
1944	16.8	3,600 *	3,200

* - April - May
** - April - May - June
*** - April - May - June - July

Accurate forecasts made on April 1 are important in the operation of Lake Dwinnell Reservoir, which must be held at or below a specified water surface elevation during the run-off season as a safety measure in protecting the Lake Dwinnell Dam.

Stream Flow

Stream flow measuring stations equipped with water-stage recorders were maintained on the streams listed below.

Shasta River above Edson-Foulke Yreka Ditch

Shasta River at Edgewood Bridge

Parks Creek above Duke North Ditch

Parks Creek above Robertson Ranch (8' weir)

Shasta River near Montague

Little Shasta River above Harp Ditch

The station on Shasta River at Edgewood Bridge was maintained throughout the winter months by the Montague Water Conservation District. The other stations are maintained only during the period of watermaster service, normally from April 1 to September 30 of each year.

Records of discharge compiled from the data obtained at the above-named stations are presented in Tables 3 to 8, inclusive.

Intermittent measurements were taken throughout the season on Carrick Spring and Cleland Springs, records of which are submitted in Tables 9 and 10, respectively.

Measuring stations equipped with water-stage recorders were also maintained on streams, reservoirs, and diversion conduits at critical-control points, as an aid in the distribution of the available water supply. A list of these stations follows:

Beaughan Creek below Long Bell Mill Pond

M. W. C. D. Parks Creek Canal at Head

Lake Dwinnell Reservoir

Soule Ditch at Head (4' weir)

Dennis Ditch at Head (3' weir)

Jones #1 and #2 Take-Outs from M.W.C.D. Shasta River Canal (4' weir)

M. W. C. D. Shasta River Canal

M. W. C. D. Shasta River Canal at Big Springs-Little Shasta Road

Carrick Creek at Head of Upper Jackson Ditch

Carrick Ditch at Head (2' Parshall Flume)

Little Shasta River at Rose Dam

The water supply during the 1944 season was about 50 per cent of normal for Upper Shasta River and Parks Creek. The run-off of Little Shasta River was less than any year since 1934 and was only 27 per cent of the 1943 season. The run-off of springs and spring-fed streams was about the same as during the 1943 season and there was sufficient water to supply all normal irrigation demands therefrom. A comparison of the run-off of the several streams in Shasta Valley during the irrigation season is submitted in Table 20.

Distribution of Water

Distribution for the 1944 season followed the practices initiated during the past seasons with little modification. The results accomplished in the several sections into which the stream system has been divided follow:

Shasta River above Confluence of Boles Creek

The water supply available to this area is the summation of the flow of Shasta River above the Edson-Foulke Yreka Ditch as set forth in Table 3, plus the combined discharge of the Dow Eddy Creek Ditch and the Hammond-Scott Ditch diverting from Eddy Creek. A summary of the distribution for the 1944 season is given in the following tabulation:

	Average Available Water Supply Cu.Ft.Per Sec.	Distribution in Per Cent of Priority Allotments		
		Hammond-Scott	Foulke, et al.	Dow
April	55	100	84	100
May	46	100	100	100
June	36	95	92	66
July	18	45	47	0
August	8	22	20	0
September	5	22	12	0

The available water supply in this area was sufficient to meet all demands until about June 15. Subsequent to that date there was insufficient water available to meet the demands of the Edson-Foulke Yreka Ditch and those ditches diverting from Eddy Creek.

Shasta River below Junction of Boles Creek and Boles Creek

One hundred per cent allotments were available for all priorities including storage rights of Montague Water Conservation District until about

June 25. Subsequent to this date the water was distributed on an equal and correlative basis among water right owners down to and including the Mills Ranch. Under this arrangement an average of 100 per cent allotments were delivered throughout the remainder of the season.

Shasta River below Lake Dwinnell Reservoir

Watermaster service on this section of the stream system involves the operation of the Montague Water Conservation District's Lake Dwinnell Reservoir during the irrigation season. The watermaster, in cooperation with the District, exercises control over deliveries from the reservoir both to the District and to the water right owners below the reservoir who receive water from the reservoir in lieu of their natural flow rights.

Deliveries to the water right owners below the reservoir are made in accordance with the respective agreements between the District and the several water right owners. In general each agreement sets forth the total acre-feet to which the water right owner is entitled and provides that delivery from the reservoir shall be made upon demand of the water user. The watermaster receives and attends to all requests for such service and regulates the discharge from the reservoir and the various diversion ditches accordingly. Regulation of deliveries to the District is also handled by the watermaster; firstly, to avoid draining the reservoir through excessive delivery to the District before the "in lieu rights" are satisfied; and, secondly, to eliminate the confusion that would result under dual regulation.

Deliveries to the District commenced on April 17 and continued until about September 15 during the 1944 season. Subsequent to September 15 there was insufficient storage remaining in the reservoir to release a large enough irrigation head to supply both prior right owners and the District.

Deliveries to water right owners below the dam commenced on April 17 and extended to September 30. All demands of the "in lieu rights" were

satisfied prior to about September 15 without curtailing delivery to the district. About 100 acre-feet of water remained in storage on October 1.

Summaries of the operation of the reservoir during the 1944 season are given in the following tabulations:

Operation of Lake Dwinnell Reservoir During 1944 Season

Date	Storage: On Hand Acre-Feet	Storage: Draft Acre-Feet	Inflow to Reservoir Acre-Feet	Total Draft Acre-Feet	Measured Release Acre-Feet	Seepage and Evaporation Loss from Reservoir Acre-Feet
April 1	14,200					
May 1	12,400	1,800	1,690	3,490	770	2,720
June 1	9,600	2,800	2,520	5,320	3,160	2,160
July 1	7,300	2,300	1,150	3,450	1,240	2,210
Aug. 1	3,600	3,700	590	4,290	2,790	1,500
Sept. 1	1,000	2,600	300	2,900	2,720	180
Oct. 1	100	900	200	1,100	960	140
Totals		14,100	6,450	20,550	11,640	8,910

Deliveries from Lake Dwinnell Reservoir
to
Prior Water Right Owners Below Reservoir
During 1944 Season

Name of Water Right Owner	Allotment as per Agreement Acre-Ft.	Amount Delivered From Lake Dwinnell Reservoir for 1944 Season: Acre-Feet	Per Cent of Allot
J. L. Jones	198	198	100
John Soule	692	692	100
J. W. & Mary L. Dennis	696	460 *	65 *
McKee Company	1,200	1,200	100
E. S. Terwilliger	596	0 *	0 *

*Leakage from reservoir provided additional water sufficient to supply full irrigation demands.

