STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF WATER RESOURCES

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REPORT ON WATERMASTER SERVICE IN SURPRISE VALLEY WATERMASTER SERVICE AREA

Modoc County, California

1953 SEASON

Sacramento, California
March, 1954

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SUBMISSION TO, AND ADOPTION BY
DEPARTMENT OF PUBLIC WORKS

I, L. C. Jopson, Principal Hydraulic Engineer, Division of Water Resources, Department of Public Works of the State of California, submit this "Report on Watermaster Service in Surprise Valley Watermaster Service Area, Modoc County, California, 1953 Season".

/s/ L. C. JOPSON
Principal Hydraulic Engineer

I, Harvey O. Banks, Assistant State Engineer, Division of Water Resources, Department of Public Works of the State of California, approve this "Report on Watermaster Service in Surprise Valley Watermaster Service Area, Modoc County, California, 1953 Season".

/s/ HARVEY O. BANKS
Assistant State Engineer

I, A. D. Edmonston, State Engineer and Chief of the Division of Water Resources, Department of Public Works of the State of California, approve and adopt this "Report on Watermaster Service in Surprise Valley Watermaster Service Area, Modoc County, California 1953 Season", as a report of the Department of Public Works.

WITNESS my hand and the seal of the Department of Public Works of the State of California this 15th day of April, 1954.

DEPARTMENT OF PUBLIC WORKS
STATE OF CALIFORNIA

By /s/ A. D. EDMONSTON
A. D. Edmonston
State Engineer

(SEAL)

ORGANIZATION

STATE DEPARTMENT OF PUBLIC WORKS
DIVISION OF WATER RESOURCES

Frank B. Durkee . . . . . Director of Public Works

A. D. Edmonston . . . . . State Engineer

Harvey O. Banks . . . . . Assistant State Engineer

This report was prepared under the direction of

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INTRODUCTION

This is the fifteenth annual report on watermaster service in the Surprise Valley Watermaster Service Area and covers the period of water distribution in 1953 beginning on March 19 and terminating on September 30.

The service area was created by order of the Division of Water Resources on January 10, 1939, and was supplemented and revised by order of December 31, 1941, to include the water rights determined by decrees of the Superior Court, Modoc County, on various streams in Surprise Valley as follows:

Mill Creek	Warrens vs. Wimer	3024
Soldier Creek	San Francisco Cattle Loan Co. vs. Cramton	2405
Pine Creek	Gaustad vs. McCulley	3391
Cedar Creek	Hill vs. Acty Lighty vs. Cook	2343 1206
Deep Creek	Tyeryar vs. Benner	3101
Owl Creek	Cummins vs. Allen	2410
Rader Creek	Powers vs. Woodruff	3626
Eagle Creek	Harris vs. Adams	3284
Emerson Creek	Murphy vs. Warren	2840

Prior to January 10, 1939, service areas had been created on various streams as the water rights were determined on each. These smaller service areas were combined into a single administrative unit when the present Surprise Valley Watermaster Service Area was created.

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 herein under four headings as follows: Introduction, Water Supply, Distribution of Water, and Changes in Ownership of Lands and Water Rights. Following the text are thirteen tables presenting precipitation data at Cedarville and water supply records at various locations within the area.

WATER SUPPLY

Precipitation

Data on precipitation, as compiled from observations made by the United States Weather Bureau at Cedarville, for the period October 1, 1952 to September 30, 1953, are shown in Table 1. The precipitation for the period was 14.21 inches which is equivalent to about 114 per cent of normal.

The water content of the snowpack on the Eagle Peak, Blue Lake Ranch, Cedar Pass, and Adin Mountain snow courses in 1953, as published in the bulletin entitled "Water Conditions in California, April 1, 1953", averaged 12.7 inches or 78 per cent of the computed normal for the four courses.

Stream Flow

Stream flow measuring stations equipped with water stage recorders were maintained during the period of watermaster service at the following locations:

Mill Creek above diversions.

Soldier Creek above diversions.

Pine Creek at division between North and South channels.

Cedar Creek above diversions.

North Deep Creek above diversions.

South Deep Creek below Espil Ditch.

Owl Creek below Allen-Arreche Ditch.

Rader Creek at Cockrell Diversion.

Eagle Creek below Gill Ditch

Emerson Creek above diversions

Records of discharge at the above stations are presented in Tables 2, 3, 4, 5, 6, 7, 9, 10, 11, and 12, respectively. The computed mean daily discharge of Deep Creek, comprising discharges of North Deep Creek and South Deep Creek, is shown in Table 8.

DISTRIBUTION OF WATER

Distribution of water from the various creeks was in accordance with the rights to water set forth in the respective decrees. The percentage of allotments available for distribution on each stream was determined from the mean daily discharge at the respective measuring station.

