STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

EDMUND G. BROWN, Governor
HARVEY O. BANKS, Director of Water Resources
RALPH M. BRODY, Deputy Director of Water Resources

REPORT ON WATERMASTER SERVICE IN SHASTA RIVER WATERMASTER SERVICE AREA SISKIYOU COUNTY, CALIFORNIA 1958 SEASON

Sacramento, California

August, 1959

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SUBMISSION TO, AND ADOPTION BY
DEPARTMENT OF WATER RESOURCES

I, Orville L. Abbott, Senior Hydraulic Engineer, Department of Water Resources of the State of California, approve this "Report on Watermaster Service in Shasta River Watermaster Service Area, Siskiyou County, California, 1958 Season."

Orville L. Abbott
Senior Hydraulic Engineer

I, W. R. Gianelli, Principal Hydraulic Engineer, Department of Water Resources of the State of California, approve this "Report on Watermaster Service in Shasta River Watermaster Service Area, Siskiyou County, California, 1958 Season."

W. R. Gianelli
Principal Hydraulic Engineer

I, Harvey O. Banks, Director of the Department of Water Resources of the State of California, approve and adopt this "Report on Watermaster Service in Shasta River Watermaster Service Area, Siskiyou County, California, 1958 Season" as a report of the Department of Water Resources.

WITNESS my hand and the seal of the Department of Water Resources of the State of California, this 31st day of August, 1959.

State of California
Department of Water Resources

(SEAL)

HARVEY O. BANKS
Director

ORGANIZATION

STATE DEPARTMENT OF WATER RESOURCES

Harvey O. Banks. . . . . Director of Water Resources

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INTRODUCTION

This is the twenty-fifty annual report on watermaster service in the Shasta River Watermaster Service Area, and covers the period of water distribution in 1958 beginning April 1, and terminating September 30.

The service area was created by order of the Division of Water Resources on March 1, 1933, to include, with certain exceptions, all the water rights determined in the decree entered in the Shasta River adjudication proceedings on December 30, 1932, Superior Court, Siskiyou County, No. 7035. The service area was changed by order of December 30, 1935, to exclude the water rights on Willow Creek and tributaries. Watermaster service has been provided during each irrigation season since the service area was created and annual reports prepared to show the work accomplished during each season.

The report is presented under four headings as follows: Introduction, Water Supply, Distribution of Water, and Changes in Ownership of Lands and Water Rights. Following the text is Appendix A which contains tables presenting precipitation data at Yreka and water supply records at various locations within the area.

WATER SUPPLY

Precipitation and snow survey data indicated that the Shasta River water supply for the 1958 irrigation season would be approximately 150 per cent of normal. For the streams supplied mainly by snow-melt runoff this proved to be a good estimate. The

streams supplied mainly by springs provided water supplies well above normal during the season. Water supply in Lower Shasta River was also well above normal due to the large storage in Dwinnell Reservoir.

Precipitation

Data on precipitation, as compiled from observations made by the United States Weather Bureau at Yreka, are presented in Table A-1. Precipitation for the period from October 1, 1957 to September 30, 1958, was 26.36 inches or 153 per cent of mean.

Snow Surveys

Data on water content of snow pack at five representative snow courses in or near the Shasta River stream system as set forth in the Department of Water Resources bulletin "Water Conditions in California, April 1, 1958", are presented below:

Snow Course	Elevation, in feet	Water content of snow in inches		Per cent of April 1 average
		April 1 average	1958	
Parks Creek	6,500	33.7	52.7	156
Sweetwater	5,500	14.4	21.1	146
North Fork Sacramento	6,800	22.7	42.5	187
Mount Shasta	8,000	52.6	98.0	186
Little Shasta	6,200	26.4	28.9	110

Combined water content of the five courses measured on April 1, was 157 per cent of the combined normals for these courses.

Stream Flow

Stream flow measuring stations equipped with water stage recorders were maintained during the period of watermaster service on Shasta River above the Edson-Foulke Yreka Ditch, at Edgewood Bridge, and near Montague; on Parks Creek above the Edson-Foulke Yreka Ditch, and the 8-foot weir above the Robertson Ranch; and on Little Shasta River above Harp Ditch. The stream flow measuring station on Little Shasta River above Harp Ditch was maintained by the Basic Data Branch of the Department of Water Resources. The stream flow measuring station on Shasta River at Edgewood Bridge was maintained in cooperation with the Montague Water Conservation District.

Intermittent measurements were made of the flows of Carrick and Cleland Springs. Those measurements are included later in the report.

DISTRIBUTION OF WATER

Distribution of water during the 1958 irrigation season was in accordance with the decree entered in the Shasta River adjudication proceedings and with various agreements and practices developed through the years of watermaster service.

To supplement the water supply records referred to under "Stream Flow" and to maintain close observation of diversion and use, 11 additional water stage recorders were installed at critical points on streams and diversion conduits as follows:

Station	Type of control
Beaughan Creek below International Paper Company mill pond	2-foot Parshall flume
Carrick Creek at Highway 97	3-foot rectangular weir
Dwinnell Reservoir at outlet tower	
Miller Ditch at head	1-foot Parshall flume
Waters and Miller Ditch at head	3-foot rectangular weir
Quigley No. 3 headgate	4-foot rectangular weir
White Mountain Ranch Ditch headgate	4-foot rectangular weir
Montague Water Conservation District bypass canal from Parks Creek	rated section
Montague Water Conservation District Shasta River Canal at head	10-foot Parshall flume
Big Springs Lake at Big Springs Irrigation District pumping plant	
Edson-Foulke Yreka Ditch north of Parks Creek	rated section

The water stage recorder located at Dwinnell Reservoir outlet tower, at the head of the Montague Water Conservation District's Shasta River Canal, and bypass canal from Parks Creek were operated in cooperation with the above named District. The recorder located on Beaughan Creek below International Paper Company mill pond was operated in cooperation with the International Paper Company.

Shasta River Above Junction With Boles Creek

During the 1958 irrigation season there was sufficient water to supply all demands until about July 30.

Diversions above the Yreka Ditch were checked and regulated when necessary, after shortages occurred. High water during the winter season caused considerable damage to some diversion works and a few of these could not be used during the 1958 season. Periodic measurements were made on most diversions, and in some cases the full allotments were not being diverted, due to the above normal precipitation. The latter part of the season, however, was very dry, and the water supply was inadequate to meet irrigation requirements.

Boles Creek and Shasta River Below Junction With Boles Creek

The water supply in this section was sufficient to satisfy all demands until about August 14. On August 14, Diversion 69 (Alexander Ditch) was reduced to four-tenths second-foot for stockwatering purposes only and was regulated to that amount for the remainder of the irrigation season. Also on August 14, all users down to and including the Mills Ranch were regulated on an equal and correlative basis to 100 per cent of allotments. The water supply available was sufficient to supply this amount of water throughout the remainder of the season.

The daily mean discharge of Shasta River at Edgewood Bridge, which represents the amount of water available to the Mills Ranch and the Montague Water Conservation District, is presented in Table A-4.

Dwinnell Reservoir and Shasta River Below Dwinnell Reservoir

Watermaster service on this section of the stream system involves operation of the Montague Water Conservation District's

Dwinnell Reservoir during the irrigation season. The watermaster, in cooperation with the District, exercises control over deliveries from the reservoir to certain natural flow water right owners downstream.

Deliveries to water right owners below the reservoir are made in accordance with agreements between the District and the several water right owners. The agreements specify the amount of water to be released to the respective owners in lieu of their natural flow rights. In general, each agreement sets forth the total amount of water in acre-feet measured at the heads of the respective ditches to which the water right owner is entitled and provides that delivery from the reservoir shall be made upon demand of the water user.

Delivery of water to the Montague Water Conservation District commenced on April 24 and continued throughout the season.

Controversy over the location of the diversion dam for Diversion 156 (John Soule Ditch) continued through the 1958 irrigation season. The Montague Water Conservation District has purchased for the purpose of improving the spillway channel below Dwinnell Dam, the property upon which the present dam and a portion of the ditch are located.

Daily releases from Dwinnell Reservoir, as shown in Table A-10, are the summation of deliveries to natural flow water right owners below the reservoir, and releases to Montague Water Conservation District.

The amount of water diverted from Parks Creek to Shasta River for storage in Dwinnell Reservoir is presented in Table A-6.

Statistical data on reservoir operation during the 1958 season are set forth in the following tabulation:

MONTHLY SUMMARY OF OPERATION OF DWINNELL RESERVOIR

Irrigation Season only

In Acre-Feet

Date	Storage	Change in storage	Inflow to reservoir	Total draft	Measured release	Spill, seepage, and evaporation
April 1	49,700	-700	17,930	18,630	476	18,154
May 1	49,000	+800	17,980	17,180	3,441	13,739
June 1	49,800	-1,200	13,670	14,870	3,047	12,823
July 1	48,600	-7,600	4,170	11,770	3,847	7,923
Aug. 1	41,000	-8,300	1,170	9,470	3,565	5,905
Sept. 1	32,700	-4,200	1,101	5,301	1,578	3,723
Sept. 1	28,500					
TOTALS		-21,200	56,021	77,221	14,954	62,267

This summary is approximate because no measurements were made of consumptive use at the Mills Ranch, possible inflow from Carrick Creek, or precipitation.

21200
56021
77221

14954
62267
77221

DELIVERIES TO NATURAL FLOW WATER RIGHT OWNERS BELOW DWINNELL RESERVOIR

Name of water right owner	Allotment as per agreement, in acre-feet	Amount delivered from Dwinnell Reservoir	
		Acre-feet	Percent of allotment
Fred Quigley	198	177	89
Marvin Miller and Inez M. Miller	692	100[a]	15[a]
K. K. Waters and Emily S. Waters, Marvin Miller and Inez M. Miller	696	696[a]	100[a]
John W. Taylor	1,200	1,190	99
W. W. Valentine, Jr.	596	0[b]	0
TOTALS	3,382	2,163	64

a - Estimated
b - Allotment supplied by seepage from Dwinnell Reservoir

SUMMARY OF DELIVERIES FROM DWINNELL RESERVOIR

In Acre-Feet

Month	Measured release	Deliveries to natural flow rights	Deliveries to M.W.C.D. Canal
April	476	52	424
May	3,441	259	3,182
June	2,047	223	1,824
July	3,847	253	3,594
August	3,565	294	3,271
September	1,578	285	1,293
TOTALS	14,954	1,366	13,588

Beaughan Creek

The flow of Beaughan Creek was measured on June 24. The gage height was 0.43 feet, and the flow was 7.43 second-feet.

