STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF WATER RESOURCES

EARL WARREN, Governor

C. H. PURCELL, Director of Public Works

A. D. EDMONSTON, State Engineer

REPORT ON WATERMASTER SERVICE

IN

SURPRISE VALLEY WATERMASTER SERVICE AREA

Modoc County, California

1950 SEASON

Sacramento, California

March, 1951

SUBMISSION TO, AND ADOPTION BY
DEPARTMENT OF PUBLIC WORKS

I, L. C. Jopson, Supervising Hydraulic Engineer, Division of Water Resources, Department of Public Works of the State of California, hereby submit the within contained report entitled "Report on Watermaster Service in Surprise Valley Watermaster Service Area, Modoc County, California, 1950 Season".

/s/ L. C. JOPSON
Supervising Hydraulic Engineer

I, Gordon Zander, Principal Hydraulic Engineer, Division of Water Resources, Department of Public Works of the State of California, hereby approve the within contained report entitled "Report on Watermaster Service in Surprise Valley Watermaster Service Area, Modoc County, California, 1950 Season".

/s/ GRODON ZANDER
Principal Hydraulic Engineer

I, A. D. Edmonston, State Engineer and Chief of the Division of Water Resources, Department of Public Works of the State of California, hereby approve and adopt the within contained report entitled "Report on Watermaster Service in Surprise Valley Watermaster Service Area, Modoc County, California, 1950 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 10th day of August, 1951

DEPARTMENT OF PUBLIC WORKS

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

SEAL

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This report was prepared under the direction of

L. C. JOPSON
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INTRODUCTION

The Surprise Valley Watermaster Service Area as created January 10, 1939, and as supplemented and revised December 31, 1941, includes the water rights on Mill Creek, Soldier Creek, Pine Creek, Cedar Creek, Deep Creek, Owl Creek, Rader Creek, Eagle Creek, and Emerson Creek in Surprise Valley. The rights on these streams have been determined by court decrees as set forth in "Report on Watermaster Service in Surprise Valley Watermaster Service Area, Modoc County, California, 1947 Season".

Watermaster service was begun on March 19 and terminated on September 30, in accordance with Part 4 of Division 2 of the Water Code of California. Distribution of water during the 1950 irrigation season was administered by W. G. Brigance, Deputy Watermaster, under the supervision of P. E. Stephenson, Senior Hydraulic Engineer.

WATER SUPPLY

Precipitation

Monthly and seasonal precipitation at the U. S. Weather Bureau Station at Cedarville, California is shown in Table 1. The total seasonal precipitation for the 1949-50 season was 101 per cent of normal.

Table 2 is a tabulation of the results of precipitation during the winter months as determined by water content of the existing snow on April 1. These data, compiled from records of the California Cooperative Snow Surveys show the snow fall to be approximately 87 per cent of the computed 60-year normal.

Stream Flow

Stream flow measuring stations, equipped with automatic water stage recorders, were maintained on the various streams within the service area as follows:

Mill Creek above diversions - rated section.

Soldier Creek above diversions - rated section.

Pine Creek above North and South Channels - two 3-foot Parshall Flumes.

Cedar Creek above diversions - rated section.

North Deep Creek above diversions - rated section.

South Deep Creek below Espil Ditch - rated section.

Owl Creek below Allen-Arreche Ditch - rated section.

Rader Creek above Parshall Flume division structure - four Parshall Flumes.

Eagle Creek one-half mile below mouth of canyon - rated section.

Emerson Creek above diversions - rated section.

The records of daily discharge for these stations, with the exception of the Pine Creek station, are presented in Tables 3, 4, 6, 7, 8, 10, 11, 13, and 15. Table 5 is a record of the flow at the Pine Creek station plus diversions made above the station. Daily records of the total water available for diversion from Deep Creek are given in Table 9, which is the sum of Tables 7 and 8 plus the diversion of the Espil Ditch. Total daily discharge of Rader Creek above diversions is given in Table 12. Table 14 is a tabulation of the daily discharges of Eagle Creek above all diversions.

DISTRIBUTION OF WATER

Distribution on the various streams within the service area was in accordance with the allotments and priorities set forth in the respective decrees determining the rights thereon. The flows available for distribution from each stream were determined from the measured discharge at the respective measuring stations.