Mill Creek

Use of water from Mill Creek was confined largely to domestic and stockwater requirement during the spring months. During this period there was a surplus of water due to the above normal precipitation and consequent heavy runoff. There was little demand for irrigation water until after the latter part of June. Thereafter there was enough water available to supply most of the third priority irrigation rights until about the middle of July. Lack of appreciable precipitation during the early part of the summer resulted in a shortage of irrigation water during the latter part of July and early August. Thereafter there was only enough water to

supply domestic and stockwater requirements, and during September it became necessary to distribute first priority allotments on a pro-rata basis.

The distribution of water by months is shown in the following tabulation:

Priority	Percentage of allotments delivered					
	April	May	June	July	August	September
1st	100	100	100	100	100	60
2nd	100	100	100	100	62	0
3rd	28	37	70	61	1	0
4th	0	10	55	32	0	0

Soldier Creek

The distribution of water in Soldier Creek was commenced on March 19 when the water was turned to the lower users for the first rotation. Due to above normal precipitation and subnormal daily temperatures, there was little demand for water by the early priorities during the first part of the irrigation season making it possible to fill the allotments of later priority. There was ample water to fill all requirements until about the middle of June. Thereafter the daily discharge declined steadily and reached a stage during the latter part of the season when water was available only for stockwatering needs.

A tabulation showing the percentage of allotments delivered to the various priorities is shown in Table 13.

Pine Creek

Distribution on Pine Creek was begun on the 23rd of March, the entire flow being diverted at that time into the North channel for use on the Harris ranch. Shortly thereafter enough water was available to divide the flow between the North and South channels. This division was maintained for the remainder of the spring. Distribution on the channels was on a semi-rotation basis with the users taking water in turn without too close regard to priorities. All users were able to divert sufficient water to meet their irrigation needs. After about the middle of June the flow decreased rapidly until on about the first of July water ceased to reach the recorder station. For the remainder of the season there was no flow in Pine Creek at the division between the North and South channels.

Cedar Creek

The demand for water on Cedar Creek at the beginning of the season was largely for use by the lower users, there being little demand for water on the upstream area devoted largely to alfalfa. Heavy precipitation and ample stream flow during the spring months obviated the necessity of intensive watermaster service until about the middle of June. At that time diversion of first priority water was begun in appreciable quantity and the remaining water was all utilized for second priority allotments. Thereafter, the discharge of Cedar Creek decreased rapidly and after the early part of July the entire flow was diverted into the McCulley Ditch for use on the O. Cramton ranch.

Thoms Creek ditch, diverting from Thoms Creek into Cedar Creek, was opened on about the first of May. The water was rediverted for

use on the Wallace, Warrens, and Nosler ranches. The water supply available for the Thoms Creek ditch failed during the early part of July. During the period of diversion the flow in Thoms Creek ditch averaged about 1.00 cubic foot per second.

The distribution of water from Cedar Creek by months is shown in the following tabulation:

	Percentage of Allotments Delivered					
Priority	April	May	June	July	August	September
1st	30	29	53	50	39	20
2nd	33	52	68	4	0	0
3rd	32	20	20	0	0	0
4th	0	66	0	0	0	0

Deep Creek

Distribution of water on Deep Creek commenced on the first of April with most of the water being diverted by the later priority users on the upper ranches with only limited quantities being used by the earlier priorities. The Company ditch diverting from North Deep Creek, was partially opened at this time to satisfy the first priority rights on the Gooch, Page, and Sweet ranches. After the first part of May the demand for water by the early priorities increased to the extent that it was necessary to discontinue diversion by the later priorities. Prior to the middle of June the available water supply was sufficient to supply first and a portion of second priority water rights. Thereafter, only a portion of first priority water was available, and after about the middle of July the entire flow of South Deep Creek was diverted into the Sharp-Messier ditch for use on the upper Harris ranch and the entire flow of North Deep Creek was diverted into the Company ditch.

The distribution of water by months is shown in the following tabulation:

Priority	Percentage of Allotments					
	April	May	June	July	August	September
1st	61	68	82	30	12	7
2nd	18	52	39	2	0	0
3rd	9	18	35	0	0	0
4th	44	21	7	0	0	0
5th	55	10	5	0	0	0

Owl Creek

Above normal precipitation and predominately cool weather during the spring months resulted in only moderate demands for water from Owl Creek. Occasionally during this period, the runoff was of great magnitude rendering the recorder well inoperative. It was thus impossible to obtain a complete, continuous record of daily discharge. From about the middle of May through about the middle of July the water supply was in excess of the demand. The surplus was allowed to flow through the main channel to Middle Lake. For the remainder of the season the flow declined steadily, there being only domestic and stock water available after the latter part of August.