This amount of water is sufficient to supply about 90 per cent of second priority allotments, which total 8.28 second-feet.

The International Paper Company diverts practically the entire flow of Beaughan Creek, including the downstream users' share of the available water, for industrial use at its saw mill. After such use, the downstream users' share of the water, which is equivalent to 65 per cent of the measured flow of Beaughan Creek, is returned to Beaughan Creek below the mill pond. During the 1958 season the average amount of water returned to the creek under this arrangement was in excess of the requirement at all times. Consequently, available water supply in Beaughan Creek below the return from the mill pond was sufficient to supply all demands.

Carrick Creek

There was sufficient water to supply all allotments throughout the 1958 irrigation season with the exception of Diversion 122 (Hoy Brothers Upper Ditch) which was regulated by the owner to supply a higher priority downstream user.

Computed measurements of Carrick Springs consist of the summation of the flow in the two upper ditches and the flow of the creek below the ditches. The measurements made during 1958 are presented below:

Date	Discharge in second-feet
July 15	8.43
August 4	8.41
August 25	8.29

Parks Creek

A summary of available water in Parks Creek for the 1958 season is presented in the following tabulation:

Month	Per cent of allotments available			
	Duke	Caldonia	Foulke, et.al.	Robertson
April	100	100	100	100
May	100	100	100	100
June	100	100	100	100
July	100	40	85	80
August	100	0	30	28
September	100	0	20	23

Water was available for 100 per cent of all rights during April, May and June. Deficiencies occurred in July and the flow decreased steadily during the remainder of the season. By the end of September the Edson-Foulke Yreka Ditch was receiving only 23 per cent of its allotment.

Records of flow available for the distribution set forth in the table above are presented in Tables A-2 and A-3. Records of diversion into the Montague Water Conservation Districts By-Pass Canal to Shasta River are presented in Table A-6.

Big Springs

The flow of Big Springs was sufficient to supply all demands during the entire irrigation season. From the first part of July to the end of the season the flow of Big Springs was estimated to be 50 second-feet. During this period, with the Taylor pump operating and the Louie Ditches diverting full allotments, the Big Springs Irrigation District pump operating at full capacity was unable to draw Big Springs Lake down to normal level. The surplus water, amounting to four or five second-feet, flowed over and through Big Springs Lake Dam to Big Springs Creek and supplemented the supply in Lower Shasta River.

Diversions by Big Springs Irrigation District are set forth in Table A-11.

Lower Shasta River

During the 1958 irrigation season 100 per cent of allotments was available for all users.

There is a need for a water right agreement between riparian users and users diverting under terms of the decree in this section of the stream system. Maps and tabulations were prepared for this purpose during the 1958 season and a tentative agreement may be forthcoming during 1959.

Little Shasta River

Because of the ample water supply, regulation of Little Shasta River was not necessary until July 10. On that date the

system was regulated to 74 per cent of fifth priority allotments. Thereafter the available water for fifth priority allotments slowly decreased throughout the remainder of the season. A summary of distribution during the 1958 season is presented in the following tabulation:

Month	Per cent of allotments available						
	1st priority	2nd priority	3rd priority	4th priority	5th priority	6th priority	7th priority
April	Sufficient to supply all demands						
May	Sufficient to supply all demands						
June	Sufficient to supply all demands						
July	100	100	100	100	70	0	0
August	100	100	100	100	57	0	0
September	100	100	100	100	50	0	0

The discharge record of Little Shasta River above Harp Ditch during the 1957-1958 season is presented in Table A-5.

Intermittent measurements of the flow of Cleland Spring during the 1958 season are presented below:

Date	Flow in second-feet
July 18	12.77
July 31	12.77

CHANGES IN OWNERSHIP OF LANDS AND WATER RIGHTS

Changes in ownership of lands and water rights, which have occurred during the period covered by this report and subsequent to filing the watermaster statement for 1958, and which were included in the 1959 statement for the service area, are listed in the following tabulation:

Tract No.	Name of water right owner appearing in 1958 statement	Name of water right owner appearing in 1959 statement	Amount of water in second-feet
5-87	C. C. Pierce	Grace P. Thomas	5.30
5-14 5-28 5-46 5-47	Raymond E. Hart	Gladys I. Hart	17.15
5-33	Ida A. Martin	Jesse C. & Brice P. Martin	0.55
5-54	John W. Taylor	F. L. & Laura Bell Burns	7.50
5-24	Paul M. & Eva P. Karney	Don D. & Alta R. Allen	1.09
5-108	Homer Murphey	Robert W. & Frances W. Weir	1.40
5-84-2	LaVerne R. Rucker	Frieda V. Rucker	0.15
5-53-1	Anadite Corporation	Jerald J. & Barbara Jenkins	1.45

APPENDIX A

RECORDS OF WATER SUPPLY AND USE OF WATER

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TABLE A-1

PRECIPITATION AT YREKA
SISKIYOU COUNTY, CALIFORNIA

1957-1958

In Inches

Month	Mean precipitation	1957-1958 precipitation
October	1.23	2.30
November	2.39	2.80
December	2.93	4.85
January	2.88	5.14
February	2.36	4.57
March	1.65	1.31
April	1.01	0.59
May	1.03	0.57
June	0.64	2.75
July	0.36	0.67
August	0.26	0.56
September	0.48	0.25
TOTALS	17.22	26.36

TABLE A-2

DAILY MEAN DISCHARGE OF PARKS CREEK ABOVE
EDSON-FOULKE YREKA DITCH

April 8 to September 24, 1958

In Second-Feet

Day	April	May	June	July	August	September
1	NO	108	137	57	9.8	5.3
2		128	155	53	10.4	5.5
3	RE	153	153	44	10.4	5.3
4	CO	160	137	39	9.5	5.3
5	RD	167	127	34	9.3	5.3
6		167	123	30	8.8	5.7
7		157	115	29	8.5	6.2
8	35	168	108	27	8.2	6.8
9	41	187	110	26	8.0	7.7
10	50	201	110	24	7.8	7.9
11	56	226	108	23	7.7	7.9
12	63	188	118	19.0	7.3	7.9
13	80	160	107	16.5	7.0	8.2
14	97	150	107	15.3	7.0	8.2
15	105	160	112	14.8	6.5	8.2
16	120	182	107	14.8	6.0	6.5
17	140	200	107	18.2	6.5	6.0
18	135	211	103	15.3	7.0	5.8
19	125	213	128	14.3	7.0	5.8
20	134	198	114	13.0	9.5	5.7
21	142	188	102	12.6	7.7	5.8
22	141	195	98	12.2	7.0	6.5
23	116	187	97	13.4	6.5	7.5
24	100	178	88	16.4	6.5	8.0
25	89	172	74	13.0	6.3	-
26	81	165	68	11.4	5.7	NO
27	75	157	68	10.7	5.5	
28	78	155	62	10.7	5.5	RE
29	82	147	60	11.4	5.5	CO
30	95	143	57	11.0	5.5	RD
31	--	142	--	10.1	5.3	
Mean	95	171	105	21	7.4	6.6
Runoff Ac-ft	4,314	10,522	6,257	1,307	453	315

Total for Period -- 13,168 acre-feet. 23168

TABLE A-3

DAILY MEAN DISCHARGE OF PARKS CREEK AT
ROBERTSON WEIR

April 9 to September 24, 1958

In Second-Feet

Day	April	May	June	July	August	September
1	NO	43	26	13.4	8.8	2.6
2		50	35	12.8	7.7	2.6
3	RE	46	39	12.5	7.4	2.4
4		52	27	11.9	6.2	2.2
5	CO	51	27	11.6	5.7	2.0
6	RD	49	26	11.0	5.2	2.0
7		48	26	10.7	5.0	2.2
8		47	25	10.1	4.8	3.3
9	5.5	46	25	9.9	3.9	3.7
10	6.9	45	24	9.3	3.7	3.5
11	7.2	44	23	9.0	3.5	3.5
12	7.4	43	23	8.5	2.9	3.5
13	8.0	42	22	8.2	2.0	3.9
14	10.1	41	22	8.0	2.4	4.1
15	11.0	40	22	6.4	2.6	4.1
16	11.6	39	21	6.9	2.7	3.9
17	14.4	38	20	13.4	3.3	3.7
18	14.4	37	19.7	10.4	5.0	0.3
19	11.6	36	19.4	9.3	3.5	
20	12.8	35	18.7	9.0	6.9	NO
21	13.1	34	18.3	9.0	6.4	RE
22	11.9	33	17.7	8.8	5.0	CO
23	3.3	32	17.3	8.5	2.9	RD
24	6.2	32	16.6	2.6	2.6	
25	9.9	31	16.3	3.1	3.1	
26	13.7	30	15.7	19.7	3.1	
27	18.3	29	15.3	17.7	3.3	
28	23	28	14.7	18.7	3.5	
29	28	26	14.4	22	2.7	
30	34	25	13.7	15.3	2.2	
31	--	27	--	13.1	2.6	
Mean	13	39	22	13	4.2	3.0
Runoff ac-ft	558	2,374	1,289	776	259	106

Total for Period -- 5,362 acre-feet

Note: Majority of flow down main channel from April 9 to July 14. All flow in main channel after September 18.