Summaries of Deliveries from Lake Dwinnell Reservoir
for 1944 Season

Month	Measured Release Acre-Feet	Deliveries in Acre-Feet			
		Prior Rights	M.W.C.D.	Wastage	
April	770	203	567		
May	3,160	736	2,424		
June	1,240	516	724		
July	2,790	509	2,281		
August	2,720	524	2,196		
September	960	62	898		
Totals	11,640	2,550	9,090 *		

* Includes about 2,600 acre feet conveyance loss.

Additional data pertaining to Lake Dwinnell Reservoir are contained in Tables 12, 13, 14, 15 and 16.

Beaughan Creek

One measurement was made during the 1944 season at the 8.0 foot rectangular weir (Long-Bell upper weir) located at the head of Beaughan Creek. The results are given below:

Data	Gage height in Feet	Discharge in C.F.S.
6-21-45	.37	5.92

This amount of water was sufficient to supply approximately 71 per cent of the total second priority allotments of 8.28 cubic feet per second. Distribution was made in accordance therewith during the 1944 season.

The Long-Bell Lumber Company diverts practically the entire flow of Beaughan Creek, including the downstream users' share of the available water, for use at its sawmill. After such use, the downstream users' share

of the water, which is 65 per cent of the measured flow at Long-Bell upper weir, must be returned to Beaughan Creek above the 2' Parshall Flume below Long-Bell Mill Pond. Based upon the measurement made during the 1944 season, the amount of water required at said Parshall Flume was 3.85 cubic feet per second. A record of delivery at this point is shown in Table 11. It will be noted from Table 11 that the daily discharge was considerably in excess of the required amount at all times. This excess was prorated among the various water right owners to provide approximately 85 per cent of second priority allotments.

Carrick Creek

There was sufficient water available during the 1944 season to satisfy all irrigation requirements throughout the entire season.

The results of intermittent measurements of Carrick Spring are set forth in Table 9.

The flow of Carrick Spring showed a decrease of about 9 per cent as compared to that recorded for the 1941 and 1942 seasons, but was approximately 18 per cent in excess of the average flow during the period 1934 to 1940, inclusive.

Parks Creek

Distribution on Parks Creek for the 1944 season was in accordance with the practices followed during the past seasons. A summary of the distribution made during the 1944 season is set forth in the following tabulation:

	Measured Water Supply c.f.s.	Distribution in Per Cent of Priority Allotments			
		Duke 1	Caledonia 2	Foulke, et.al. 3	Robertson: 4,6,11,15
April	24.8	100	100	90	89
May	41.4	100	100	100	100
June	16.8	100	29	70	75
July	5.5	87	0	0	19
August	3.2	53	0	0	8
September	2.0	33	0	0	3

Records of the flow available for the above distribution are set forth in Tables 4 and 5.

The fifth priority rights from the North Branch of Parks Creek were supplied with 100 per cent of their allotments until about June 15, however, the water available for these rights failed entirely by about July 1.

The 21st and 24th priority rights of M. A. Silva on the extreme lower end of Parks Creek received 100 per cent allotments throughout the season.

Big Springs

The Big Springs Irrigation District was supplied with irrigation water through their pumping plant during the entire 1944 season. The daily discharge of their pumping plant is set forth in Table 17.

Stalleup and Sons operated their pumping plant from April 10 to October 2 during the 1944 season. The pump was operated for a total of 163 days and pumped about 2430 acre-feet during this period.

Louie Brothers diverted water through the Louie-Rose and Coonrod ditches throughout the season.

The water supply of Big Springs during April was about 35 cubic feet per second. This supply increased during the season until an average of

about 43 cubic feet per second was available during August and September.

Lower Shasta River

The water supply for this section of the stream was in excess of requirements at all times. All ditches and pumping plants were operated without regulation during the season.

A record of the flow available to the water users below the Montague Bridge is presented in Table 7. Records of diversion by the Grenada Irrigation District and the Shasta River Water Association are submitted in Table 18 and 19, respectively. A summary of these data is given in the following tabulation:

Month	Average Diversion Grenada Irrigation District c.f.s.	Average Diversion Shasta River Water Association c.f.s.	Average Available Water Supply Fiock, et al. c.f.s.
April	29.5	21.4	103
May	20.7	31.4	61
June	14.4	23.0	85
July	17.0	31.7	45
Aug.	15.9	33.4	44
Sept.	19.8	25.7	63

Little Shasta River

Regulation was necessary on this stream beginning early in April when the available water supply was insufficient to satisfy the full requirements of the first five priority classes. The only water available for the higher priority classes was during the period when the upper ditches were being cleaned prior to about April 15.

The increased flow from Cleland Spring supplied enough supplementary flow to the natural flow of the creek to provide 100 per cent allotments throughout the season to the first four priority classes.