The distribution of water by months is shown in the following tabulation:

Priority	Percentage of Allotments Delivered					
	April	May	June	July	August	September
1st	100	100	100	100	100	100
2nd	100	100	100	100	27	100
3rd	100	100	100	100	70	75
4th	100	100	100	100	70	30
5th	100	100	100	100	72	10
6th	100	100	100	100	52	0
7th	100	100	100	100	52	0
8th	0	0	80	70	33	0
9th	100	100	100	100	60	0
10th	40	60	100	100	0	0
11th	50	40	100	100	0	0
12th	20	0	50	60	0	0
13th	0	0	75	70	0	0
14th	0	0	100	80	0	0
15th	0	0	80	75	0	0
16th	0	0	100	0	0	0
17th	0	0	100	0	0	0
18th	0	0	100	0	0	0
19th	0	0	100	0	0	0
20th	0	0	23	0	0	0
21st	0	0	0	0	0	0

Rader Creek

There was little demand for water from Rader Creek during April and May due to the above normal precipitation throughout the spring season. A surplus of water was available during most of this period and until about the 10th of July when the demand began to exceed the supply. Thereafter, the flow decreased rather rapidly, and near the end of July it became necessary to close the Cockrell diversion, followed by second priority rights as the available water failed to reach the places of use. For the remainder of the season the only diversions being made were those of the Dollarhide, Minto, and Woodruff ranches.

The distribution of water by months is shown in the following tabulation:

	Percentage of Allotments Delivered					
Priority	April	May	June	July	August	September
1st	100	100	100	100	100	90
2nd	50	56	100	100	53	0
3rd	46	52	100	85	20	0
4th	22	55	85	65	0	0
5th	6	50	97	30	0	0
6th	5	34	100	0	0	0
7th	5	25	90	0	0	0

Eagle Creek

The snow pack on the Eagle Creek watershed was below normal near the beginning of the irrigation season, however, above normal precipitation during the spring months resulted in a considerable

increase in the snow pack. Maximum runoff did not occur until the month of July due to predominately cool spring weather. The demand for irrigation water was moderate throughout the spring until the latter part of June. There was ample water for all use until the latter part of July. Thereafter the flow in Eagle Creek decreased rapidly and after the middle of August water was available only for domestic and stock water needs.

The distribution of water by months is shown in the following tabulation:

	Percentage of Allotments Delivered					
Priority	April	May	June	July	August	September
1st	100	100	100	100	100	100
2nd	66	100	100	100	60	0
3rd	37	38	58	67	2	0
4th	52	58	42	20	0	0

Emerson Creek

Demand for water from Emerson Creek was moderate during the spring with ample water available to fill all requirements until after July 1. During the months of July and August the Bicondoa ranch and, to a lesser extent, the Grove ranch pumped from wells to supply their irrigation needs. Domestic and stock water was available from the creek throughout the season.

The distribution of water by months is shown in the following tabulation:

Priority	Percentage of Allotments Delivered					
	April	May	June	July	August	September
1st	100	100	100	100	100	100
2nd	57	52	83	65	21	10
3rd	18	31	68	33	0	0
4th	0	3	40	20	0	0

CHANGES IN OWNERSHIP OF LANDS AND WATER RIGHTS

The changes in ownership of lands and water rights, which have occurred subsequent to filing "Statement for Surprise Valley Watermaster Service Area, County of Modoc, State of California, for 1953", and which shall be included in the 1954 statement for the said service area, are as follows:

Tract	Name of Water Right Owner Appearing in 1953 Statement	Name of Water Right Owner To Appear in 1954 Statement	Amount of Water c.f.s.
8-20 8-21 8-48	Lake City Swiss Dairy Co.	Bettandorf, Norman and Bettandorf, Althea	3.39
8-27	Painter, Thomas	Walker, William M.	0.12
8-33	Phipps, Charles and Phipps, Vonetia	Chase, Elzie and Chase, Jessie	0.33
8-43	Vernon, M. R. and Vernon, Gladys	Heesch, Margaret	0.32
8-53	Steward, Marion	Pflaum, Carl and Pflaum, Phyllis	0.90
8-70	McCulley, Robert E. and McCulley, Vesta	Davis, Leroy A. and Davis, Blanche I.	2.50
8-72	Blevins, Gale A.	McCulley, Robert E. and MCulley, Vesta	0.10
8-74	Gyger, Ira W. and Gyger, Florence M.	Wing, Louis O. and Wing, Ardith J.	0.12
8-102	House, Estate of Daniel	Bodie, William W. and Bodie, Mabel E.	1.00
8-136	Vaughan, Margaret and Vaughan, Estate of Joseph F.	Bone, John B.; Bone Eva M.; Bone, Lloyd R. and Bone, Ann L.	5.00
8-157	Dorton, C. M.	Minto, Elmer J. and Minto, Sharon	0.025