TABLE A-4

DAILY MEAN DISCHARGE OF SHASTA RIVER AT EDGEWOOD BRIDGE

October 2, 1957 to September 30, 1958

In Second-Feet

Day	October	November	December	January	February	March	April	May	June	July	August	September
1	-	76	83	140	170	290	485	185	265	160	32	12.8
2	4.5	72	85	150	180	280	495	195	335	150	37	12.8
3	4.2	70	89	130	520	250	355	220	265	115	74	13.8
4	2.7	66	89	120	480	230	300	230	285	100	43	13.3
5	2.7	65	90	115	360	220	295	260	250	94	28	13.3
6	3.0	65	88	110	290	205	300	265	240	88	25	13.3
7	2.3	64	84	110	400	195	270	250	230	87	22	12.8
8	1.5	65	82	114	300	190	265	255	220	73	19.0	15.7
9	380	63	81	122	250	180	285	280	230	58	15.7	17.0
10	515	66	80	140	200	175	300	310	220	49	12.7	14.5
11	265	65	79	135	200	180	300	425	220	47	11.6	13.3
12	175	63	78	192	380	175	305	370	255	47	10.5	13.8
13	160	235	78	157	215	175	335	310	240	49	10.5	15.7
14	150	330	78	133	210	175	345	270	225	49	10.5	16.4
15	120	205	86	130	210	170	335	265	225	47	10.5	15.7
16	105	175	150	125	275	165	340	290	230	48	10.5	16.4
17	96	155	195	125	355	155	355	320	235	88	12.2	15.7
18	90	150	195	120	600	150	345	355	250	61	13.8	14.5
19	89	140	145	115	460	145	310	370	300	49	17.7	14.5
20	80	135	140	110	300	390	320	345	250	48	26	15.7
21	74	130	265	110	215	450	335	320	220	37	17.7	16.3
22	72	125	185	105	190	305	325	345	230	22	14.5	28
23	215	120	150	105	180	440	285	375	240	42	13.9	40
24	175	115	140	125	1200	355	250	345	230	93	12.8	28
25	140	115	140	125	750	290	230	310	205	58	11.6	28
26	130	110	135	145	450	250	215	295	185	50	12.8	27
27	115	92	135	125	380	230	205	280	180	44	12.8	26
28	100	89	225	175	335	220	195	270	165	44	13.3	25
29	100	85	180	380	-	335	185	255	145	91	12.8	24
30	89	84	157	255	-	305	190	245	135	73	13.3	23
31	79	-	140	195	-	275	-	270	-	47	13.3	-
Mean	118	113	127	143	359	244	302	293	230	68	19.	19
Runoff ac-ft	6,999	6,712	7,775	8,787	19,909	14,949	17,929	17,978	13,672	4,174	1,170	1,101

Total for period - 121,155 acre-feet

DAILY MEAN DISCHARGE OF LITTLE SHASTA RIVER NEAR MONTAGUE
January 1, 1958 to October 24, 1958
In Second-Feet

Day	January	February	March	April	May	June	July	August	September	October
1	19	32	53	38	53	43	19	7.8	4.8	
2	19	28	48	31	57	50	18	8.2	5.1	
3	16	28	46	33	57	83	16	7.8	4.8	
4	14	27	40	27	57	47	15	7.8	5.1	
5	13	31	39	26	60	*39	14	7.4	5.1	
6	14	30	36	25	60	*36	14	7.1	4.8	
7	14	41	30	25	61	35	14	6.7	4.8	
8	13	43	30	29	62	33	14	6.4	6.0	
9	13	31	32	36	64	35	13	6.7	5.7	
10	13	30	30	45	70	34	13	6.7	5.4	
11	13	30	28	47	99	31	12	6.7	5.4	
12	12	96	25	50	76	30	12	6.4	5.4	
13	13	57	25	58	70	28	11	6.4	5.4	
14	12	64	23	75	75	26	12	6.4	5.7	
15	16	171	25	68	78	25	13	6.4	5.7	
16	18	194	24	68	74	25	15	6.4	5.4	
17	18	138	26	84	71	24	16	6.7	5.4	
18	16	116	24	76	70	26	14	6.0	5.4	
19	14	109	24	76	70	34	13	6.4	5.1	
20	15	105	27	81	67	26	11	6.4	5.1	
21	13	90	33	76	64	21	11	6.0	5.4	
22	13	85	29	70	64	19	11	6.0	6.7	
23	15	86	29	57	63	22	10	5.7	6.4	
24	14	136	31	52	61	22	12	5.7	5.7	
25	13	136	36	48	57	18	11	5.4	5.7	
26	13	96	31	47	55	18	9.4	5.4	5.4	
27	13	75	31	45	49	17	9.4	5.4	5.4	
28	107	62	30	45	48	16	9.0	5.4	5.7	
29	131		27	46	49	16	9.0	5.1	5.7	
30	60		28	50	45	16	8.2	5.1	5.7	
31	38		34		50		8.2	5.1		
Mean Sec.Ft.	23	77	31	51	63	30	12.5	6.4	5.4	
Total Ac.Ft.	1,438	4,298	1,932	3,043	3,880	1,775	768	391	324	

* Estimated

Total for period - 17,849 acre-feet

TABLE A-6

DAILY MEAN DISCHARGE OF MONTAGUE WATER CONSERVATION DISTRICT'S
PARKS CREEK-DIVERSION CANAL
October 1, 1957 to September 30, 1958

Day	October	November	December	January	February	March	April	May	June	July	August	September
1	N	9.2	3.5	29	36	D	N	N	N	N	N	N
2	O	8.0	5.0	28	50	A	O	O	O	O	O	O
3		7.2	10.0	25	88	M						
4	R	6.6	11.2	23	93		F	F	F	F	F	F
5	E	6.0	11.5	22	60	C	L	L	L	L	L	L
6	C	5.5	9.2	21	41	L	O	O	O	O	O	O
7	O	5.5	4.8	20	59	O	W	W	W	W	W	W
8	R	6.0	4.5	20	49	S						
9	D	6.0	4.0	21	41	E						
10		6.2	4.0	30	36	D						
11		6.0	4.0	23	35							
12		5.7	3.5	32	52	F						
13		54	3.5	26	28	E						
14		137	3.5	23	19.0	B						
15		47	3.5	25	6.0	R						
16	14.5	37	20	25	4.8	U						
17	12.5	32	31	24	4.2	A						
18	10.0	29	34	23	6.0	R						
19	9.0	28	27	22	NO	Y						
20	7.5	26	22	21	D							
21	7.0	25	59	21	I	14,						
22	6.6	24	40	19.5	V							
23	29	20	33	20	E	1958						
24	29	19.0	28	23	R							
25	25	18.6	27	23	S							
26	25	13.2	27	26	I							
27	19.0	4.5	28	22	O							
28	15.5	4.0	75	33	N							
29	13.5	3.8	47	138								
30	12.0	3.5	37	63								
31	10.5	--	32	59								
Mean Sec.Ft.	15	20	21	30	39							
Total Ac.Ft.	486	1,195	1,292	1,842	1,402							

Total for period - 6,217 acre-feet

TABLE A-7

DAILY MEAN DISCHARGE OF EDSON-FOULKE YREKA DITCH AT SHASTA RIVER

April 8 to September 24, 1958

In Second-Feet

Day	April	May	June	July	August	September
1		29	31	13.5	34	10.9
2	N	38	24	14.6	35	9.9
3	O	40	21	18.8	10.6	9.4
4		37	18.4	18.4	20	9.1
5	F	34	17.2	18.8	31	8.9
	L					
6	O	34	17.5	19.1	29	8.4
7	W	27	16.9	27	27	8.7
8		23	16.6	33	24	8.7
9		22	16.6	30	24	8.7
10		21	15.5	30	23	8.7
11		19.7	15.5	29	23	8.7
12		19.1	10.1	29	23	10.6
13		18.1		30	20	12.1
14		17.8		30	17.5	10.9
15		18.4		29	16.6	10.9
16		19.7		27	15.5	11.4
17		22	N	31	17.2	10.9
18		24	O	28	18.4	10.9
19		24		29	23	10.3
20		23	F	31	21	9.6
			L			
21		23	O	35	16.9	10.6
22		23	W	34	15.8	14.6
23		25		36	15.2	13.5
24		23		37	14.6	14.6
25		21		34	13.5	
26		21	2.2	33	13.5	
27		19.7	13.2	31	13.2	
28	4.7	19.7	12.7	31	12.1	
29	16.0	18.8	13.5	21	11.1	
30	18.8	20	14.6	13.5	11.4	
31	---	21	---	25	11.1	
Mean	13.2	24	16	27	19	10.4
Discharge Ac-ft	78	1,477	528	1,676	1,190	497

Total for period - 5,446 acre-feet

TABLE A-8

DAILY MEAN DISCHARGE OF EDSON-FOULKE YREKA DITCH
NORTH OF PARKS CREEK

April 8 to September 24, 1958

In Second-Feet

Day	April	May	June	July	August	September
1	N	59	59	23	29	10.3
2	O	65	65	21	31	9.8
3		68	60	26	27	9.4
4	F	69	55	30	29	9.1
5	L	70	51	29	33	8.8
	O					
6	W	71	49	27	30	9.4
7		71	46	33	27	10.1
8		70	44	40	25	11.8
9		71	33	38	23	11.6
10		74	18.7	37	22	11.0
11		69	17.9	36	25	11.0
12		50	18.2	33	23	11.8
13		46	16.0	32	21	14.8
14	0.4	61	15.4	33	18.3	13.2
15	0.4	58	15.4	34	17.0	12.6
16	0.6	37	15.2	33	15.2	11.6
17	0.6	36	20	38	17.2	11.0
18	2.7	63	23	34	19.0	10.7
19	6.3	64	31	32	24	10.6
20	7.6	59	26	33	26	10.4
21	15.2	54	23	33	19.2	10.6
22	26	55	21	33	17.4	14.6
23	21	62	21	37	17.0	15.7
24	18.8	59	19.2	19.4	15.8	16.3
25	17.5	57	17.5	13.7	14.2	
26	15.1	56	14.8	23	12.4	
27	22	54	14.6	21	12.4	
28	35	57	14.8	20	11.8	
29	46	61	21	18.1	10.5	
30	50	60	20	13.7	10.5	
31	--	62	--	21	10.5	
Mean	17	60	29	29	20	12
Discharge ac-ft	564	3,699	1,715	1,772	1,253	546