Mill Creek

From the beginning of the season until June 1, there was ample water to fill all requirements with no serious deficiency in supply until after July 1. After about July 20 the flow remained about constant with water for only first and second priority rights. The percentage of allotments delivered is presented in the following tabulation:

MILL CREEK

Priority	Percentage of Allotments Delivered					
	April	May	June	July	August	Sept.
1st	100	100	100	100	100	100
2nd	100	100	100	100	98	100
3rd	77	98	73	13	1	0
4th	33	68	3	0	0	0

Soldier Creek

The available water from Soldier Creek prior to April 1 was mainly diverted under first, second and third priority rights. From then until about May 24 the flow fluctuated from day to day between an excess on

occasions to only enough for first, second, third, and a portion of fourth priority rights. Thereafter the stream flow decreased steadily until July 20 after which only first priority rights could be satisfied. The percentage of allotments delivered is presented in Table 16.

Pine Creek

There was sufficient water in Pine Creek on March 20 to start the rotation provided for in the decree. From that date until May 24 one complete rotation and the major portion of a second rotation were delivered. After May 24 Edgar Harris and Robert McCulley received all available water until June 1 by which time the flow had dropped to 1.4 c.f.s. Thereafter until July 1, W. E. Hill and Daniel Hill diverted the entire flow which only reached them intermittently due to ditch losses. W. S. Ausman received the entire flow after July 1.

Cedar Creek

Prior to April 19, only first priority and a portion of second priority rights could be delivered. For the remainder of April there was an excess of water. Thereafter the flow gradually decreased except for a short period in May when water was again available for all rights. After June 15 only the first priority right received water.

The Thoms Creek Ditch was opened April 16 and diverted varying amounts until the middle of July. Rediversion of the water from Thoms Creek was made in accordance with the ditch ownership.

The percentage of allotments of Cedar Creek water delivered to the various priorities is presented in the following tabulation:

CEDAR CREEK

Priority	Percentage of Allotments Delivered					
	April	May	June	July	Aug.	Sept.
1st	100	100	86	26	9	5
2nd	64	64	4	0	0	0
3rd	33	9	0	0	0	0
4th	30	3	0	0	0	0

Deep Creek

During April and May only limited use of water was made for irrigation of alfalfa and grain under first priority rights and extra water was available for later priorities. At times during April the stream flow was in excess of the irrigation requirements.

Subsequent to the first of June the entire discharge of Deep Creek was diverted by the upper ditches, with rotation becoming necessary on the Company Ditch after July 1. The percentage of allotments delivered is presented in the following tabulation:

DEEP CREEK

Priority	Percentage of Allotments Delivered					
	April	May	June	July	Aug.	Sept.
1st	70	70	44	18	12	12
2nd	94	44	0	0	0	0
3rd	57	13	0	0	0	0
4th	33	2	0	0	0	0
5th	28	0	0	0	0	0

Owl Creek

The flow of Owl Creek decreased from sufficient water for the first two irrigation allotments on April 1 to a period in the middle of April at which time there was only stockwater available. From then until the last of May the flow increased to such an extent an excess of water was available. After the first of June a steady decrease occurred until during the latter part of July there was no water for general irrigation. Only the first priority right received a continuous flow for the remainder of the season. The percentage of allotments delivered is presented in the following tabulation:

OWL CREEK

Priority	Percentage of Allotments Delivered					
	April	May	June	July	August	September
1st	100	100	100	100	100	85
2nd	100	100	100	100	81	40
3rd	100	100	100	100	46	9
4th	100	100	100	100	35	1
5th	100	100	100	100	31	0
6th	100	100	100	100	26	0
7th	100	100	100	100	19	0
8th	90	100	100	71	1	0
9th	57	94	100	46	0	0
10th	51	84	100	38	0	0
11th	44	75	100	31	0	0
12th	32	68	100	23	0	0
13th	14	65	100	17	0	0
14th	7	65	88	13	0	0
15th	2	65	61	6	0	0
16th	0	61	50	3	0	0
17th	0	61	47	0	0	0
18th	0	61	47	0	0	0
19th	0	56	37	0	0	0
20th	0	48	27	0	0	0
21st	0	48	27	0	0	0

Rader Creek

During the first five weeks of the season the flow of Rader Creek was sufficient to fill the first, second, and a portion of the third and fourth priority rights. On May 10 the flow began to increase, rising to a peak by the middle of the month at which time there was a surplus of water. The flow then decreased until on August 16 there was just enough water to supply stock-water rights.