TABLE 1

PRECIPITATION AT CEDARVILLE
1952-53
MODOC COUNTY, CALIFORNIA

In Inches

Month	Normal Precipitation	1952-53 Precipitation
October	1.03	0.18
November	1.50	0.74
December	1.54	2.20
January	1.77	3.06
February	1.58	1.17
March	1.44	0.90
April	.97	1.60
May	.99	2.58
June	.71	1.54
July	.25	0.00
August	.16	0.23
September	.50	0.01
TOTALS	12.44	14.21

TABLE 2

DAILY DISCHARGE OF MILL CREEK ABOVE DIVERSIONS
April 1 to September 30, 1953

In Cubic Feet Per Second

Day	April	May	June	July	August	September
1	14.6	32	37	32	4.8	1.8
2	15.2	32	38	31	4.6	1.7
3	15.2	28	36	32	4.6	1.5
4	15.8	30	36	29	4.6	1.4
5	19.2	32	36	27	4.6	1.4
6	19.2	35	45	27	4.0	1.4
7	16.8	36	58	26	3.5	1.2
8	14.1	35	61	24	3.2	1.2
9	12.6	32	57	23	3.2	1.2
10	12.6	31	51	20	3.0	1.1
11	12.0	31	49	19.2	2.8	1.1
12	12.0	31	47	18.0	2.6	1.1
13	11.6	31	47	16.8	2.6	1.1
14	11.1	32	45	16.8	2.6	1.1
15	10.6	33	46	16.2	2.4	1.1
16	11.1	35	49	15.2	2.2	1.1
17	12.0	40	51	12.6	2.2	1.1
18	12.0	48	53	11.1	2.4	1.1
19	12.0	78	54	11.1	2.4	1.1
20	16.2	64	51	12.0	2.2	1.1
21	24	58	48	11.1	2.4	1.1
22	37	53	46	10.2	2.2	1.1
23	43	50	46	10.2	2.0	1.1
24	40	47	45	9.3	2.2	1.2
25	39	41	43	8.9	2.2	1.2
26	43	39	41	8.4	2.0	1.2
27	51	36	40	7.6	2.0	1.4
28	47	36	39	6.5	2.0	1.4
29	40	35	36	6.1	2.4	1.4
30	35	36	34	5.8	2.2	1.4
31		38		5.8	2.2	
Mean	22.5	39.2	45.5	16.4	2.8	1.2
Runoff in Ac. Ft.	1339	2410	2707	1011	175	74

Total for period = 7716 acre-feet.

TABLE 3

DAILY DISCHARGE OF SOLDIER CREEK ABOVE DIVERSIONS
March 23 to September 30, 1953

In Cubic Feet Per Second

Day	March	April	May	June	July	August	September
1		9.2	34	32	7.4	2.6	2.3
2		11.5	33	39	7.2	2.6	2.3
3		15.7	35	42	7.2	2.6	2.2
4		13.2	45	51	7.0	2.6	2.2
5		12.8	50	48	6.6	2.6	2.2
6		11.2	51	41	6.2	2.6	2.2
7		9.8	44	36	5.9	2.5	2.2
8		8.4	39	35	5.8	2.5	2.2
9		7.4	37	24	5.5	2.4	2.2
10		6.8	34	21	5.4	2.4	2.1
11		6.5	33	21	5.2	2.4	2.1
12		6.2	32	19.0	5.0	2.4	2.1
13		6.1	35	17.3	4.9	2.3	2.1
14		6.2	37	17.3	4.8	2.3	2.1
15		6.6	36	17.8	4.7	2.3	2.1
16		6.8	38	24	4.6	2.3	2.0
17		6.8	48	22	4.4	2.3	2.0
18		8.4	54	21	4.2	2.3	2.0
19		9.2	57	18.4	4.1	2.3	2.1
20		16.6	37	16.7	4.1	2.2	2.1
21		26	33	15.6	4.1	2.2	2.1
22		45	31	14.5	4.0	2.2	2.1
23	7.4	33	30	13.2	3.6	2.2	2.1
24	9.8	33	29	11.5	3.3	2.2	2.1
25	9.8	31	25	10.8	3.1	2.2	2.1
26	8.9	26	24	9.8	3.0	2.2	2.1
27	10.4	39	25	9.2	2.9	2.2	2.1
28	10.8	48	26	8.6	2.8	2.2	2.1
29	9.2	40	26	8.1	2.8	2.2	2.2
30	8.4	37	27	7.6	2.8	2.3	2.2
31	8.9		27		2.7	2.3	
Mean	9.3	18.1	35.9	22.4	4.7	2.4	2.1
Runoff in Ac. Ft.	166	1078	2206	1334	288	145	127

Total for period - 5240 acre-feet.