Total 9549

TABLE A-9
DAILY MEAN STORAGE IN DWINNELL RESERVOIR
October 1, 1957 to September 30, 1958
In Acre-Feet

Day	October	November	December	January	February	March	April	May	June	July	August	September
1	--	20,000	24,500	29,900	35.500	50,200	49,700	49,000	49,800	48,600	41,000	32,700
2	12,000	20,100	24,500	30,100	35,900	50,000	50,400	48,900	49,900	48,400	40,800	32,500
3	12,100	20,200	24,500	30,200	37,000	49,800	50,300	48,800	50,300	48,300	40,500	32,300
4	12,200	20,200	24,600	30,300	38,400	49,500	59,600	48,700	50,300	48,000	40,200	32,100
5	12,300	20,300	24,600	30,300	39,700	49,300	49,100	48,600	50,200	47,700	40,000	31,800
6	12,400	20,400	24,700	30,500	40,400	49,100	48,600	48,500	50,000	47,400	39,700	31,600
7	12,400	20,400	24,700	30,700	41,100	48,800	48,100	48,400	49,800	47,200	39,400	31,400
8	12,500	20,500	24,700	30,800	42,000	48,700	47,600	48,300	49,600	47,000	39,100	31,200
9	13,100	20,500	24,800	30,900	42,500	48,700	47,100	48,300	49,600	46,700	38,700	31,000
10	14,500	20,600	24,800	31,100	42,800	48,700	46,600	48,300	49,600	46,400	38,300	30,800
11	15,600	20,700	24,900	31,200	43,200	48,600	46,700	48,700	49,600	46,100	38,000	30,600
12	16,100	20,800	24,900	31,500	43,900	48,600	46,900	48,900	49,900	45,800	37,700	30,400
13	16,300	20,900	24,900	31,700	44,400	48,600	47,100	49,000	50,000	45,500	37,400	30,300
14	16,500	21,900	24,900	31,900	44,800	48,600	47,400	49,100	50,000	45,200	37,200	30,200
15	16,900	22,400	25,000	32,100	45,100	48,700	47,600	49,100	50,000	44,900	37,000	30,100
16	17,100	22,700	25,100	32,200	45,600	48,700	47,900	49,000	50,000	44,600	36,600	30,000
17	17,200	22,900	25,500	32,300	46,200	48,700	48,300	49,000	50,000	44,300	36,200	29,900
18	17,300	23,100	26,000	32,400	47,200	48,700	48,500	49,100	49,900	44,100	36,000	29,800
19	17,400	23,300	26,200	32,500	48,300	48,700	48,700	49,200	49,900	43,900	35,800	29,600
20	17,600	23,500	26,400	32,600	48,500	48,900	49,000	49,300	50,000	43,600	35,600	29,500
21	17,700	23,600	26,700	32,700	48,500	49,800	49,200	49,300	50,000	43,300	35,400	29,300
22	17,800	23,700	27,200	32,800	48,300	50,000	49,400	49,400	49,900	43,000	35,200	29,200
23	18,100	23,800	27,500	32,800	48,200	50,100	49,700	49,500	49,900	42,700	35,000	29,000
24	18,600	23,900	27,700	33,000	49,600	50,300	49,600	49,600	49,800	42,400	34,700	28,900
25	18,900	24,000	27,900	33,100	51,200	50,300	49,500	49,700	49,700	42,200	34,400	28,800
26	19,100	24,100	28,200	33,300	50,800	50,100	49,400	49,800	49,600	42,100	34,100	28,700
27	19,400	24,200	28,500	33,400	50,500	49,900	49,300	49,700	49,400	42,000	33,900	28,700
28	19,600	24,300	28,900	33,600	50,400	49,600	49,300	49,700	49,200	41,900	33,600	28,600
29	19,700	24,400	29,300	34,100	--	49,400	49,300	49,700	49,100	41,800	33,400	28,500
30	19,800	24,500	29,500	32,900	--	49,500	49,200	49,700	48,900	41,600	33,200	28,400
31	19,900	--	29,700	35,300	--	49,500	--	49,700	--	41,300	33,000	--

TABLE A-10

DAILY MEAN RELEASES FROM DWINNELL RESERVOIR

April 1, to September 30, 1958

In Second-Feet

Day	April	May	June	July	August	September
1	N	48	35	66	67	42
2	O	56	23	66	69	48
3		56	18.8	67	66	56
4	F	57	13.0	68	64	56
5	L	62	12.3	68	64	49
	O					
6	W	61	11.7	66	63	45
7		61	13.2	66	60	41
8		64	15.0	65	60	25
9		65	17.7	65	61	22
10		65	14.4	68	62	25
11		66	16.0	74	66	23
12		61	19.1	76	64	23
13		59	28	76	68	23
14		58	36	76	66	23
15		54	36	77	62	20
16		52	34	78	57	19.2
17		51	41	80	61	19.2
18		49	41	78	62	20
19		59	43	78	62	20
20		60	45	76	59	19.8
21		60	47	72	56	19.8
22		57	51	69	54	19.8
23	7.0	57	51	62	55	19.8
24	27	56	51	53	58	19.8
25	31	53	48	48	56	19.8
26	31	55	45	48	44	19.8
27	31	54	51	32	44	14.6
28	33	50	55	14.0	44	14.6
29	35	47	60	15.9	44	14.6
30	45	45	62	39	42	14.6
31	--	40	--	56	41	--
Mean	30	56	34	63	58	27
Release ac-ft	476	3,441	2,047	3,847	3,565	1,578

Total for Period - 14,954 acre-feet

TABLE A-11

DAILY MEAN DISCHARGE OF BIG SPRINGS
IRRIGATION DISTRICT PUMP

April 8, to September 24, 1958

In Second-Feet

Day	April	May	June	July	August	September
1	N	15.0	22	28	28	19.5
2	O	15.0	24	29	11.4	18.2
3		15.0	25	27	26	--
4	F	15.6	25	19.0	27	--
5	L	16.2	26	25	27	--
	O					
6	W	16.8	22	19.5	27	--
7		17.5	18.2	18.2	28	--
8		17.8	16.0	28	28	25
9		18.5	N	27	29	28
10		18.7	O	26	29	29
11		19.0	F	26	29	29
12		19.4	L	26	29	29
13		19.7	O	27	29	28
14		20	W	27	29	28
15		20		18.8	29	26
16		20	19.5	21	29	26
17		20	26	27	18.2	19.0
18		21	26	17.1	19.4	20
19		21	26	--	21	--
20		23	26	--	14.1	--
21	17.1	23	24	--	26	N
22	28	23	23	14.1	21	O
23	30	13.4	18.2	17.1	27	
24	28	18.2	25	16.0	30	F
25	27	23	25	25	30	L
						O
26	24	23	26	25	30	W
27	22	23	26	24	25	
28	22	23	26	17.1	30	
29	22	23	22	15.6	27	
30	15.6	24	26	28	23	
31	--	24	--	28	19.5	
Mean	24	20	24	23	27	25
Discharge ac-ft	467	1,208	1,075	1,280	1,576	644 = 6250

TABLE A-12

DAILY MEAN DISCHARGE OF SHASTA RIVER WATER ASSOCIATION PUMPING PLANT

April 14 to September 30, 1958

In Second-Feet

Day	April	May	June	July	August	September
1		41	38	41	41	41
2		41	41	41	39	41
3		41	16	41	41	41
4		41	--	41	41	41
5		41	--	41	41	41
6		41	--	41	41	41
7		41	35	40	40	41
8		41	41	41	41	41
9		41	41	41	41	41
10		41	41	41	41	41
11		36	41	41	41	41
12		41	36	41	41	41
13		41	11	41	31	41
14	24	41	6	41	34	41
15	41	41	14	31	39	39
16	41	41	40	28	39	38
17	41	41	41	41	41	37
18	41	41	40	41	41	36
19	41	41	40	41	41	32
20	41	41	41	41	38	36
21	41	41	41	40	41	30
22	41	41	41	41	41	6.6
23	41	41	31	41	41	0
24	41	41	--	41	41	0
25	41	41	--	41	41	0
26	41	28	--	41	41	0
27	41	28	41	41	41	0
28	41	41	41	41	41	0
29	41	41	38	41	41	0
30	41	41	41	41	41	0
31	--	41	--	41	41	--
Mean	40	40	35	40	40	38
Discharge ac-ft	1,346	2,455	1,657	2,467	2,463	1,641

Total for Period - 12,029 acre-feet

INVENTORY OF WATER RESOURCES
AND REQUIREMENTS

STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

GOODWIN J. KNIGHT, Governor
HARVEY O. BANKS, Director of Water Resources
M. J. SHELTON, Deputy Director of Water Resources

REPORT ON

WATERMASTER SERVICE

IN

SHASTA RIVER WATERMASTER SERVICE AREA

SISKIYOU COUNTY, CALIFORNIA

1957 SEASON

Sacramento, California
April, 1958

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APPENDIX

A. Records of Water Supply and Use of Water

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SUBMISSION TO, AND ADOPTION BY
DEPARTMENT OF WATER RESOURCES
STATE OF CALIFORNIA

I, William R. Gianelli, Chief, Water Rights Section, Department of Water Resources of the State of California, approve this "Report on Watermaster Service in Shasta River Watermaster Service Area, Siskiyou County, California, 1957 Season".

/s/ William R. Gianelli

William R. Gianelli
Chief, Water Rights Section

I, Harvey O. Banks, Director of the Department of Water Resources of the State of California, approve and adopt this "Report on Watermaster Service in Shasta River Watermaster Service Area, Siskiyou County, California, 1957 Season", as a report of the Department of Water Resources.

WITNESS my hand and seal of the Department of Water Resources of the State of California, this _____day of _____, 1958.