The McCulley-Hudspeth Ditch was opened May 20 and used continuously until July 21 after which time it remained closed for the remainder of the season. The percentage of allotments delivered is presented in the following tabulation:

RADER CREEK

Priority	Percentage of Allotments Delivered					
	April	May	June	July	August	September
1st	100	100	100	100	88	50
2nd	100	100	100	100	55	0
3rd	67	86	92	44	5	0
4th	4	68	21	0	0	0
5th	0	68	11	0	0	0
6th	0	66	10	0	0	0
7th	0	23	1	0	0	0

Eagle Creek

Prior to May 12 water was available for first and second priorities and something less than 4.50 cubic feet per second of third priority class rights on Eagle Creek. Subsequent to that time the flow increased to more

than 4.50 cubic feet per second available for third priority rights and all third priority owners thereafter participated in the use of the water until July 23. Fourth priority users received water during all that time except for short intermittent periods. The flow decreased throughout July to such an extent that after the first of August there was only enough water to supply first priority users. The percentage of allotments delivered is presented in the following tabulation:

EAGLE CREEK

Priority	Percentage of Allotments Delivered					
	April	May	June	July	August	September
1st	100	100	100	100	84	63
2nd	74	81	100	68	2	0
3rd	13	61	95	25	0	0
4th	0	51	53	10	0	0

Emerson Creek

The flow of Emerson Creek was sufficient to fill only first and second priority rights prior to the middle of April. Except for about three days in April, fourth priority users did not receive water until May 14. Subsequent to that date all priorities received water until the first of June, at which time the flow began a steady decline. Third priority rights continued to divert for a few days. After the middle of August only first priority rights were served. The percentages of allotments delivered is presented in the following tabulation:

EMERSON CREEK

Priority	Percentage of Allotments Delivered					
	April	May	June	July	August	September
1st	100	100	100	100	100	98
2nd	70	94	81	26	8	4
3rd	18	62	14	0	0	0
4th	7	48	1	0	0	0

CONTROVERSIES

Rutherford Creek

The controversy over Marion Steward's use of the Hays-Wilson Ditch from Rutherford Creek is near settlement by compromise.

Soldier Creek

Dissatisfaction with the diversion structure at the split between the East and West Channels of Soldier Creek was expressed by J. V. Patch. No suitable alternate has been proposed.

E. Clarence Stopp filed an application to divert additional water from Soldier Creek and another application for water from the same source was filed by Earl Daniels. An investigation was made to determine the loss between Stopp's diversion and Toney's diversion, which is the next downstream diversion. This loss was found to be negligible.

RECOMMENDATIONS

The division structure between the Sweet and Hussa ranches from the Sharp and Messier Ditch out of South Deep Creek should be replaced.

Some type of diversion structure should be installed on the Company Ditch from Cedar Creek.

Existing diversions works for the lower end of Eagle Creek should be further improved.

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 1950", which have been included in the statement for the said watermaster service area for 1951, are listed in the following tabulation:

CHANGES IN OWNERSHIP OF LANDS AND WATER RIGHTS

Tract	Name of Water Right Owner Appearing in 1950 Statement	Name of Water Right Owner ~~to Appear~~ as changed in 1951 Statement	Amount of Water c.f.s.
1	Baty, David W.	Cockrell, Lewis F. and Cockrell, Ferne E.	6.25
9	Jacobs, Victor L.	Jacobs, Victor L. and Jacobs, Georgia	1.45
32, 34	Carter, Estate of Rufus S.	Carter, Oliver	0.28
41	Jones, Estate of Mary J.	Jones, Guy A.	0.08
42	Catlin, Estate of George	Jones, Guy A.	0.10
44	McDaniel, H. E.	McDaniel, Noy	0.13
45	Painter, Estate of W. S.	Painter, Thomas and Painter, W. A.	0.26
59	Seufferlein, E. K.	Baty, David W.	0.50
72	Blevins, Gale A. and Blevins, Alma E.	Blevins, Gale A.	0.10
82	Marsh, Delano E. and Marsh, Esther H.	Bunyard, Bobby G. and Bunyard, Mary J.	2.30
95	Parke, H. E. and Parke, Ruth A.	Parke, H. E. and Parke, Sally E.	0.80
96	Morrison, Daisy O. and Morrison, Estate of J. E.	Morrison, Daisy O.	2.08
98	Sweet, Alfred K.	Cross, Clifford and Cross, Genevieve	0.05
114, 115, 117	Davis, James H. and McKnight, W. B.	Davis, James H.; Davis, Eldred H.; McKnight, W. B.; and McKnight, Ida B.	4.84
134,135	Bare Ranch Cattle Company	Powers, Harold J.	3.35
136	Bare Ranch Cattle Company	Vaughn, Joseph F. and Vaughn, Margaret A.	5.00
160	Lewis, Blanche	Woodruff, Blanche	0.03
163	Bare Ranch Cattle Company	Haviland, Robert	3.15

TABLE 1

PRECIPITATION AT CEDARVILLE, CALIFORNIA

Elevation 4,675 Feet

Month	Long Time Mean Precipitation Inches	Precipitation 1949-1950 Inches	Per Cent of Mean
October	1.03	1.01	98
November	1.50	0.99	66
December	1.52	1.02	67
January	1.77	2.80	158
February	1.58	0.60	38
March	1.44	2.36	164
April	0.97	0.28	29
May	0.99	1.45	146
June	0.71	1.36	192
July	0.25	0.00	0
August	0.16	0.24	150
September	0.50	0.47	94
Total	12.42	12.58	101

Data compiled from records of U. S. Weather Bureau.

TABLE 2

SNOW SURVEY DATA - UPPER PIT RIVER AREA

April 1st Measurement

Year	Water Content of Snow - Inches			
	Eagle Peak Elev. 7,500	Blue Lake Ranch Elev. 7,300	Cedar Pass Elev. 7,200	Adin Mountain Elev. 6,500
1941	13.8	8.4	17.9	11.3
1942	14.7	11.7	19.3	13.9
1943	23.7	15.3	25.8	13.2
1944	13.5	8.5	12.3	9.4
1945	22.2	15.8	22.4	15.8
1946	21.2	16.2	22.9	16.2
1947	6.4	5.3	10.3	4.4
1948	14.4	10.1	15.7	9.9
1949	19.1	16.7	22.0	16.9
1950	17.9	11.3	19.1	8.9
Computed 60-year Normal	18.7	11.6	20.6	14.3
Per cent of Normal	96	97	93	62

TABLE 3

Daily Discharge in Cubic Feet Per Second
MILL CREEK ABOVE DIVERSIONS
April 1 to September 30, 1950

Day	April	May	June	July	August	September
1	16.8	23	27	12.8	3.8	3.5
2	27	23	21	11.8	3.9	3.5
3	19.3	19.3	20	10.8	3.9	3.5
4	17.9	16.8	17.9	9.8	4.2	3.5
5	16.3	16.0	17.3	9.8	4.1	3.5
6	17.3	15.2	17.9	9.8	3.8	3.5
7	15.2	14.5	16.3	8.8	3.8	3.5
8	13.8	13.8	15.2	7.8	3.7	3.6
9	13.2	15.6	13.8	7.3	3.7	3.6
10	12.7	19.3	13.0	6.9	3.7	3.5
11	12.7	39	14.8	6.5	3.7	3.5
12	13.6	63	24	6.2	3.6	3.5
13	15.2	80	23	5.7	3.6	3.6
14	13.8	103	23	5.5	3.6	3.6
15	14.8	123	23	5.4	3.6	3.6
16	17.3	123	23	5.2	3.5	3.6
17	21	135	22	5.0	3.5	3.6
18	23	123	22	5.0	3.5	3.6
19	21	110	21	4.9	3.5	3.6
20	47	115	20	4.3	3.5	3.6
21	91	123	19.5	4.1	3.5	3.6
22	87	131	19.0	4.0	3.5	3.6
23	63	138	18.5	3.9	3.4	3.6
24	47	106	19.5	3.8	3.4	3.5
25	43	91	18.5	3.8	3.4	3.5
26	39	75	15.9	3.8	3.4	3.5
27	47	67	14.9	3.8	3.4	3.5
28	27	55	14.4	3.8	3.4	3.5
29	21	43	13.9	3.8	3.4	3.5
30	23	39	13.4	3.8	3.4	3.5
31		31		3.8	3.4	
Total Sec. Ft. Days	856.9	2,089.5	562.7	191.7	111.8	106.3
Mean Sec. Ft.	28.6	67.4	18.8	6.18	3.61	3.54
Total Ac. Ft.	1,700	4,140	1,120	380	222	211