A summary of the distribution during the 1944 season is shown in the following tabulation:

Month	Available Water Supply: Cubic Feet Per Second	Available Water Supply: Per Cent of Total Allotments	Distribution in Per Cent of Priority Allotments: 1	2	3	4	5	6	7
April	28.5	36	100	100	100	100	70	0	0
May	25.7	33	100	100	100	100	50	0	0
June	18.7	24	100	100	100	100	35	0	0
July	13.1	17	100	100	100	100	20	0	0
August	12.7	16	100	100	100	100	20	0	0
September	12.5	16	100	100	100	100	20	0	0

Intermittent measurements of the discharge of Cleland Springs are recorded in Table 10. The following tabulation was compiled from measurements made during the period 1935 to 1944, inclusive.

Cleland Spring

Year	Discharge - Cubic Feet Per Second: Beginning of Season	End of Season	Mean
1935	6.81	6.62	6.65
1936	6.50	6.72	6.60
1937	6.50	6.78	6.65
1938	7.10	10.00	7.70
1939	8.77	8.25	8.44
1940	7.84	9.56	8.48
1941	8.39	9.04	8.60
1942	8.20	9.20	8.70
1943	10.50	11.10	10.80
1944	10.20	11.40	10.60

It will be noted that although the discharge at the end of the 1944 season was greater than any other measurement during the period of record, the mean for the season showed a slight decrease from the 1943 season.

OWNERSHIP OF LANDS AND WATER RIGHTS WITHIN SHASTA RIVER WATERMASTER SERVICE AREA

Changes in Ownership

The changes in ownership of lands and water rights which have occurred subsequent to filing "Statement for Shasta River Watermaster Service Area, County of Siskiyou, State of California for 1944" and which shall be included in the statement for said watermaster service area for 1945, are listed in the following tabulation:

Tract No.	Name of Water Right Owner Appearing in 1944 Statement	Name of Water Right Owner To Appear in 1945 Statement	Amount of Water c.f.s
5-59	Bray, Walter J.	Bray, Walter J. Estate of	0.64
5-87	Capital Company, a corporation	Davis, LeRoy and Davis, Grace M.	5.30
5-51	deSoza, Estate of Manuel	deSoza, George et al in Trust and deSoza, Annie	5.95
5-34	Foster, George H.	Barnes, Loren B. and Barnes, Mary B.	1.75
5-13, 5-30, 5-31	Haight, George M.	Haight, Estate of George M.	6.04
5-46, 5-14, 5-28	Hart, Kate C.	Hart, Raymond E. and Hart, Gladys I.	2.36
5-47	Hart, Kate C.	Hart, Kate C.	14.79
5-76, 5-83	Jackson, Estate of S. H.	Jackson, Samuel Clinton; Jackson, Henry Clifford and Jackson, Pearl E.	5.77
5-39	Keep, Sarah J.	Fiock, Earl	1.70
5-55	Louie, John; Louie, Manuel, and Louie, Frank	Louie, Ellis	19.10
5-15	Martin, W. T.	Richman, R. E; Rehling, Fred and Brown, Orrin	3.24

Tract No.	Name of Water Right Owner Appearing in 1944 Statement	Name of Water Right Owner To Appear in 1945 Statement	Amount of Water c.f.s.
5-49,5-68			
5-69	Mills, Estate of Frank H.	Mills, Maybelle B.	12.75
5-24	Montague Water Conservation District (Fairchild Tract)	Buell, W. E.	1.09
5-71	Nelson, Estate of Cecelia	Nelson, Gus; Nelson, Ed; and Erickson, Minnie G.	2.70
5-56	Silva, M. A.	Solus, Frank H.; Solus, Rose A. and Solus, Harry A.	2.98
5-17	Soule, Ella D. and Soule, Estate of Clarence W.	Soule, Ella D.	2.33
5-105	Sullivan, Estate of Georgeanna	Krum, William E.; Krum, Rita Ruth; Meline, Elmer H.; and Meline, Inez Mary	1.69
5-5	Terwilliger, Henry D.; Terwilliger, Phillip E; and Terwilliger, Sidney	Terwilliger, Phillip E. and Terwilliger, Sidney	2.72

TABLE 1

PRECIPITATION AT EDGEWOOD - ELEVATION 3952

Monthly, Seasonal, and Average Amounts in Inches

1934--1945

Season	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Seasonal
1934-35	1.30	3.53	1.08	1.63	1.15	2.62	2.58	0.43	0.57	0.38	0.06	0.21	15.56
1935-36	.81	.82	1.51	3.15	1.65	1.22	1.08	1.04	.45	.15	.00	.13	12.01
1936-37	.00	.00	.41	1.90	1.28	3.53	.86	1.06	1.27	.00	.00	.33	10.64
1937-38	1.52	3.49	4.24	3.47	5.45	5.16	.96	.89	.55	.08	.00	.60	26.21
1938-39	1.31	1.79	.44	1.17	.53	1.79	.56	.37	.51	.53	.37	1.27	10.62
1939-40	1.27	.38	5.77	2.45	5.37	3.12	.92	.91	.68	.01	T	2.61	23.49
1940-41	2.61	.64	9.30	2.26	7.86	6.36	4.51	1.55	1.42	.29	.78	.07	37.64
1941-42	1.87	1.42	4.69	3.83	3.01	.58	3.09	2.53	.61	.00	.90	.00	22.53
1942-43	.70	3.17	2.29	3.92	1.74	1.78	1.71	0.20	1.02	.09	.00	.05	16.65
1943-44	2.31	1.28	.85	.61	.66	.00	1.79	1.37	.91	.85	.33	.00	10.93
1944-45	0.97	2.91	.81	.94	3.60	E 1.60	E .80	2.51	.34	0	0	0	14.48
Totals	~~15.70~~ 14.67	~~16.45~~ 19.36	~~30.58~~ 31.39	~~24.40~~ 25.34	~~28.70~~ 32.30	~~26.16~~ 27.76	18.06 18.86	~~10.55~~ 12.86	~~7.79~~ 8.13	~~2.40~~ 2.40	~~2.44~~ 2.44	~~5.23~~ 5.25	~~186.23~~ 200.76
11 10 Year Mean	~~1.37~~ 1.33	~~1.65~~ 1.76	~~3.06~~ 2.85	~~2.44~~ 2.35	~~2.87~~ 2.94	~~2.62~~ 2.52	~~1.81~~ 1.72	~~1.03~~ 1.17	~~.78~~ .74	~~.24~~ .22	~~.24~~ .22	~~.52~~ .48	~~18.65~~ 18.25