State of California
Department of Water Resources

/s/ Harvey O. Banks

HARVEY O. BANKS
Director

(SEAL)

ORGANIZATION
DEPARTMENT OF WATER RESOURCES

Harvey O. Banks . . . . . Director of Water Resources

M. J. Shelton . . . . . Deputy Director of Water Resources

The activity covered by this report is under the

direction of

William R. Gianelli
Chief, Water Rights Section

This report was prepared under the supervision of

Orville L. Abbott
Supervising Watermaster

by

Joe Nessler
Assistant Civil Engineer
and Watermaster

P. A. Towner . . . . . Chief Counsel

Paul L. Barnes . . . . . Chief, Division of Administration

Isabel C. Nessler . . . . . Coordinator of Reports

INTRODUCTION

This is the twenty-fourth annual report on watermaster service in the Shasta River Watermaster Service Area, and covers the period of water distribution in 1957 beginning April 1, and terminating September 30.

The service area was created by order of the Division of Water Resources on March 1, 1933, to include, with certain exceptions, all the water rights determined in the decree entered in the Shasta River adjudication proceedings on December 30, 1932, Superior Court, Siskiyou County, No. 7035. The service area was changed by order of December 30, 1935, to exclude the water rights on Willow Creek and tributaries. Watermaster Service has been provided during each irrigation season since the service area was created and annual reports prepared to show the work accomplished during each season.

The report is presented under four headings as follows: Introduction, Water Supply, Distribution of Water, and Changes in Ownership of Lands and Water Rights. Following the text is Appendix A which contains tables presenting precipitation data at Yreka and water supply records at various locations within the area.

WATER SUPPLY

Precipitation and snow survey data indicated the Shasta River water supply for the 1957 irrigation season would be approximately 85 per cent of normal. For the streams supplied mainly by snow-melt runoff this proved to be a good estimate. However, the streams supplied mainly by springs provided water supplies well above normal during the season. It

is assumed that the unprecedented high flows from springs in the southeast portion of Shasta Valley was due to a delayed reaction from the intense precipitation and runoff during the 1955-56 season. Water supply in Lower Shasta River was also well above normal due to the high storage in Dwinnell Reservoir.

Precipitation

Data on precipitation, as compiled from observations made by the United States Weather Bureau at Yreka, are presented in Table A-1. Precipitation for the period from October 1, 1956 to September 30, 1957, was 17.32 inches or 101 per cent of mean.

Snow Surveys

Data on water content of snow pack at five representative snow courses in or near the Shasta River stream system as set forth in the Department of Water Resources bulletin "Water Conditions in California, April 1, 1957", are presented below:

Snow course	Elevation, in feet	Water content of snow in inches		Per cent of April 1 average
		April 1 average	1957	
Parks Creek	6,500	33.7	29.2	87
Sweetwater	5,500	14.4	8.5	59
North Fork Sacramento	6,800	22.7	20.5	90
Mount Shasta	8,000	52.6	39.7	75
Little Shasta	6,200	26.4	22.1	84

Combined water content of the five courses measured on April 1, was 80 per cent of the combined normals for these courses.

Stream Flow

Stream flow measuring stations equipped with water stage recorders were maintained during the period of watermaster service on Shasta River above the Edson-Foulke Yreka Ditch, at Edgewood Bridge, and near Montague; on Parks Creek above the Edson-Foulke Yreka Ditch, and the 8-foot weir above the Robertson Ranch; and on Little Shasta River above Harp Ditch. The stream flow measuring station on Little Shasta River above Harp Ditch was maintained by the Basic Data Branch of the Department of Water Resources. The stream flow measuring station on Shasta River at Edgewood Bridge was maintained in cooperation with the Montague Water Conservation District.

Intermittent measurements were made of the flows of Carrick and Cleland Springs and are recorded in Tables A-6 and A-7, respectively.

DISTRIBUTION OF WATER

Distribution of water during the 1957 irrigation season was in accordance with the decree entered in the Shasta River adjudication proceedings and with various agreements and practices developed over the period of watermaster service.

To supplement the water supply records referred to under "Stream Flow" and to maintain close observation of diversion and use, 11 additional water stage recorders were installed at critical points on streams and diversion conduits as follows:

Station	Type of control
Beaughan Creek below International Paper Company mill pond	2-foot Parshall flume
Carrick Creek at Highway 97	3-foot rectangular weir
Dwinnell Reservoir at outlet tower	
Miller Ditch at head	1-foot Parshall flume
Waters and Miller Ditch at head	3-foot rectangular weir
Quigley No. 3 headgate	4-foot rectangular weir
White Mountain Ranch Ditch headgate	4-foot rectangular weir
Montague Water Conservation District bypass canal from Parks Creek	rated section
Montague Water Conservation District Shasta River Canal at head	10-foot Parshall flume
Big Springs Lake at Big Springs Irrigation District pumping plant	
Edson-Foulke Yreka Ditch north of Parks Creek	rated section

The water stage recorders located at Dwinnell Reservoir outlet tower, at the head of the Montague Water Conservation District Shasta River Canal, and bypass canal from Parks Creek were operated in cooperation with the above named District. The recorder located on Beaughan Creek below International Paper Company mill pond was operated in cooperation with the International Paper Company.

Shasta River Above Junction with Boles Creek

During the 1957 irrigation season there was sufficient water to supply all demands until about July 10. Thereafter a shortage occurred

throughout the section. Diversions 3 and 11 (Durney Mill and Dow-Eddy Ditches) on Shasta River and Eddy Creek, respectively, were not used during the season. Diversion 13 (Hammond-Eddy Lower Ditch) was shut off on the above date. All other ditches were regulated to the respective decreed allotments subsequent to July 10.

Subsequent to August 19, diversions 4, 5, and 6 (Dobkins #1, Dobkins #2, and I. M. Dow Ditches) were regulated on an equal and correlative basis. The available supply was not sufficient to satisfy decreed allotments during the balance of the season.

Boles Creek and Shasta River Below Junction with Boles Creek

The water supply in this section was sufficient to satisfy all demands until about July 12. On July 12, Diversion 69 (Alexander Ditch) was reduced to four-tenths second-foot for stockwatering purposes only and was regulated to that amount for the remainder of the irrigation season. Also on July 12, all users down to and including the Mills Ranch were regulated on an equal and correlative basis to 75 per cent of allotments. Users above Edgewood Bridge were regulated to 75 per cent of allotments for the remainder of the irrigation season.

The daily mean discharge of Shasta River at Edgewood Bridge, which represents the amount of water available to the Mills Ranch and the Montague Water Conservation District, is presented in Table A-4.

Dwinnell Reservoir and Shasta River Below Dwinnell Reservoir

Watermaster service on this section of the stream system involves operation of the Montague Water Conservation District's Dwinnell Reservoir

during the irrigation season. The watermaster, in cooperation with the District, exercises control over deliveries from the reservoir to the District and to certain natural flow water right owners below the reservoir.

Deliveries to water right owners below the reservoir are made in accordance with agreements between the District and the several water right owners. The agreements specify the amount of water to be released to the respective owners in lieu of their natural flow rights. In general, each agreement sets forth the total amount of water in acre-feet measured at the heads of the respective ditches to which the water right owner is entitled and provides that delivery from the reservoir shall be made upon demand of the water user. All release of water to the water right owners below the reservoir are subject to control of the watermaster, who also regulates releases from the reservoir in accordance with requirements of the Montague Water Conservation District. Rediversion of the water to natural flow water right owners below the reservoir is also regulated.

Delivery of water to the Montague Water Conservation District commenced on April 24 and continued throughout the season.

Controversy over the location of the diversion dam for Diversion 156 (John Soule Ditch) continued through the 1957 irrigation season. The Montague Water Conservation District has purchased the property upon which the present dam and a portion of the ditch are located; however, final action was not taken prior to the watermaster's departure.

Daily releases from Dwinnell Reservoir, as shown in Table A-11, are the summation of deliveries to natural flow water right owners below the reservoir, deliveries to the Fred Quigley Ranch as measured by the

Montague Water Conservation District and the discharge through the 10-foot Parshall flume near the head of the District's Shasta River Canal. The amount of water diverted from Parks Creek to Shasta River for storage in Dwinnell Reservoir is presented in Table A-8. Statistical data on reservoir operation during the 1957 season are set forth in the following tabulations:

MONTHLY SUMMARY OF OPERATION OF DWINNELL RESERVOIR

In Acre-Feet

Date	Storage	Change in storage	Inflow to reservoir[a]	Total draft	Measured release	Seepage and evaporation loss[b]
April 1	35,200					
		160	5,085	4,925	746	4,179
May 1	35,360					
		- 640	7,447	8,087	3,976	4,111
June 1	34,720					
		- 6,620	2,831	9,451	4,031	5,420
July 1	28,100					
		- 7,820	507	8,327	4,241	4,086
August 1	20,280					
		- 6,140	375	6,515	3,769	2,746
Sept. 1	14,140					
		- 2,240	1,002	3,242	1,571	1,671
Sept. 30	11,900					
TOTALS		-23,300	17,247	40,547	18,334	22,213

[a]Not adjusted for consumptive use on Mills Ranch.

[b]Not adjusted for possible inflow from Carrick Creek or precipitation.

DELIVERIES TO NATURAL FLOW WATER
RIGHT OWNERS BELOW DWINNELL RESERVOIR

Name of water right owner	Allotment as per agreement, in acre-feet	Amount delivered from Dwinnell Reservoir	
		Acre-feet	Per cent of allotment
Fred Quigley	198	198	100
Marvin Miller and Inez M. Miller	692	692	100
K. K. Waters and Emily S. Waters, Marvin Miller and Inez M. Miller	696	34*	5
John W. Taylor	1,200	1,200	100
W. W. Valentine, Jr.	596	0*	0
TOTALS	3,382	2,124	63

*Allotment supplied by seepage from Dwinnell Reservoir.