Total acre-feet for 183 day period - 7,770

TABLE 4

Daily Discharge in Cubic Feet Per Second
SOLDIER CREEK ABOVE DIVERSIONS
March 19 to September 30, 1950

Day	March	April	May	June	July	August	September
1		25	15.4	13.6	4.2	1.6	1.2
2		30	13.3	10.8	4.0	1.7	1.2
3	NO	16.3	12.2	8.3	4.0	1.6	1.2
4		14.9	11.6	6.8	3.7	2.2	1.2
5		13.0	11.6	5.9	3.8	1.9	1.2
6		11.4	10.7	6.3	3.8	1.4	1.2
7		9.0	10.0	8.3	3.6	1.4	1.2
8		7.0	9.6	7.7	3.3	1.4	1.2
9		5.6	12.2	7.2	3.3	1.4	1.2
10		5.5	17.1	7.7	3.3	1.4	1.2
11		8.4	21	9.5	3.1	1.4	1.2
12		10.2	22	15.8	2.9	1.4	1.1
13	RECORD	11.0	26	12.0	2.7	1.4	1.2
14		9.4	30	10.0	2.6	1.4	1.2
15		11.0	32	8.9	2.4	1.4	1.2
16		14.6	31	8.6	2.4	1.4	1.2
17		16.2	28	8.3	2.2	1.3	1.2
18		19.6	23	7.4	2.2	1.3	1.2
19	14.9	22	23	7.4	2.1	1.3	1.2
20	10.0	30	24	7.1	2.0	1.2	1.1
21	6.4	32	25	6.6	1.9	1.2	1.1
22	7.2	27	27	6.2	1.8	1.2	1.1
23	5.5	21	26	6.0	1.8	1.3	1.1
24	4.9	19.6	23	8.9	1.8	1.3	1.1
25	4.6	19.6	20	6.6	1.7	1.3	1.1
26	4.5	22	19.2	5.8	1.7	1.2	1.1
27	4.4	22	20	5.6	1.7	1.2	1.1
28	4.2	16.3	17.7	5.2	1.7	1.2	1.1
29	4.6	15.4	17.0	4.8	1.7	1.2	1.1
30	7.0	17.1	17.7	4.2	1.7	1.2	1.1
31	14.0		15.2		1.6	1.2	
Total Sec. Days	*92.2	502.1	611.5	237.5	80.7	43.0	34.8
	*7.09	16.7	19.7	7.92	2.60	1.39	1.16
	182	996	1,210	471	160	85	69

* 13 day period
Total acre-feet for 196 day period - 3,170.

TABLE 5

Daily Discharge in Cubic Feet Per Second
PINE CREEK ABOVE DIVERSIONS
March 20 to September 30, 1950