TABLE 2

Snow Survey Data

Year	Water Content of Snow as of April 1 - Inches				
	Parks Creek Elevation-6,500	Sweetwater Elevation-5,500	Mt. Shasta Elevation-8,000	N.Fk. Sacramento Elevation-6,800	Average
1936	36.8	16.5	39.4	21.6	
1937	31.8	18.4	43.4	35.5	32.3
1938	33.5	27.0	120.4	39.1	55.0
1939	24.8	10.5	23.5	9.9	17.1
1940	36.3	6.3	67.4	22.2	33.1
1941	54.6	18.8	108.6	45.3	56.8
1942	33.1	12.7	52.7	22.5	30.2
1943	34.2	11.8	41.5	15.4	25.7
1944	18.2	7.7	28.6	12.6	16.8
1945	29.3	10.9	46.7	19.9	26.7

TABLE 3

Daily Discharge in Cubic Feet per Second

SHASTA RIVER ABOVE EDSON-FOULKE YREKA DITCH

April 1 to September 30, 1944

Day	Apr.	May	June	July	Aug.	Sept.
1	24	37	36	22	9	5
2	27	33	43	21	10	4
3	35	33	37	20	9	4
4	35	36	29	19	9	4
5	31	43	29	19	9	3
6	27	54	29	20	9	3
7	26	37	30	19	8	3
8	27	56	31	19	8	3
9	22	52	30	18	7	3
10	20	48	29	17	7	3
11	38	44	29	16	7	3
12	29	34	31	16	7	3
13	25	32	29	14	7	3
14	24	38	32	12	6	3
15	28	41	27	12	6	3
16	19	32	25	10	6	3
17	19	35	21	10	6	3
18	18	31	25	10	5	3
19	20	27	20	10	5	3
20	20	27	21	10	4	3
21	19	27	24	10	4	4
22	18	29	20	10	4	4
23	24	28	20	9	4	4
24	27	27	20	9	4	4
25	21	25	22	9	3	4
26	27	25	22	9	3	4
27	24	28	24	12	3	4
28	25	32	25	10	3	4
29	29	36	21	9	3	4
30	33	39	21	9	3	4
31		41		9	3	
Tot. Sec. Ft. Days	729	1,097	800	419	181	105
Mean Sec. Feet	24.3	35.4	26.7	13.5	5.8	3.5
Total Acre Feet	1,450	2,170	1,580	830	360	210

Total Acre-Feet for 183 Day Period - 6,600

TABLE 4

Daily Discharge in Cubic Feet per Second

PARKE CREEK ABOVE DUKE NORTH DITCH

April 1 to September 30, 1944

Day	Apr.	May	June	July	Aug.	Sept.
1	29	51	38	8	4	2
2	33	53	33	7	4	2
3	38	56	28	7	4	2
4	38	62	23	7	4	2
5	33	73	23	7	4	2
6	32	76	22	7	4	2
7	28	75	19	7	4	2
8	27	69	19	7	4	2
9	25	63	21	7	4	2
10	24	51	19	7	4	2
11	28	44	19	6	4	2
12	26	36	16	6	4	2
13	23	34	15	5	4	2
14	15	34	17	5	3	2
15	16	31	16	5	3	2
16	14	32	14	5	3	2
17	13	31	13	5	3	2
18	13	29	14	5	3	2
19	13	30	14	5	3	2
20	13	27	14	5	3	2
21	13	32	15	5	3	2
22	16	31	14	5	3	2
23	20	28	12	5	3	2
24	29	21	11	5	2	2
25	25	21	10	5	2	2
26	25	21	10	4	2	2
27	36	30	9	4	2	2
28	29	38	9	4	2	2
29	37	33	8	4	2	2
30	45	41	8	4	2	2
31		38		4	2	
Tot. Sec. Ft. Days	745.0	1282.0	503.0	172.0	98.0	60.0
Mean Sec. Feet	24.8	41.4	16.8	5.5	3.2	2.0
Total Acre Feet	1,480	2,540	1,000	340	190	120

Total Acre-Feet for 183 day period - 5,670

TABLE 5

Daily Discharge in Cubic Feet per Second

PARKS CREEK AT ROBERTSON WEIR

April 1 to September 30, 1944

Day	Apr.	May	June	July	Aug.	Sept.
1	16	16	16	6.1	1.9	0.5
2	16	16	16	6.4	3.7	.5
3	16	16	16	5.6	2.7	.5
4	16	16	16	4.7	2.7	.5
5	16	16	16	3.9	3.1	.5
6	16	16	16	3.9	2.6	.5
7	16	16	16	3.9	1.6	.5
8	16	16	16	3.7	1.4	.5
9	16	16	14.4	3.1	1.4	.5
10	16	16	13.8	2.6	1.4	.5
11	16	16	13.8	2.2	1.4	.5
12	16	16	11.4	2.6	1.3	.5
13	16	16	9.7	2.9	1.0	.5
14	8.6	16	9.4	2.9	1.1	.5
15	7.8	16	12.0	3.3	1.1	.5
16	8.1	16	10.8	3.1	1.0	.5
17	8.4	16	10.2	2.7	1.0	.5
18	9.2	16	10.2	2.7	.8	.5
19	9.2	16	10.2	2.7	.6	.5
20	12.5	16	10.0	1.9	.6	.5
21	11.1	16	10.0	1.9	.6	.5
22	16	16	10.0	1.9	.6	.5
23	16	16	10.0	1.9	.6	.5
24	16	16	10.0	1.7	.7	.5
25	16	16	10.5	1.6	.9	.5
26	16	16	10.2	1.7	.8	.5
27	16	16	10.0	3.7	.7	.5
28	16	16	10.0	2.9	.7	.5
29	16	16	8.9	2.4	.6	.5
30	16	16	7.6	2.4	.6	.5
31		16		1.7	.6	
Tot. Sec. Ft. Days	426.9	496.0	361.1	94.7	39.8	15.0
Mean Sec. Feet	14.2	16.0	12.0	3.1	1.3	.5
Total Acre Feet	860	980	720	190	80	30