SUMMARY OF DELIVERIES
FROM DWINNELL RESERVOIR

In Acre-Feet

Month	Measured release	Deliveries to natural flow rights	Deliveries to M.W.C.D. Canal
April	746	107	639
May	3,976	428	3,548
June	4,031	367	3,664
July	4,241	373	3,868
August	3,769	441	3,328
September	1,571	408	1,163
TOTALS	18,334	2,124	16,210

Beaughan Creek

One measurement of the flow of Beaughan Creek was made during the 1957 season at the 8-foot rectangular weir located at the head of Beaughan Creek. Results are given below:

Date	Gage Height-Feet	Discharge - Second-Feet
August 13	0.39	6.42

This amount of water is sufficient to supply approximately 78 per cent of second priority allotments, which total 8.28 second-feet.

The International Paper Company diverts practically the entire flow of Beaughan Creek, including the downstream users share of the available water, for industrial use at its saw mill. After such use, the downstream users' share of the water, which is equivalent to 65 per cent of the measured flow of Beaughan Creek, is returned to Beaughan Creek below the International Paper Company mill pond. During the 1957 season the average amount of water returned to the creek under this arrangement was in excess of the requirement at all times. Consequently, available water supply in Beaughan Creek below the return from the mill pond was sufficient to supply all demands.

Carrick Creek

There was sufficient water to supply all allotments throughout the 1957 irrigation season with the exception of Diversion 122 (Hoy Brothers Upper Ditch) which was regulated by the owner to supply a higher priority downstream user.

Results of intermittent measurements of Carrick Springs are presented in Table A-6.

Parks Creek

A summary of distribution on Parks Creek for the 1957 season is presented in the following tabulation:

Month	Per cent of allotments available			
	Duke	Caldonia	Foulke, et. al.	Robertson
April	100	100	100	100
May	100	100	100	100
June	100	65	70	75
July	90	14	0	10
August	75	0	0	5
September	40	0	0	3

During the latter part of the irrigation season the Duke and Vanderbilt Ranches were the only users on upper Parks Creek who received water. Since both ranches are riparian to Parks Creek, the water available was distributed in proportion to their allotments.

Records of flow available for the above distribution are presented in Tables A-2 and A-3. Records of diversion into the Montague Water Conservation Districts By-Pass Canal to Shasta River are presented in Table A-8.

Big Springs

The flow of Big Springs was sufficient to supply all demands during the entire irrigation season. From about July 1 to the end of the season the flow of Big Springs was estimated to be approximately 48

second-feet. During this period, with the Taylor pump operating and the Louie Ditches diverting full allotments, the Big Springs Irrigation District pump operating at full capacity was unable to draw Big Springs Lake down to normal level. The surplus water, amounting to flows of from two to three second-feet, flowed over and through Big Springs Lake Dam to Big Springs Creek and supplemented the supply in Lower Shasta River.

Although the District kept no records of daily discharge from their pump, the following information was received from the District's manager:

Pump started April 16, 1957
Pump shut off September 27, 1957
Average discharge for 46 days; 14.2 second-feet
Average discharge for 61 days; 17.2 second-feet
Average discharge for 58 days; 24.2 second-feet

Lower Shasta River

During the 1957 irrigation season 100 per cent of allotments was available for all users except the Grenada Irrigation District which was regulated to 34 second-feet for a four-day period starting 8:00 p. m., July 29.

The record of discharge from Grenada Irrigation District's pumping plant is not published in this report because of an inconsistency between the data and conditions observed by the watermaster.

Little Shasta River

Regulation of Little Shasta River was not necessary until July 16, due to a low demand by owners of water rights for Diversion 474 (Hart, Haight, and Prather Ditch). Prior to July 16, there was sufficient water

to supply the demands of all users above Diversion 474. On that date the system was regulated to 59 per cent of fifth priority allotments and water available for fifth priority allotments slowly decreased throughout the remainder of the season. A summary of distribution during the 1957 season is presented in the following tabulation:

Month	Per cent of allotments available						
	1st priority	2nd priority	3rd priority	4th priority	5th priority	6th priority	7th priority
April	Sufficient to supply all demands						
May	Sufficient to supply all demands						
June	Sufficient to supply all demands						
July	100	100	100	100	60	0	0
August	100	100	100	100	39	0	0
September	100	100	100	100	30	0	0

The discharge record of Little Shasta River Above Harp Ditch during the 1956-1957 season is presented in Table A-5.

A record of intermittent measurements of the discharge of Cleland Spring during the 1957 season is presented in Table A-7.

CHANGES IN OWNERSHIP OF LANDS AND WATER RIGHTS

Changes in ownership of lands and water rights, which have occurred during the period covered by this report and subsequent to filing "Statement for Shasta River Watermaster Service Area, County of Siskiyou, State of California, for 1957" and which shall be included in the 1958 statement for the Service Area, are listed in the following tabulation:

Tract number	Name of water right owner appearing in 1957 statement	Name of water right owner to appear in 1958 statement	Amount of water in second-feet
5-87	Crossley, Lane W. and Crossley, Yvonne Constance	Pierce, C. C. and Pierce, Eileen E.	5.30
5-51-1	Crutchfield, Barry C. and Crutchfield, Mary C.	Peters, Harlan	1.99
5-64	Coonrod, Mollie Armstrong	Dougherty, Chester C. and Dougherty, Ida M.	2.35
5-65A-2*	Dougharty, Chester C. and Dougharty, Ida M.	Dougherty, Chester C. and Dougherty, Ida M.	2.35
5-24	Buell, W. E., Karney, Paul and Karney, Eva	Karney, Paul and Karney, Eva	1.09
5-56*	Costello, Laura M.	Crawley, Laura M.	2.98
5-16-2	Maggetti, James A	Day, Frank R. and Day, Margaret S.	2.18
5-59	Greenwald, F. L.	Miller, M. L. and Miller, Inez M.	0.64
5-58	Reed, Clarence C. and Reed, Margaret	Valentine, William W., Jr.	2.40
5-51-2*	Root, Samuel J. and Root, Edith W.	Root, Edith W.	1.98
5-65-2	Sullivan, Frances M. and Sullivan, Florence Carrol	Carpenter, Fred W. and Carpenter, Jewell E.	0.95
5-3*	Miller, M. L. and Miller, Inez M.	Soule, John	0.92
5-43-2*	Watson, Donald E. and Watson, Illene D	Fiock, George W.	0.35
5-84-2*	Neal, A. W. and Neal, Alma	Rucker, Laverne R.	0.15

*These changes to make an administrative correction only.

APPENDIX A

RECORDS OF WATER SUPPLY AND USE OF WATER

Table No.		Page
A-1	Precipitation at Yreka, Siskiyou County, California, 1956-1957	A-1
A-2	Daily Mean Discharge of Parks Creek Above Edson-Foulke Yreka Ditch	A-2
A-3	Daily Mean Discharge of Parks Creek at Robertson Weir	A-3
A-4	Daily Mean Discharge of Shasta River at Edgewood Bridge	A-4
A-5	Daily Mean Discharge of Little Shasta River above Harp Ditch	A-5
A-6	Discharge of Carrick Springs	A-6
A-7	Discharge of Cleland Spring	A-7
A-8	Daily Mean Discharge of Montague Water Conservation District Parks Creek Canal	A-8
A-9	Daily Mean Discharge of Edson-Foulke Yreka Ditch North of Parks Creek	A-9
A-10	Daily Mean Storage in Dwinnell Reservoir	A-10
A-11	Daily Mean Releases from Dwinnell Reservoir	A-11
A-12	Daily Mean Discharge of Shasta River Water Association Pumps	A-12

TABLE A-1

PRECIPITATION AT YREKA
SISKIYOU COUNTY, CALIFORNIA

1956-1957

In Inches

Month	Mean precipitation	1956-1957 precipitation
October	1.23	3.44
November	2.39	0.15
December	2.93	0.90
January	2.88	2.73
February	2.36	3.16
March	1.65	4.98
April	1.01	0.40
May	1.03	0.56
June	0.64	0.02
July	0.36	0.01
August	0.26	0.00
September	0.48	0.97
TOTALS	17.22	17.32

TABLE A-2

DAILY MEAN DISCHARGE OF PARKS CREEK ABOVE
EDSON-FOULKE YREKA DITCH

April 25 to September 24, 1957

In Second-Feet

Day	April	May	June	July	August	September
1		99	77	8.8	2.5	1.9
2	N	88	70	8.5	2.39	1.9
3		61	61	8.2	2.3	1.8
4	O	60	55	7.4	2.3	1.8
5		80	49	6.9	2.3	1.8
6	R	105	45	6.3	2.3	1.8
7		105	42	6.3	2.3	1.8
8	E	90	39	6.3	2.3	1.8
9		70	35	6.3	2.3	1.8
10	C	58	30	5.6	2.3	1.8
11	O	50	28	5.6	2.3	1.8
12		50	26	5.6	2.3	1.7
13	R	52	24	5.4	2.2	1.6
14		45	22	5.6	2.2	1.7
15	D	42	20	5.2	2.2	1.8
16		47	18.5	4.8	2.1	1.8
17		56	17.0	4.1	2.1	1.9
18		201	16.2	4.1	2.1	2.2
19		138	15.8	3.8	2.1	2.3
20		105	15.5	3.6	2.1	2.2
21		70	15.1	3.7	2.1	2.1
22		59	14.4	3.6	2.1	1.9
23		51	13.7	3.2	2.1	1.9
24		53	11.1	3.2	2.1	1.8
25	28	59	11.5	3.0	2.1	N
						O
26	31	67	10.6	3.0	2.1	
27	34	78	10.3	3.0	2.1	R
28	42	87	9.7	3.0	1.9	E
29	66	88	9.4	2.8	1.9	C
30	97	78	9.1	2.7	2.1	O
31	—	80	—	2.5	2.1	R
						D
Mean	50	77	27	4.9	2.2	1.9
Runoff ac-ft.	594	4,730	1,600	301	135	90