TABLE 4

DAILY DISCHARGE OF PINE CREEK AT DIVISION BETWEEN
NORTH AND SOUTH CHANNELS
March 23 to June 22, 1953

In Cubic Feet Per Second

Day	March	April	May	June	July	August
1		8.6	9.2	10.8	0	
2		8.8	9.2	38		
3		10.9	13.8	34		
4		11.5	15.6	32		
5		19.5	16.5	30		
6		13.2	8.4	36		
7		9.8	9.8	39		
8		7.6	7.6	39		
9		6.7	7.8	41		
10		6.2	6.5	41		
11		6.1	9.6	39		
12		5.8	9.0	36		
13	No Record	5.8	9.5	30		
14		6.7	9.4	26	No Record	No Record
15		7.6	9.6	16.2		
16		7.8	9.4	12.2		
17		7.6	11.2	10.0		
18		10.8	11.8	5.9		
19		12.5	34	4.4		
20		20	30	3.3		
21		32	20	2.9		
22		32	20	2.4		
23	10.8	16.6	20			
24	15.4	13.6	15.4			
25	15.8	12.8	14.0			
26	15.8	13.5	16.6			
27	15.8	11.5	16.2			
28	13.6	13.0	14.0	No Record		
29	10.1	11.3	12.4			
30	7.7	9.4	11.4			
31	8.2		10.4			
Mean	12.6	12.0	13.5	24.0		
Runoff in Ac. Ft.	225	712	830	1049		

Total for period - 2820 acre-feet.

TABLE 5

DAILY DISCHARGE OF CEDAR CREEK ABOVE DIVERSIONS
April 1 to September 30, 1953

In Cubic Feet Per Second

Day	April	May	June	July	August	September
1	13.9	18.6	22	10.0	2.7	1.1
2	13.9	18.6	22	9.0	2.4	1.1
3	14.0	18.5	22	9.0	2.2	1.1
4	14.1	18.5	19.0	9.0	2.1	1.1
5	14.1	18.6	19.0	7.8	2.1	1.0
6	14.1	18.8	19.0	6.1	2.1	1.0
7	13.9	19.2	43	5.6	1.9	1.0
8	13.9	19.8	16.6	4.6	1.9	1.0
9	14.0	20	16.6	4.3	1.9	1.0
10	14.0	20	16.6	3.9	1.9	0.9
11	13.9	21	19.0	3.6	1.8	.9
12	13.8	21	19.0	3.6	1.8	.9
13	14.0	21	16.6	3.6	1.8	.8
14	14.5	18.8	19.0	3.4	1.8	.8
15	15.0	18.8	19.0	3.6	1.6	.8
16	15.0	23	19.0	3.6	1.6	.8
17	15.3	24	19.0	3.4	1.5	.8
18	15.3	22	16.6	3.4	1.5	.9
19	16.5	38	16.6	3.1	1.5	.9
20	16.8	80	14.7	3.1	1.5	.9
21	17.5	60	14.7	2.9	1.4	.9
22	17.6	49	14.7	2.9	1.4	1.0
23	17.6	40	13.0	2.9	1.2	1.0
24	17.3	38	13.0	2.7	1.2	1.0
25	18.4	35	11.4	2.7	1.2	1.0
26	18.4	32	11.4	2.7	1.2	1.0
27	18.8	29	10.0	2.5	1.2	1.1
28	18.8	29	10.0	2.5	1.2	1.1
29	18.8	25	10.0	2.7	1.1	1.1
30	18.6	25	10.0	2.5	1.1	1.1
31		22		2.7	1.1	
Mean	15.7	27.8	17.1	4.3	1.6	1.0
Runoff in Act. Ft.	936	1710	1017	265	101	60

Total for period - 4090 acre-feet.

TABLE 6

DAILY DISCHARGE OF NORTH DEEP CREEK ABOVE DIVERSIONS
April 1 to September 30, 1953

In Cubic Feet Per Second

Day	April	May	June	July	August	September
1	5.6	21	13.7	2.6	0.5	0.3
2	5.6	19.1	15.3	2.5	.5	.3
3	5.6	17.4	16.8	2.5	.5	.3
4	5.6	17.4	16.0	2.3	.5	.3
5	6.7	17.4	16.0	2.2	.5	.3
6	6.7	17.4	20	1.9	.5	.3
7	6.7	17.4	38	1.8	.5	.3
8	5.6	15.7	13.7	1.8	.5	.3
9	5.6	14.2	15.3	1.8	.5	.3
10	5.0	13.0	13.7	1.7	.5	.3
11	4.6	11.8	13.7	1.5	.4	.3
12	4.2	10.7	13.0	1.4	.4	.3
13	4.2	11.8	10.4	1.3	.4	.3
14	4.2	14.2	10.4	1.3	.4	.3
15	4.2	15.7	11.0	1.2	.4	.2
16	4.2	15.7	11.0	1.1	.4	.2
17	4.2	21	10.0	1.1	.4	.2
18	4.2	30	9.4	1.0	.4	.2
19	4.2	40	9.4	0.9	.4	.2
20	4.6	26	8.9	.8	.4	.2
21	5.6	22	7.6	.8	.4	.2
22	9.9	22	6.9	.8	.4	.2
23	15.7	20	5.6	.8	.4	.2
24	13.0	17.9	4.2	.8	.4	.2
25	13.0	16.0	3.2	.7	.4	.2
26	15.7	15.3	3.2	.7	.4	.2
27	47	16.0	3.2	.7	.4	.2
28	33	14.2	3.1	.7	.3	.2
29	21	13.7	3.1	.6	.3	.2
30	21	13.7	3.0	.6	.3	.2
31		13.0		.6	.3	
Mean	9.4	17.8	11.0	1.3	0.4	0.2
Runoff in Ac. Ft.	562	1092	652	80	26	15