Total Acre-Feet for 183 day period - 2,850

TABLE 6

Daily Discharge in Cubic Feet Per Second
SHASTA RIVER AT EDGEWOOD BRIDGE
October 1 to September 30, 1944

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	12	30	30	30	65	77	28	28	37	9	8	11
2	12	30	30	35	77	76	28	32	50	11	10	10
3	12	30	30	38	84	80	28	29	35	11	10	10
4	12	30	30	35	54	106	37	34	27	11	10	8
5	12	30	30	30	48	81	34	58	21	11	10	8
6	11	28	29	30	47	76	28	90	18	11	9	8
7	11	27	29	30	45	84	24	100	17	10	9	8
8	11	26	29	32	124	84	30	93	17	9	9	8
9	11	26	28	35	62	133	33	84	21	10	9	8
10	12	26	28	33	38	133	28	65	19	11	9	8
11	12	26	28	33	39	114	27	58	19	8	9	8
12	12	26	28	33	54	106	59	41	19	9	8	8
13	13	26	28	43	62	96	36	30	17	8	8	8
14	13	26	28	46	65	81	28	32	22	8	8	8
15	13	26	28	46	60	78	27	72	18	8	8	8
16	13	26	28	44	59	69	27	41	18	8	8	8
17	14	26	28	48	59	69	24	41	17	8	6	9
18	15	40	28	41	65	80	22	41	17	9	7	9
19	16	64	29	38	77	76	24	28	17	9	8	8
20	17	90	38	37	74	65	24	22	17	8	8	8
21	18	50	35	34	80	64	24	22	21	9	8	9
22	19	44	32	38	50	61	22	21	19	9	8	10
23	24	38	30	74	50	60	24	19	17	9	8	10
24	28	36	30	61	50	60	36	17	15	9	8	9
25	36	34	30	52	57	57	28	17	15	9	9	9
26	34	30	30	45	52	45	26	17	11	10	8	9
27	40	30	30	42	68	41	25	18	10	13	8	9
28	33	30	30	35	73	39	24	19	10	12	8	9
29	31	30	30	37		35	24	24	10	11	8	10
30	38	30	30	38		32	22	41	10	11	8	10
31	31		30	40		30		39		9	9	
Total	586	1,011	921	1,231	1,788	2,288	851	1,273	581	298	261	265
Mean	18.9	33.7	29.7	39.7	63.8	72.1	28.4	41.1	19.4	9.6	8.4	8.8
Ac.-Ft.	1,160	2,000	1,830	2,440	3,550	4,540	1,690	2,520	1,150	590	520	520

Total Acre-Feet 22,510

TABLE 7

Daily Discharge in Cubic Feet per Second

Shasta River Near Montague

April 1 to September 30, 1944

Day	Apr.	May	June	July	Aug.	Sept.
1	136	82	74	22	82	40
2	136	87	89	20	105	46
3	124	89	100	28	103	42
4	111	86	84	34	100	43
5	111	86	82	46	91	44
6	95	80	103	48	62	44
7	79	69	98	56	34	40
8	84	64	89	44	34	42
9	98	53	79	38	34	62
10	96	42	65	39	32	65
11	93	40	70	31	29	65
12	102	42	70	34	29	69
13	100	44	52	34	31	69
14	93	52	44	34	33	67
15	94	50	42	29	37	65
16	94	58	59	28	36	56
17	93	54	75	29	30	34
18	84	62	89	33	29	39
19	75	58	91	32	29	61
20	87	53	93	29	29	70
21	93	44	96	42	28	74
22	87	43	111	52	26	79
23	87	42	122	36	29	87
24	144	40	126	30	31	91
25	138	42	126	32	33	82
26	120	42	126	69	33	89
27	120	52	122	100	34	82
28	115	47	111	107	36	82
29	105	69	44	87	37	82
30	102	119	23	74	39	82
31		93		84	40	
Tot. Sec. Ft. Days	3,094	1,884	2,555	1,401	1,355	1,893
Mean Sec. Feet	103	60.8	85.2	45.2	43.7	63.1
Total Acre Feet	6,140	3,740	5,070	2,780	2,690	3,750

Total Acre-Feet for 183 day period - 24,200

TABLE 8

Daily Discharge in Cubic Feet per Second

LITTLE SHASTA RIVER ABOVE HARP DITCH

April 1 to September 30, 1944

Day	Apr.	May	June	July	Aug.	Sept.
1	18	24	12	4	2	2
2	16	24	11	4	2	1
3	15	24	15	4	2	1
4	15	34	13	4	2	1
5	15	24	11	4	2	1
6	13	26	9	4	2	1
7	13	24	9	4	2	1
8	15	20	8	3	2	1
9	15	17	10	3	2	1
10	16	16	10	3	1	1
11	18	14	8	3	1	1
12	18	13	7	3	1	1
13	17	12	7	3	1	1
14	14	12	8	3	1	1
15	16	12	8	2	1	1
16	15	11	9	2	1	1
17	13	12	9	2	1	1
18	13	13	8	3	1	1
19	17	13	8	2	1	1
20	24	13	8	2	1	1
21	22	13	10	2	1	1
22	20	12	10	2	1	1
23	22	12	7	2	1	1
24	29	12	7	2	1	1
25	26	12	6	2	1	1
26	24	12	6	2	1	1
27	21	11	5	2	1	1
28	21	11	5	2	1	1
29	23	11	5	2	1	1
30	24	12	5	2	1	2
31		10		2	1	
Tot. Sec. Ft. Days	548.0	476.0	254.0	84.0	40.0	32.0
Mean Sec. Feet	18.3	15.4	8.47	2.7	1.3	1.1
Total Acre Feet	1090	940	500	170	80	60

Total Acre-Feet for 183 day period - 2,840

TABLE 9

Discharge in Cubic Feet Per Sec.