Total for period - 7,450 acre-feet

TABLE A-3

DAILY MEAN DISCHARGE OF FARRS CREEK AT ROBERTSON WEIR

April 5 to September 24, 1957

In Second-Feet

Day	April	May	June	July	August	September
1	N	43	12.2	1.7	1.1	0.5
2		38	18.7	2.0	1.1	0.6
3	O	24	28	2.7	1.0	0.5
4		22	27	2.6	0.8	0.6
5		22	26	2.2	0.8	0.5
	F					
6		21	25	2.0	1.1	0.6
7	L	22	23	2.2	1.2	0.5
8		22	22	2.4	1.1	0.5
9	O	21	23	2.4	1.1	0.4
10		18.0	20	2.2	1.1	0.3
	W					
11		13.7	18.0	1.5	0.7	0.2
12	12.2	11.6	16.6	1.4	0.6	0.1
13	No Record	17.7	16.0	1.4	0.5	0.1
14	No Record	18.0	18.0	1.7	0.6	0.1
15	7.7	14.7	17.7	2.0	0.8	0.1
16	14.4	14.4	15.7	1.9	0.8	0.1
17	14.4	18.7	14.0	2.0	0.8	0.1
18	17.3	57	9.9	2.0	0.6	0.2
19	25	54	6.7	2.0	0.6	0.2
20	18.3	40	5.7	1.9	0.7	0.3
21	13.7	28	5.5	1.7	0.5	0.3
22	12.5	20	5.2	1.5	0.4	0.3
23	11.9	19.4	5.0	1.5	0.2	0.3
24	11.6	18.0	3.9	1.5	0.2	0.3
25	11.3	18.7	2.4	1.7	0.2	N
						O
26	12.2	21	1.7	1.7	0.2	
27	14.0	24	1.5	1.5	0.2	R
28	19.4	32	1.4	1.5	0.3	E
29	32	34	1.7	1.2	0.4	C
30	43	25	1.7	1.0	0.6	O
31	——	16.6	——	1.1	0.6	R
						D
Mean	17.1	24.8	13.1	1.8	0.7	0.3
Runoff ac-ft.	576	1,520	778	110	43	14

Total for period - 3,041 acre-feet

TABLE A-4

DAILY MEAN DISCHARGE OF SHASTA RIVER AT EDGEWOOD BRIDGE

October 1, 1956 to September 30, 1957

In Second-Feet

Day	October	November	December	January	February	March	April	May	June	July	August	September
1	8.0	540	26	26	38	183	98	120	129	13.0	6.1	5.9
2	8.0	52	26	25	36	172	92	203	121	12.0	6.1	5.9
3	912	48	27	26	36	143	91	129	112	11.0	5.9	5.9
4	12.0	48	27	24	34	148	95	113	104	10.1	6.4	5.7
5	10.8	46	27	24	34	154	103	120	95	9.7	6.7	5.3
6	11.4	56	27	24	36	136	109	125	90	9.7	7.2	5.1
7	11.4	46	27	26	46	134	102	126	78	10.1	7.2	5.2
8	13.0	45	27	26	54	251	96	129	61	9.7	7.2	5.3
9	13.0	45	27	25	48	218	89	121	65	9.7	7.2	5.3
10	15.2	48	36	26	44	142	91	98	56	8.9	6.7	5.3
11	19.7	46	84	31	45	152	86	89	51	7.8	6.7	5.2
12	21	43	75	64	45	178	80	84	47	6.9	6.7	5.2
13	19.0	41	60	214	64	141	75	100	42	7.2	6.9	5.5
14	18.0	39	50	106	84	118	144	94	36	7.5	6.7	5.9
15	18.5	39	45	79	51	118	91	81	32	7.5	6.4	6.1
16	19.0	39	42	60	63	123	78	75	31	7.8	6.4	5.9
17	19.0	40	41	51	63	122	90	83	27	8.2	5.5	6.1
18	20	38	40	48	61	123	85	301	24	8.2	5.7	6.4
19	21	34	39	48	67	112	99	216	25	7.5	6.1	6.1
20	21	26		50	80	109	83	177	26	6.7	6.1	6.1
21	21	26	NO	48	78	103	77	146	26	6.9	5.9	6.4
22	23	26		43	96	95	74	113	25	7.5	5.5	6.7
23	25	27	RECORD	42	440	90	72	90	20	7.2	5.2	6.1
24	24	27		38	870	88	68	84	18.0	6.9	5.2	5.9
25	23	27		37	350	96	61	83	15.7	6.9	5.3	5.7
26	31	27	27	41	555	100	60	90	16.3	7.2	5.3	16.9
27	28	27	26	52	303	97	56	98	15.2	7.8	5.2	138
28	26	27	26	46	206	102	60	105	15.7	7.5	5.2	80
29	29	27	26	44	—	116	71	117	13.5	6.4	5.2	65
30	116	26	26	46	—	108	92	122	12.5	6.4	5.9	62
31	63	—	26	45	—	104	—	129	—	6.1	5.7	
Mean	23	38	36	48	140	131	86	121	48	8.3	6.1	16.9
Runoff ac-ft	1,420	2,220	1,300	2,940	7,780	8,070	5,080	7,450	2,830	507	375	1,000

Total for period - 41,472 acre-feet

TABLE A-5

DAILY MEAN DISCHARGE OF LITTLE SHASTA RIVER NEAR MONTAGUE
January 1, 1957 to October 24, 1957
In Second-Feet

Day	January	February	March	April	May	June	July	August	September	October
1	3.4	*10	51	55	39	29	9.7	4.5	3.1	4.9
2	4.2	*10	44	47	38	27	9.3	4.5	2.7	4.9
3	2.0	*10	39	45	37	25	9.3	4.5	3.1	6.5
4	1.0	*10	60	43	40	25	8.4	4.5	2.7	6.5
5	1.4	*10	74	45	42	24	7.9	4.2	2.7	10
6	1.2	*10	78	44	44	24	7.4	4.2	2.7	10
7	2.7	*10	64	36	46	22	7.4	4.2	2.7	8.8
8	1.6	*10	55	35	45	20	7.9	4.2	2.7	7.4
9	2.4	*10	51	35	43	24	7.4	4.2	2.7	13
10	2.7	*10	43	36	42	23	7.4	3.8	2.7	9.7
11	4.9	*10	64	35	43	19	7.4	3.8	2.7	7.0
12	5.6	*10	78	34	43	14	6.5	3.8	2.7	6.5
13	10	*10	60	33	43	11	6.5	3.8	2.7	20
14	7.0	*10	49	39	43	17	7.0	4.2	2.7	18
15	4.5	*10	42	32	41	19	7.0	4.2	2.7	9.7
16	3.1	16	40	30	39	17	7.0	4.2	2.7	7.4
17	2.7	20	36	29	39	16	6.5	3.8	2.7	5.6
18	5.2	17	42	33	63	16	6.5	3.8	2.7	4.9
19	7.0	13	51	44	65	15	6.1	3.8	2.7	4.5
20	3.1	12	51	40	55	15	5.6	3.4	2.7	4.5
21	4.5	13	40	33	46	14	5.6	3.4	2.4	4.5
22	*10	16	32	30	42	13	5.6	3.1	1.8	4.2
23	*10	18	30	30	40	12	5.6	3.1	1.8	7.9
24	*10	127	35	28	39	12	5.2	3.1	1.8	7.4
25	*10	88	78	27	38	12	4.9	3.4	2.0	
26	*10	144	64	28	36	11	4.9	3.4	3.1	
27	*10	94	50	31	35	11	4.9	3.4	32	
28	*10	64	53	36	33	11	4.5	3.4	8.8	
29	*10		54	38	34	10	4.5	3.4	5.2	
30	*10		50	41	33	9.7	4.5	4.2	4.5	
31	*10		57		33		4.5	3.4		
Mean Sec.Ft.	5.8	28.3	52.1	36.4	41.9	17.3	6.5	3.8	3.9	9.2
Total Ac.Ft.	357	1571	3203	2166	2577	1027	402	236	234	437

* Estimated

Total for period - 12,210 acre-feet

TABLE A-6

DISCHARGE OF CARRICK SPRINGS

May 1 to September 30, 1957

Intermittent Measurements of Discharge in Second-Feet

Day	April	May	June	July	August	September
1		7.96				7.03
2				6.75		
3				6.80		
4				6.80		
5			6.99		7.01	
6						
7						
8				7.00	6.94	
9						
10				6.84		7.10
11						
12					7.09	
13			7.08			
14						
15		7.16		6.84	7.03	
16						
17				6.92		
18						
19					7.29	
20						
21			6.99			
22		7.16		7.00	6.96	
23						
24						
25				7.00		
26						
26			7.08		7.18	
27						
28						
29						
30				7.08	7.13	
31						

TABLE A-7

DISCHARGE OF CLELAND SPRING

July 1 to September 30, 1957

Intermittent Measurement of Discharge in Second-Feet

Day	April	May	June	July	August	September
1						
2					11.78	
3						11.66
4						
5						
6					12.70	
7						
8						
9						
10						11.66
11					11.55	
12						
13					11.55	
14						
15						
16					11.55	
17						11.66
18						
19						
20					11.55	
21						
22						
23					11.69	
24						
25						
26				11.98		
27					11.77	
28						
29						
30				11.95	11.66	
31						

TABLE A-8
DAILY MEAN DISCHARGE OF MONTAGUE WATER CONSERVATION DISTRICTS
PARKER CREEK CANAL
October 1, 1956 to September 30, 1957
In Second-Feet