Day	March	April	May	June	July	August	September
1		18.2	6.4	1.4	.50	0.07	0.05
2		19.6	5.5	1.2	.47	.07	.05
3		19.1	4.5	1.1	.43	.07	.05
4	NO	14.9	4.1	.88	.40	.10	.05
5		11.2	4.7	.70	.43	.09	.05
6		10.6	4.5	.76	.43	.06	.04
7		8.5	4.2	1.1	.37	.06	.04
8		7.0	4.5	.97	.28	.06	.04
9		5.7	6.6	.89	.28	.06	.04
10		5.2	7.7	.97	.28	.06	.04
11		6.4	8.1	1.2	.21	.06	.04
12		8.1	8.7	2.2	.15	.06	.05
13	RECORD	8.1	8.7	1.6	.14	.06	.05
14		8.1	9.7	1.4	.13	.06	.05
15		10.8	8.1	1.2	.11	.06	.05
16		14.5	7.2	1.2	.11	.06	.05
17		15.8	6.4	1.2	.10	.06	.06
18		14.0	5.3	1.1	.10	.06	.06
19		15.5	5.2	1.1	.10	.06	.06
20	5.0	19.5	5.7	1.0	.10	.06	.06
21	5.9	16.8	5.5	.90	.09	.06	.06
22	7.5	13.1	5.9	.82	.09	.06	.06
23	6.2	9.3	4.7	.78	.09	.05	.06
24	5.5	8.3	3.5	1.4	.09	.05	.06
25	5.0	9.7	3.2	.90	.08	.05	.06
26	4.5	11.2	2.9	.74	.08	.05	.06
27	4.2	11.7	2.8	.70	.08	.05	.06
28	4.1	7.9	2.5	.64	.08	.05	.06
29	4.5	7.2	2.2	.59	.08	.05	.06
30	8.3	7.5	1.8	.50	.08	.05	.06
31	15.9		1.6		.07	.05	
Total Sec. Ft. Days	*76.6	343.5	162.4	31.14	6.03	1.87	1.58
Mean Sec. Ft.	* 6.38	11.4	5.24	1.04	0.19	0.06	0.05
Total Ac. Ft.	*152	681	322	61	12	3	3

* 12 day period
Total acre-feet for 195 day period - 1,240.

TABLE 6

Daily Discharge in Cubic Feet Per Second
CEDAR CREEK ABOVE DIVERSIONS
April 1 to September 30, 1950

Day	April	May	June	July	August	September
1	12.0	19.2	8.2	2.6	0.54	0.18
2	21	15.4	7.2	2.4	.47	.16
3	14.0	13.8	6.2	2.4	.45	.14
4	11.7	14.8	5.5	2.3	.70	.14
5	10.6	16.4	5.1	2.2	1.7	.12
6	11.0	14.8	5.5	2.0	.80	.12
7	9.2	13.6	5.6	1.8	.72	.14
8	8.0	13.1	5.1	1.7	.64	.16
9	6.9	11.0	4.4	1.5	.58	.18
10	6.2	14.0	4.0	1.8	.52	.20
11	6.7	17.3	4.7	1.6	.47	.22
12	8.2	17.8	10.4	1.4	.44	.24
13	9.2	21	8.7	1.3	.40	.30
14	10.0	25	6.2	1.2	.36	.30
15	12.6	23	5.2	1.2	.34	.30
16	14.0	23	5.0	1.2	.32	.30
17	15.1	19.9	4.8	1.1	.32	.30
18	15.1	15.7	4.3	1.1	.32	.30
19	25	14.3	3.9	1.1	.32	.30
20	37	14.3	3.8	1.0	.32	.32
21	46	14.6	3.4	.95	.32	.32
22	38	13.6	3.2	.88	.32	.32
23	30	12.2	3.1	.82	.32	.32
24	28	11.9	5.0	.76	.32	.32
25	25	11.9	4.3	.68	.30	.32
26	25	11.1	3.6	.62	.28	.32
27	29	11.3	3.3	.58	.26	.32
28	22	10.8	3.1	.55	.24	.32
29	21	10.2	3.0	.62	.22	.32
30	19.2	10.2	2.8	.60	.20	.32
31		9.2		.58	.18	
Total Sec. Ft. Days	546.7	464.4	148.6	40.54	13.69	7.62
Mean Sec. Ft.	18.2	15.0	4.95	1.31	0.44	0.25
Total Ac. Ft.	1,080	921	295	80.4	27	15

Total acre-feet for 183 day period - 2,420

TABLE 7

Daily Discharge in Cubic Feet Per Second
NORTH DEEP CREEK ABOVE DIVERSIONS
April 1 to September 30, 1950