CARRICK SPRING

April 1 to September 30, 1944

Day	April	May	June	July	Aug.	Sept.
1		6.8				
2						
3	7.1					
4						7.0
5			6.9			
6						
7					7.0	
8						
9						
10	7.0			6.9		
11						
12						7.0
13						
14						
15		6.8				
16						
17						
18						
19			7.0			
20						
21	6.7				6.9	
22						
23						
24				7.0		
25		6.8				6.9
26	6.5					
27						
28					6.9	
29			6.9			
30						
31						
Mean Sec. Feet	6.8	6.8	6.9	6.9	6.9	6.9
Total Ac. Ft.	390	400	410	420	420	410

Total Acre-Feet for 183 day period - 2,450

TABLE 10

Discharge in Cubic Feet Per Second

CLELAND SPRING

April 1 to September 30, 1944

Day	April	May	June	July	Aug.	Sept.
1						
2						
3						
4						
5			10.2			
6						
7						
8		10.4				
9						
10				10.3		
11						11.4
12	10.2					
13						
14						
15						
16						
17						
18						
19			10.2			
20						
21					11.4	
22						
23		10.3				
24						
25						
26						
27						
28						
29						
30						
31				10.4		
Mean Sec. Feet	10.2	10.3	10.2	10.4	11.4	11.4
Total Ac. Ft.	600	630	600	640	700	670

Total acre-feet for 183 day period - 3,840

TABLE 11

Daily Discharge in Cubic Feet Per Second

Beaughan Creek Below Long Bell Mill Pond

July 15 to September 30, 1944

Day	July	August	September
1		4.3	4.5
2		4.8	4.8
3		4.4	5.1
4		4.3	5.0
5		3.9	4.6
6		4.8	4.7
7		4.3	4.7
8		4.3	4.7
9		4.3	4.6
10		4.0	5.0
11		4.3	4.6
12		4.3	4.6
13		4.3	4.6
14		4.2	4.6
15	4.7	4.1	4.7
16	5.0	3.9	4.6
17	5.0	3.5	5.1
18	5.4	4.6	4.9
19	5.1	4.7	4.9
20	4.9	4.7	4.8
21	4.9	4.5	4.5
22		4.3	4.6
23		4.2	4.5
24		4.2	4.7
25		4.2	4.6
26		4.2	4.7
27		4.2	4.7
28		4.7	4.5
29	4.1	4.5	4.5
30	4.5	4.4	4.6
31	4.0	4.4	
Total Sec. Feet Days	47.6	133.8	141.0
Mean Sec. Ft.		4.32	4.70

TABLE 12

Daily Discharge in Cubic Feet Per Second

M.W.C.D. PARKS CREEK CANAL AT HEAD

May 28 to June 6, 1944

Day	May	June
1		20
2		33
3		18
4		10
5		4
6		1
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
12		
22		
23		
24		
25		
26		
27		
28	2	
29	7	
30	24	
31	22	
Total Sec.Ft.Days	55	86
Acre-Feet	109	170
Total Acre-Feet		279

TABLE 13

Daily Storage On Hand in Acre-Feet
LAKE DWINNELL RESERVOIR
October 1, 1943 to September 30, 1944

Day	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.
1	4,870						14,200	12,400			3,420	980
2								12,300				
3								12,200		7,100		
4								12,200				760
5							14,000	12,100	9,200	6,840		
6						12,300		12,100				
7								12,100				
8								12,000				440
9								11,900	8,920			
10			8,070		10,300		14,000			6,180		
11												380
12												
13												
14							13,800			5,490	3,150	
15				8,700		13,800		11,600				
16												280
17							13,700					
18												
19								11,200			2,660	250
20												
21							13,400			5,070	2,430	
22							13,300	10,800				
23							13,200				2,130	
24							13,100					
25							13,000			4,480		
26							12,900	10,200				
27							12,900					
28							12,800		7,710	4,050	1,380	
29							12,600	9,900				
30	4,800						12,500		7,350			90
31								9,600		3,700		

TABLE 14

Daily Release in Cubic Feet Per Second

LAKE DWINNELL RESERVOIR

April 17 to September 30, 1944

Day	April	May	June	July	August	Sept.
1		34	30	40	18	50
2		36	30	40	6	45
3		41	30	42	6	40
4		46	30	45	6	35
5		46	26	42	6	40
6		46	26	40	6	35
7		46	26	40	6	30
8		51	26	40	6	25
9		56	16	40	6	20
10		56	6	47	6	15
11		56	6	55	6	10
12		56	12	55	6	10
13		56	18	55	6	10
14		56	18	46	8	10
15		56	18	38	25	10
16		56	18	25	42	10
17	14	56	18	0	45	10
18	28	56	18	0	45	10
19	28	56	16	16	49	10
20	28	56	14	55	54	10
21	28	56	14	56	59	5
22	28	56	14	58	63	5
23	28	56	16	58	70	5
24	26	56	18	58	76	5
25	23	56	18	64	72	5
26	28	52	18	70	68	5
27	32	48	20	70	66	5
28	32	48	30	62	62	5
29	32	52	37	51	60	5
30	32	55	39	47	57	5
31		42		39	53	
Tot. Sec. Ft. Days	387	1,595	626	1,394	1,064	485
Mean Sec. Feet	27.6	51.4	20.7	44.8	34.3	16.2
Total Acre Feet	770	3,160	1,240	2,790	2,720	960