Total for period - 2430 acre-feet.

TABLE 7

DAILY DISCHARGE OF SOUTH DEEP CREEK BELOW ESPIL DITCH
April 1 to September 30, 1953

In Cubic Feet Per Second

Day	April	May	June	July	August	September
1	10.5	34	4.3	5.8	1.4	1.0
2	11.9	27	5.0	5.6	1.4	1.0
3	13.5	27	5.0	5.2	1.3	1.0
4	15.8	27	5.6	5.0	1.3	0.9
5	18.4	27	5.2	4.8	1.3	.9
6	17.0	27	8.5	4.5	1.4	.9
7	14.0	27	28	4.3	1.3	.8
8	12.4	27	51	4.1	1.2	.7
9	11.0	25	40	3.9	1.2	.7
10	10.0	23	28	3.7	1.2	.7
11	9.2	20	26	3.5	1.2	.7
12	8.5	20	23	3.3	1.2	.7
13	8.5	21	21	3.3	1.1	.7
14	7.7	22	19.8	3.1	1.1	.7
15	7.4	24	18.4	3.1	1.1	.7
16	8.0	25	17.7	2.6	1.1	.7
17	7.4	31	16.4	2.5	1.1	.7
18	7.7	35	17.7	2.3	1.0	.7
19	8.5	75	16.4	2.2	1.0	.7
20	7.4	15.8	15.8	2.0	1.1	.7
21	17.7	13.0	14.6	2.0	1.1	.7
22	28	9.2	13.5	2.0	1.0	.7
23	34	7.7	12.4	1.9	1.0	.7
24	30	7.4	11.0	1.9	1.0	.7
25	35	7.0	8.0	1.8	1.0	.7
26	36	5.6	8.0	1.8	1.0	.7
27	60	5.6	7.7	1.8	1.0	.7
28	51	5.2	7.0	1.8	1.0	.7
29	40	4.8	6.7	1.6	1.0	.8
30	36	4.5	6.4	1.6	1.0	.8
31		4.3		1.5	1.0	
Mean	19.4	20.4	15.6	3.0	1.1	0.8
Runoff in Ac. Ft.	1155	1258	928	187	70	47

Total for period - 3640 acre-feet.

TABLE 8

DAILY DISCHARGE OF NORTH AND SOUTH DEEP CREEKS ABOVE DIVERSIONS
April 1 to September 30, 1953

In Cubic Feet Per Second

Day	April	May	June	July	August	September
1	17.8	57	18.0	8.4	1.9	1.3
2	18.9	49	20	8.1	1.9	1.3
3	20	46	22	7.7	1.8	1.3
4	23	46	22	7.3	1.8	1.2
5	27	46	21	7.0	1.8	1.2
6	25	45	28	6.4	1.9	1.2
7	23	45	66	6.1	1.8	1.1
8	19.7	44	65	5.9	1.8	1.0
9	18.4	39	55	5.7	1.7	1.0
10	16.7	36	42	5.4	1.7	1.0
11	14.9	32	40	5.0	1.6	1.0
12	13.8	31	36	4.7	1.6	1.0
13	13.3	33	31	4.6	1.5	1.0
14	13.2	36	30	4.4	1.5	1.0
15	13.0	40	29	4.3	1.5	0.9
16	13.3	41	29	3.7	1.5	.9
17	12.8	52	26	3.6	1.5	.9
18	12.9	65	27	3.3	1.4	.9
19	13.9	115	25	3.1	1.4	.9
20	13.0	42	25	2.8	1.5	.9
21	25	35	23	2.8	1.5	.9
22	40	31	21	2.8	1.4	.9
23	53	28	18.0	2.7	1.4	.9
24	45	24	15.2	2.7	1.4	.9
25	51	23	11.2	2.5	1.4	.9
26	53	21	11.2	2.5	1.4	.9
27	112	22	10.9	2.5	1.4	.9
28	87	19.4	10.1	2.5	1.3	.9
29	63	18.5	9.8	2.2	1.3	1.0
30	59	18.2	9.4	2.2	1.3	1.0
31		17.3		2.1	1.3	
Mean	31.1	38.6	26.6	4.4	1.6	1.0
Runoff in Ac. Ft.	1849	2375	1580	267	96	62

Total for period = 6230 acre-feet.