Day	October	November	December	January	February	March	April	May	June	July	August	September
1	N	3.1				44	27	22	30			
2		2.9	NO	NO		41	26	38	28			
3	N	2.8			N	35	26	33	21	N	N	N
4		2.9	FLOW	FLOW		36	28	32	18.3			
5		2.7				41	32	34	15.0			
6	O	2.6	0.1	0.5	O	37	34	32	12.3	O	O	O
7		2.5		0.7		38	31	32	10.1			
8		4.4	NO	0.9		38	29	28	8.9			
9		4.4		1.6		43	25	24	7.5			
10	F	4.9	RECORD	1.7	F	36	24	18.6	4.2	F	F	F
11		4.7		1.5		38	19	14.6	3.1			
12		3.8	9.4	3.9		52	12.3	13.7	2.7			
13	L	NO	6.0	30	L	39	12.3	13.7	1.6	L	L	L
14		RECORD	1.8	11.0		32	23	8.9	1.3			
15		4.1	1.1	6.6		30	3.1	5.8	0.9			
16	O	4.1	0.9	4.9	O	31	0.1	5.4	0.8	O	O	O
17		4.1	1.3	4.0		31	0.1	8.9	0.3			
18		4.4	1.5	3.6		30	0.1	58	0.1			
19	W	3.4	1.6	5.0	W	28	0.1	41	0.1	W	W	W
20		1.7	1.6	14.7		27		41				
21		1.1	1.7	3.8		25	N	34	N			
22		0.1	1.2	4.7		23	O	18.6	O			
23		0.1	1.5		1.0	21		15.5				
24		0.1	1.5	N	1.0	21	F	14.6	F			
25	0.1	0.1	1.3	O	1.0	24	L	16.4	L			
26	0.1		1.3		1.0	27	O	20	O			
27	0.1	NO	0.1	F	13.2	27	W	23	W			
28	0.1			L	44	29	0.1	23				
29	0.1	FLOW	NO	O	——	32	1.7	24				
30	1.8			W	——	30	10.7	30				
31	3.1	——	FLOW		——	29	——	30				
Mean	0.8	2.8	2.0	5.8	10.2	33	16.6	24	8.7			
Discharge ac-ft	11	128	67	195	121	2,010	723	1,470	327			

Total for period - 5,052 acre-feet

TABLE A-9

DAILY MEAN DISCHARGE OF EDSON-FOULKE YREKA DITCH
NORTH OF PARKS CREEK

April 5 to September 24, 1957

In Second-Feet

Day	April	May	June	July	August	September
1		33	62	34	5.0	2.8
2	NO	16.2	64	31	4.9	2.7
3		15.2	63	30	4.7	2.7
4	RECORD	15.2	61	26	4.1	2.8
5	1.7	25	60	24	4.1	2.8
6	1.7	56	58	21	4.5	2.7
7	1.7	55	56	21	4.9	2.5
8	1.7	58	56	19.7	4.7	2.7
9	1.5	64	55	18.2	4.3	2.7
10	1.0	60	52	16.2	4.3	2.7
11	8.5	54	49	15.2	4.1	2.7
12	21	54	48	14.0	4.0	2.7
13	NO	56	NO RECORD	14.5	4.0	2.8
14	RECORD	51	48	15.2	4.0	2.7
15	25	46	46	13.4	3.7	2.5
16	24	53	44	11.0	3.5	2.5
17	23	55	43	9.8	3.2	2.7
18	22	34	41	9.4	3.2	2.8
19	25	54	43	8.5	3.2	2.8
20	22	47	42	7.9	3.2	3.0
21	20	45	40	7.9	3.2	2.8
22	20	60	40	7.7	3.5	2.7
23	20	62	40	6.8	3.1	2.7
24	20	62	40	7.7	2.7	2.5
25	19.0	63	35	7.7	2.7	N
						O
26	20	65	35	7.7	2.7	
27	19.7	67	38	7.5	2.8	R
28	27	68	39	7.2	3.1	E
29	34	68	38	6.8	3.7	C
30	40	63	35	6.3	3.8	O
31	—	60	—	5.7	3.0	R
						D
Mean	17.5	51	47	14.2	3.7	2.7
Flow ac-ft	832	3,130	2,700	872	227	128

Total for period - 7,889 acre-feet

TABLE A-10
DAILY MEAN STORAGE IN DWINNELL RESERVOIR
October 1, 1956 to September 30, 1957
In Acre-Feet

Day	October	November	December	January	February	March	April	May	June	July	August	September
1	19,890	19,240	19,760	20,020	21,220	29,540	35,200	35,360	34,720	28,100	20,280	14,140
2	19,760	19,240	19,760	20,020	21,360	30,000	35,200	35,520	34,720	27,950	20,020	14,020
3	19,760	19,370	19,760	20,020	21,360	29,850	35,200	35,520	34,720	27,650	19,890	13,900
4	19,760	19,370	19,760	20,020	21,360	30,450	35,360	35,360	34,720	27,350	19,630	13,780
5	19,630	19,370	19,630	20,020	21,360	30,600	35,360	35,360	34,720	27,050	19,370	13,780
6	19,630	19,500	19,630	20,020	21,360	30,900	35,520	35,040	34,720	26,750	19,110	13,660
7	19,500	19,500	19,630	20,020	21,360	31,050	35,520	35,040	34,560	26,450	18,850	13,540
8	19,500	19,500	19,630	20,020	21,500	31,360	35,680	35,040	34,400	26,150	18,720	13,420
9	19,370	19,500	19,630	20,020	21,500	31,680	35,680	35,040	34,240	25,850	18,460	13,300
10	19,370	19,500	19,630	20,020	21,500	32,000	35,680	34,880	34,080	25,550	18,200	13,190
11	19,240	19,630	19,760	20,020	21,500	32,320	35,680	34,880	33,760	25,250	18,070	13,080
12	19,240	19,630	19,760	20,020	21,640	32,640	35,840	34,720	33,440	24,950	17,810	12,970
13	19,240	19,630	19,890	20,410	21,640	32,800	35,840	34,720	33,120	24,650	17,550	12,750
14	19,110	19,630	19,890	20,670	21,780	32,960	36,000	34,720	32,960	24,350	17,420	12,640
15	19,110	19,630	19,890	20,800	21,780	33,120	36,000	34,560	32,640	24,050	17,290	12,530
16	19,110	19,630	19,890	20,800	21,920	33,440	36,140	34,560	32,320	23,900	17,030	12,420
17	18,980	19,630	20,020	20,800	21,920	33,440	36,140	34,400	32,000	23,750	16,900	12,310
18	18,980	19,760	20,020	20,940	22,060	33,760	36,140	34,560	31,840	23,600	16,790	12,200
19	18,980	19,760	20,020	21,080	22,060	33,920	36,280	34,880	31,520	23,460	16,660	12,100
20	18,850	19,760	20,020	21,080	22,200	33,920	36,280	35,040	31,360	23,180	16,420	11,900
21	18,850	19,760	20,020	21,080	22,200	34,080	36,280	35,200	31,050	22,900	16,300	11,800
22	18,850	19,760	20,02-	21,220	22,340	34,240	36,280	35,200	30,750	22,760	16,060	11,700
23	18,850	19,760	20,020	21,220	22,900	34,240	36,280	35,040	30,600	22,480	15,820	11,600
24	18,850	19,760	20,020	21,220	24,500	34,400	36,280	35,040	30,300	22,340	15,580	11,500
25	18,850	19,760	20,020	21,220	26,600	34,400	36,120	34,880	30,000	22,060	15,340	11,500
26	18,850	19,760	20,020	21,220	27,650	34,560	36,000	34,880	29,700	21,780	15,100	11,400
27	18,850	19,760	20,020	21,220	28,580	34,560	35,840	34,720	29,380	21,640	14,860	11,500
28	18,850	19,760	20,020	21,220	29,220	34,720	35,680	34,720	29,060	21,360	14,740	11,700
29	18,980	19,760	20,020	21,220	———	34,880	35,520	34,560	28,740	21,080	14,500	11,800
30	19,110	19,760	20,020	21,220	———	35,040	35,360	34,560	28,420	20,940	14,380	11,900
31	19,240	———	20,020	21,220	———	35,040	———	34,720	———	20,340	14,260	———

TABLE A-11

DAILY MEAN RELEASES FROM DWINNELL RESERVOIR

April 1 to September 30, 1957

In Second-Feet

Day	April	May	June	July	August	September
1	N	96	40	84	80	19.4
2		97	36	83	80	21
3		98	15.7	82	79	24
4	O	97	11.1	81	80	25
5		96	27	81	78	24
6		93	41	81	77	24
7	R	92	55	80	75	24
8		86	66	79	75	24
9		79	70	78	74	26
10	E	75	76	81	64	33
11		60	85	79	59	36
12	L	53	86	79	57	36
13		39	87	81	58	36
14		53	85	82	48	36
15	E	57	83	85	47	36
16		60	81	28	46	36
17	A	61	77	0	46	35
18		62	77	24	46	34
19		61	76	58	46	34
20	S	54	76	61	51	34
21		51	75	61	63	35
22	E	54	71	60	66	34
23		54	68	59	75	30
24	18.7	55	70	63	73	22
25	42	54	79	64	75	23
26	42	55	84	69	73	22
27	50	52	85	71	66	17.1
28	61	46	86	71	54	8.5
29	70	40	84	71	46	4.5
30	93	39	84	77	28	0
31	——	39	—	89	18.6	——
Mean	54	65	68	71	61	27
Release ac-ft.	746	3,980	4,030	4,240	3,770	1,570

Total for period = 18,336 acre-feet

TABLE A-12

DAILY MEAN DISCHARGE OF SHASTA RIVER WATER ASSOCIATION
PUMPING PLANT

April 12 to September 30, 1957

In Second-Feet

Day	April	May	June	July	August	September
1		41	41	41	41	41
2		41	41	41	41	41
3		41	41	41	41	41
4		41	41	41	41	41
5		41	41	41	41	41
6		41	41	41	41	41
7		41	41	41	38	41
8		41	41	41	34	41
9		41	41	41	41	41
10		41	41	41	41	41
11		41	41	41	41	41
12	3.7	41	41	41	41	41
13	5.0	41	41	41	41	41
14	4.5	41	41	40	41	41
15	6.0	41	41	29	36	41
16	29	41	41	41	31	41
17	41	41	41	41	41	41
18	41	41	41	41	41	41
19	37	41	41	41	27	41
20	0	41	35	41	37	41
21	00	41	38	41	41	41
22	35	41	41	41	41	41
23	41	14.3	41	41	41	41
24	41	41	39	41	41	41
25	41	41	32	41	41	41
26	41	41	41	41	41	41
27	41	41	41	41	41	20
28	41	41	41	41	41	0
29	34	41	41	41	41	0
30	25	41	41	41	41	0
31	—	41	—	41	41	—

Total for period - 12,930