Total Acre-Feet - 11,600

TABLE 15

Summary of Deliveries to Prior Right Owners From
LAKE DWINNELL RESERVOIR
1929 to 1945

Year	Deliveries in Acre-Feet						Deliveries in per cent of Allotment
	Jones	Soule	Dennis	McKee	Terwilliger *	Total	
1929	---	---	---	---	---	---	---
1930	190	485	465	923	---	2060	61
1931	198	473	473	909	---	2050	61
1932	---	---	---	---	---	---	---
1933	198	692	687	1130	101	2810	83
1934	159	692	461	922	159	2390	71
1935	198	609	600	1075	234	2720	80
1936	198	657	527	1195	202	2759	82
1937	198	633	489	1200	120	2690	80
1938	198	---	---	1073	---	1271	38
1939	198	692	687	1138	308	3023	90
1940	198	471	562	1105	0	2336	69
1941	198	561	651	1200	51	2641	76
1942	198	344	618	1200	0	2360	70
1943	198	509	443	1200	0	2350	70
1944	198	692	460	1200	0	2550	76
1945	199	571	200	1050	0	2220	65

1929 - Record of deliveries missing.

1930--1931 - Record of deliveries to Terwilliger missing.

1932 - Records missing.

1938 - Soule, Dennis and Terwilliger had sufficient water from reservoir seepage to supply irrigation demands.

1940--1941 - Reservoir seepage supplied additional water for Soule, Dennis and Terwilliger.

1942--1943

1944 - 1945

*Accretions to the flow of Shasta River through the Dennis Ranch provide additional water, which is available for diversion by E. S. Terwilliger, in amounts more than sufficient to make up the shortage in the amounts of water delivered from the reservoir.

TABLE 16

RECORD OF OPERATION OF LAKE DWINNELL RESERVOIR - 1929 to 1944 5

Year	Reservoir Storage on April 1 Ac. Ft.	Inflow Apr. 1 to Sep.30 Ac. Ft.	Total Available Water Supply Ac.Ft.	Maximum Storage in Reservoir Ac.Ft.	Maximum Storage in Reservoir Date	Delivery From Reservoir: M. W. C. D. Ac. Ft.	M. W. C. D. Period	Prior Rights Ac.Ft.	Prior Rights Period	Total Ac.Ft.	Storage In Res. When Delivery To MWCD Ceased Ac.Ft.	Seepage and Evaporation Loss Ac.Ft.
1929				4,500		No Record(a)		No Rec'd				
1930				10,500	Mar. 14	5,000	5/5/30-7/4/30	2,060	4/23/30-9/5/30	7,060	2,800	
1931				4,250	Apr. 4	0		2,050	4/1/31-7/25/31	2,050	2,800	
1932	5,500			5,500	Mar. 20	2,000	5/15/32-6/15/32	No Rec'd		2,000	2,000	
1933	5,200			6,500	May 3	4,750	4/21/33-7/16/33	2,810	4/10/33-9/3/33	7,560	2,200	
1934	4,850			5,000	April 5	1,500	4/10/34-4/23/34	2,390	4/5/34-7/22/34	3,890	2,800	
1935	5,000	4,620	9,620	5,700	May 10	2,700	5/10/35-6/2/35	2,720	4/9/35-8/11/35	5,420	3,000	4,200
1936	5,460	4,720	10,180	6,020	Mar. 3	1,560	4/14/36-5/20/36	2,760	4/14/36-8/11/36	4,320	3,250	5,860
1937	5,940	14,040	19,980	9,800	May 6	7,360	5/5/37-9/15/37	2,690	4/26/37-9/9/37	10,050	0	9,930
1938	31,600	28,440	60,040	32,100	May 3	23,910(b)	5/1/38-9/30/38	1,270	5/1/38-9/30/38	25,180	2,850	~~54,860~~ 32,010
1939	7,350	1,210	8,560	7,350	April 1	2,350	4/9/39-5/5/39	3,020	4/4/39-8/10/39	5,370	3,525	3,190
1940	27,350	18,000	45,350	28,000	April 6	18,570(c)	4/22/40-9/18/40	2,340	4/17/40-9/30/40	20,900	2,540	22,040
1941	31,680	48,060	79,740	34,400	April 4	36,490(d)	4/1/41-9/30/41	2,640	5/1/41-9/30/41	39,130	13,600	27,010
1942	25,700	20,600	46,300	29,100	June 6	12,940(e)	4/13/42-9/30/42	2,360	4/15/42-9/30/42	15,300	10,000	21,000
1943	33,100	12,880	45,980	33,400	April 5	19,770(f)	4/13/43-9/30/43	2,350	4/15/43-9/30/43	22,120	4,900	18,960
1944	14,200	5,370	19,570	14,200	April 1	9,030	4/17/44-9/30/44	2,550	4/17/44-9/30/44	11,580	90	7,900

(Explanatory Notes on Next Sheet)

TABLE 16 - CONTINUED

RECORD OF OPERATION OF LAKE DWINNELL RESERVOIR--1929 to 1944

(a) In 1929 the District used water only for puddling its canal.

(b) Includes 831 acre-feet wasted through outlet to prevent increase in reservoir level and 9980 acre-feet delivered by District to Stallcup and Big Springs Irrigation District.

(c) Includes 2710 acre-feet wasted in April to maintain reservoir level and deliveries through the entire season to Big Springs Irrigation District.

(d) Includes 21,600 acre-feet wasted in April and May through outlet to prevent increase in reservoir level and 5,970 acre-feet delivered to Big Springs Irrigation District.

(e) Includes 3,390 acre-feet delivered to Big Springs Irrigation District.

(f) Includes 10,000 acre-feet wasted in April through outlet to maintain safe water-surface elevation in reservoir.