TABLE 9

DAILY DISCHARGE OF OWL CREEK BELOW ALLEN-ARMECHE DITCH
April 16 to September 30, 1953

In Cubic Feet Per Second

Day	April	May	June	July	August	September
1		14.3	N	38	12.7	3.0
2		13.1		36	12.2	2.7
3		13.1	O	38	11.8	2.4
4		14.3		38	11.2	2.2
5		15.7	R	38	11.2	2.2
6		17.6		40	11.2	2.2
7		17.0	E	40	10.2	1.9
8	No Record	15.2		42	9.8	1.9
9		14.3	C	38	9.4	1.9
10		12.8		38	9.0	1.9
11		12.0	O	34	8.1	1.6
12		12.4		31	7.4	1.6
13		13.2	R	28	7.0	1.6
14		14.3		26	6.7	1.3
15		14.3	D	24	6.7	1.3
16	7.4	15.7		19.6	6.3	1.0
17	7.1	16.0	8.2 ?	18.8	5.9	1.0
18	6.6	17.0	6.4 ?	18.1	5.5	1.0
19	7.6	67	21	16.8	5.5	1.0
20	8.5	74	30	16.8	5.5	0.8
21	12.0	N	33	16.3	5.2	.8
22	13.9	O	42	16.0	4.9	.8
23	52		56	15.5	4.6	.8
24	39	R	69	15.0	4.6	1.0
25	31	F	56	14.3	4.2	0.8
26	41	U	47	14.3	3.9	.8
27	85	O	45	13.2	3.9	.8
28	26	R	45	12.2	3.6	1.0
29	17.0	D	42	11.8	3.3	1.0
30	16.6		38	13.2	3.3	1.0
31				13.2	3.0	
Mean	24.7	20.2	38.5	25.0	7.0	1.4
Runoff in Ac. Ft.	735	800	1068	1536	431	86

Total for period - 2840 acre-feet.

TABLE 10

DAILY DISCHARGE OF RADER CREEK AT COCKRELL DIVERSION
April 1 to September 30, 1953

In Cubic Feet Per Second

Day	April	May	June	July	August	September
1	9.9	30	19.2	31	4.0	1.4
2	10.4	27	21	28	4.0	1.4
3	10.4	25	21	30	4.0	1.4
4	12.0	27	22	28	4.0	1.3
5	15.5	31	23	28	3.9	1.2
6	16.2	34	30	27	3.6	1.2
7	13.7	36	41	25	3.4	1.2
8	11.5	34	36	23	2.8	1.2
9	10.4	31	30	20	2.8	1.2
10	9.5	26	28	17.8	2.8	1.1
11	8.6	26	31	15.5	2.8	1.1
12	8.2	25	32	14.3	2.8	1.1
13	7.9	25	28	12.5	2.8	1.1
14	7.6	30	32	12.0	2.6	1.1
15	7.3	27	35	11.0	2.3	1.1
16	7.9	28	36	9.9	2.3	1.1
17	7.6	31	37	8.3	2.3	1.0
18	7.9	41	39	8.2	2.2	1.0
19	8.2	35	44	8.2	2.1	1.0
20	9.0	31	59	7.8	1.9	1.0
21	15.5	24	57	7.6	2.1	1.0
22	22	23	55	7.6	1.9	1.0
23	32	19.2	48	7.2	1.9	1.0
24	32	16.9	52	6.9	1.9	1.1
25	39	14.9	48	6.4	1.7	1.1
26	42	14.3	45	5.9	1.7	1.1
27	45	14.3	37	5.4	1.6	1.1
28	44	14.9	39	4.9	1.5	1.1
29	37	16.9	37	4.5	1.5	1.2
30	32	16.9	36	4.3	1.4	1.2
31		17.8		4.0	1.4	
Mean	18.0	25.6	36.6	13.9	2.5	1.1
Runoff in Ac. Ft.	1071	1573	2178	853	155	70

Total for period = 5900 acre-feet.

TABLE 11

DAILY DISCHARGE OF EAGLE CREEK BELOW GILL DITCH
April 1 to September 30, 1953

In Cubic Feet Per Second

Day	April	May	June	July	August	September
1	3.8	8.7	18.2	35	11.1	3.8
2	3.8	8.7	18.2	36	10.7	3.6
3	4.0	9.0	17.6	38	9.7	3.4
4	4.8	11.1	20	49	9.0	3.6
5	5.4	13.4	22	51	8.7	3.3
6	5.0	16.8	30	49	7.9	3.1
7	4.0	15.0	32	53	7.7	3.1
8	3.4	12.9	30	56	7.7	2.9
9	2.9	11.6	27	54	7.4	2.9
10	2.7	9.6	24	58	7.1	2.9
11	2.5	9.6	28	56	6.9	2.8
12	2.2	10.0	28	55	6.4	2.8
13	2.0	11.1	27	52	6.1	2.7
14	2.0	11.6	28	51	6.1	2.7
15	2.0	12.0	31	50	6.4	2.5
16	2.1	13.9	32	49	6.4	2.4
17	2.1	18.2	35	45	6.4	2.4
18	1.8	29	36	42	6.4	2.4
19	2.2	44	36	37	6.1	2.4
20	3.3	34	36	34	5.9	2.2
21	6.1	34	36	31	5.2	2.2
22	11.6	30	36	27	4.8	2.2
23	18.2	28	34	24	4.6	2.4
24	15.7	25	37	22	4.6	2.4
25	17.6	25	37	21	4.4	2.4
26	21	25	41	21	4.4	2.4
27	22	25	41	20	4.2	2.4
28	15.0	21	38	18.9	4.0	2.4
29	11.6	15.7	38	16.2	4.2	2.5
30	10.0	14.5	37	15.0	4.2	2.5
31		16.8		12.4	4.0	
Mean	7.0	18.4	31.0	38.0	6.4	2.7
Runoff in Ac..Ft.	418	1131	1847	2338	394	167

Total for period - 6300 acre-feet.

TABLE 12

DAILY DISCHARGE OF EMERSON CREEK ABOVE DIVERSIONS
April 1 to September 30, 1953

In Cubic Feet Per Second

Day	April	May	June	July	August	September
1	7.5	11.8	18.4	17.8	5.9	4.3
2	7.8	13.9	17.8	17.3	5.9	4.0
3	7.8	13.5	17.8	16.8	5.9	3.8
4	8.1	13.5	18.4	16.8	5.9	3.8
5	8.5	13.9	18.9	16.3	5.7	3.8
6	7.8	13.1	26	15.3	5.4	3.8
7	7.8	13.1	28	14.9	5.4	3.5
8	8.1	13.1	28	13.9	5.1	3.5
9	7.8	12.6	25	13.9	4.6	3.5
10	7.5	12.2	25	13.5	4.6	3.5
11	7.2	11.8	25	13.1	4.6	3.0
12	6.9	11.8	25	13.1	4.3	3.0
13	6.6	12.2	25	12.6	4.6	3.0
14	6.6	12.2	25	11.8	4.8	2.7
15	6.6	13.1	25	11.8	4.8	2.7
16	6.6	14.4	26	11.4	4.6	2.7
17	6.6	14.9	26	10.6	4.6	2.7
18	6.9	16.8	27	9.9	4.6	3.0
19	6.9	32	31	9.2	4.6	3.0
20	8.1	35	32	9.2	4.6	3.0
21	10.2	31	31	8.9	4.3	2.7
22	13.5	27	29	8.5	4.0	2.7
23	16.3	25	29	8.2	3.8	2.7
24	16.3	23	28	7.8	3.8	2.7
25	16.3	20	26	7.8	3.5	3.0
26	16.3	19.5	23	7.5	3.5	3.0
27	17.4	18.9	23	7.2	3.8	3.0
28	14.4	17.8	21	6.9	4.0	3.0
29	12.6	17.8	18.9	6.6	4.8	3.0
30	12.2	18.4	18.4	6.6	4.8	3.2
31		18.9		6.2	4.8	
Mean	9.8	17.5	24.6	11.3	4.6	3.2
Runoff in Ac. Ft.	582	1075	1463	697	289	195

Total for period - 4300 acre-feet.

TABLE 13

PERCENTAGE OF ALLOTMENTS DELIVERED FROM SOLDIER CREEK

MARCH 19 TO SEPTEMBER 30, 1953

Period	Group Entitled to Water	Percentage of Allotments Delivered								Average Delivery to Surplus Rights c.f.s.
		First Priority	Second Priority	Third Priority	Fourth Priority	Fifth Priority	Sixth Priority	Seventh Priority	Eighth Priority	
March 19-April 1	Lower	40	10	0	0	40	0	0	-	0
April 1-April 11	Upper	60	10	0	30	30	0	0	0	0
April 11-April 24	Lower	60	100	45	0	68	0	15	-	0
April 24-May 4	Upper	60	20	0	55	30	0	35	85	2.00
May 4-May 17	Lower	60	25	5	45	75	15	50	-	3.00
May 17-May 27	Upper	60	60	25	55	100	15	0	30	3.00
May 27-June 9	Lower	70	73	50	50	95	5	0	-	3.50
June 9-June 19	Upper	78	50	5	70	88	0	35	18	0.50
June 19-July 1	Both	80	75	0	88	80	0	15	0	.0
July	Both	85	70	0	45	13	0	0	15	.0
August	Both	80	40	0	0	0	0	0	0	.0
September	Both	80	10	0	0	0	0	0	0	.0