TABLE 17

Daily Discharge in Cubic Feet Per Second

BIG SPRINGS IRRIGATION DISTRICT

April 4 to September 30, 1944

Day	Apr.	May	June	July	Aug.	Sept.
1		18	20	24	15	25
2		18	20	24	9	25
3		18	20	24	0	25
4	0	18	20	24	0	25
5	16	18	20	24	0	25
6	24	19	20	24	0	25
7	24	19	20	24	20	25
8	24	19	20	24	25	25
9	24	19	20	24	25	25
10	18	19	20	24	25	25
11	16	19	20	24	25	25
12	16	19	20	24	25	25
13	16	19	21	24	25	25
14	16	19	21	24	25	25
15	16	19	21	24	25	25
16	16	19	21	24	25	25
17	17	19	21	24	25	25
18	17	19	21	24	25	18
19	17	20	21	24	25	0
20	17	20	21	24	25	0
21	17	20	21	24	25	0
22	17	20	21	24	25	0
23	17	20	11	24	25	0
24	17	20	0	24	25	0
25	17	20	0	24	25	7
26	17	20	0	24	25	25
27	18	20	11	24	25	25
28	18	20	22	24	25	25
29	18	20	22	21	25	25
30	18	20	23	0	25	25
31		20		0	25	
Tot. Sec. Ft., Days	468	597	539	693	644	575
Mean Sec. Feet	*18.0	19.3	18.0	22.4	20.8	19.2
Total Acre Feet	930	1,180	1,070	1,380	1,280	1,140
	930	1180	1235	1470	1535	1180

Total Acre-Feet for 174 Day Period - 6,980

* 21 day period

TABLE 18

GRENADA IRRIGATION DISTRICT PUMPING PLANT

Discharge in Cubic Feet Per Sec.

April 17 to September 30, 1944

Day	April	May	June	July	Aug.	Sept.
1		0	22	32	0	21
2		0	11	32	0	21
3		0	22	1	0	21
4		0	22	0	0	21
5		0	12	0	14	21
6		0	0	0	21	21
7		0	0	11	21	21
8		11	0	22	21	21
9		27	0	16	21	21
10		32	0	24	21	21
11		32	0	24	22	21
12		32	16	24	22	21
13		32	16	24	22	21
14		32	28	24	22	21
15		32	22	24	22	21
16		32	22	24	21	21
17	0	32	22	24	21	21
18	10	32	22	24	21	10
19	26	32	22	24	21	13
20	32	32	22	24	21	16
21	32	32	18	24	21	0
22	30	32	0	24	22	
23	32	32	0	24	22	
24	32	12	0	24	22	
25	32	22	0	24	22	
26	32	22	16	28	13	
27	32	22	22	0	0	
28	32	22	32	0	0	
29	32	16	32	0	0	
30	29	9	32	0	16	
31		32		0	22	
Tot. Sec. Ft. Days	383	643	433	526	494	396
Mean Sec. Feet	29.5	20.7	14.4	17.0	15.9	19.8
Total Acre Feet	760	1,280	860	1,040	980	790

Total Acre-Feet for 156 Day Period - 5,710

TABLE 19

Daily Discharge in Cubic Feet Per Second
SHASTA RIVER WATER ASSOCIATION PUMPING PLANT
April 5 to September 26, 1944

Day	Apr.	May	June	July	Aug.	Sept.
1		22	34	34	26	34
2		34	28	34	26	34
3	18	34	34	34	34	34
4	34	34	34	34	34	34
5	34	34	34	34	34	34
6	34	34	25	34	34	34
7	34	34	34	34	34	34
8	34	34	34	34	34	19
9	34	31	34	34	34	11
10	34	34	34	34	34	11
11	34	34	34	34	34	11
12	34	34	34	34	34	11
13	34	34	34	34	34	11
14	34	28	34	34	34	11
15	34	34	34	34	34	11
16	34	34	26	34	34	21
17	34	34	9	32	34	34
18	34	34	0	34	34	34
19	34	34	0	34	34	34
20	18	34	0	34	34	34
21	0	34	0	20	34	34
22	0	34	0	24	34	34
23	0	34	0	34	34	34
24	0	34	0	34	34	31
25	0	34	0	25	34	18
26	0	34	24	15	34	0
27	0	34	34	32	34	
28	0	34	34	28	34	
29	0	32	34	26	34	
30	0	6	34	34	34	
31		6		34	34	
Tot. Sec. Ft. Days	580	975	690	984	1038	642
Mean Sec. Feet	21.4	31.4	23.0	31.7	33.4	25.7
Total Acre Feet	1,150	1,940	1,370	1,950	2,060	1,270

Total Acre-Feet for 175 Day Period - 9,740

TABLE 20
Summary of Run-Off in Acre-Feet
of Streams in Shasta Valley
For the Period April 1 to October 1

Name of Stream	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944
Shasta River Above Yreka Ditch	4,420	8,510	7,440	13,600	19,100*	4,090	14,800	33,300	13,800*	10,900***	6,600
Parks Creek Above Duke North Ditch	2,550	6,100	6,560	11,000	14,400*	4,490	16,000	18,100	9,880*	8,800***	5,670
Little Shasta River Above Harp Ditch	850	5,630	6,520	5,680	6,060**	3,270	4,160	4,480	5,570*	10,500***	2,840
Beaughan Spring	2,020	1,960	1,860	1,820	1,950	1,810	1,810	2,200	2,140	2,100	2,150
Big Springs	12,400	12,200	12,100	12,100	---	12,100	---	---	15,600****	14,800	14,500
Carrick Spring	2,090	2,090	2,050	2,020	2,110	2,000	2,070	2,700	2,700	2,530	2,450
Cleland Spring	2,400	2,420	2,400	2,410	2,790	3,060	3,070	3,170	3,160	3,820	3,840

* Does not include April Run-Off

** May 14 to September 30, inclusive

*** April partly estimated

**** Estimated from measurements made during July, August and September