Day	April	May	June	July	August	September
1	19.6	9.7	2.4	1.5	0.78	0.71
2	21	7.8	2.3	1.4	.82	.71
3	17.0	6.0	2.3	1.4	.78	.71
4	16.1	5.0	2.3	1.3	.89	.71
5	16.1	3.5	2.3	1.3	.94	.71
6	15.3	3.1	2.3	1.3	.82	.71
7	13.5	2.6	2.3	1.2	.78	.71
8	11.6	2.6	2.3	1.2	.74	.82
9	9.7	2.6	2.1	1.2	.74	.78
10	8.7	2.8	2.0	1.2	.82	.74
11	7.8	4.0	2.1	1.2	.82	.74
12	8.7	5.0	2.3	1.2	.78	.74
13	9.7	8.7	2.1	1.1	.78	.74
14	9.7	11.6	2.0	1.1	.78	.74
15	8.7	10.7	1.9	1.1	.78	.74
16	10.7	10.7	1.8	1.1	.74	.74
17	11.6	9.7	1.7	1.0	.71	.74
18	11.6	9.7	1.7	1.0	.71	.74
19	11.6	8.7	1.6	.98	.68	.74
20	15.3	8.7	1.6	1.0	.68	.74
21	18.9	8.7	1.6	1.0	.68	.74
22	15.3	7.8	1.6	.98	.71	.74
23	13.5	7.8	1.6	.94	.71	.78
24	12.6	6.9	1.7	.94	.74	.78
25	11.6	6.9	1.6	.94	.74	.78
26	12.6	6.0	1.6	.89	.71	.78
27	12.6	4.0	1.5	.94	.71	.78
28	11.6	3.5	1.5	.94	.71	.78
29	10.7	3.1	1.5	.89	.71	.78
30	9.7	3.1	1.5	.82	.71	.78
31		2.8		.78	.71	
Total Sec. Ft. Days	383.1	193.8	57.1	33.84	23.41	22.43
Mean Sec. Ft.	12.8	6.25	1.90	1.09	0.76	0.75
Total Ac. Ft	760	384	113	67	46	44

Total acre-feet for 183 day period - 1,420.

TABLE 8

Daily Discharge in Cubic Feet Per Second
SOUTH DEEP CREEK BELOW ESPIL DITCH
April 1 to September 30, 1950

Day	April	May	June	July	August	September
1	21	10.8	6.5	2.5	1.0	0.72
2	31	9.4	5.9	2.3	1.0	.72
3	19.0	8.3	5.7	2.2	1.1	.72
4	17.5	7.9	5.3	2.1	1.2	.76
5	14.2	7.5	5.1	2.1	1.4	.80
6	11.6	7.5	5.3	2.0	1.1	.80
7	10.8	7.5	5.5	1.9	1.0	.80
8	8.9	7.9	5.3	1.8	1.0	1.0
9	7.5	7.9	4.7	1.8	1.0	.90
10	7.2	8.9	4.4	1.8	1.0	.90
11	7.2	10.8	4.7	1.7	1.0	.90
12	7.9	11.6	5.7	1.7	1.0	.90
13	8.9	12.7	5.1	1.6	1.0	.95
14	8.9	15.8	4.4	1.5	1.0	.95
15	8.9	14.2	4.4	1.4	1.0	.95
16	11.6	14.2	4.2	1.4	.95	.95
17	14.2	14.2	3.9	1.3	.90	1.0
18	14.2	12.7	3.7	1.3	.85	1.0
19	12.7	12.7	3.6	1.2	.85	1.0
20	19.0	11.6	3.4	1.4	.85	1.0
21	26	11.6	3.3	1.3	.80	1.0
22	21	10.8	3.2	1.2	.80	.95
23	14.2	10.8	3.3	1.2	.85	.95
24	11.6	10.1	3.9	1.2	.95	.95
25	10.1	10.1	3.6	1.1	.95	.95
26	11.6	9.4	3.3	1.1	.85	.95
27	12.7	8.3	3.2	1.0	.85	.95
28	12.7	7.5	3.0	1.0	.80	.95
29	11.6	7.5	2.7	1.0	.80	.95
30	10.8	7.2	2.6	1.0	.72	.95
31		6.8	[illegible]	1.0	.72	
Total Sec. Ft. Days	404.5	314.2	128.9	47.1	29.29	27.27
Mean Sec. Ft.	13.5	10.1	4.30	1.52	0.94	0.91
Total Ac. Ft.	802	623	256	93	58	54

Total acre-feet for 183 day period - 1,890.

TABLE 9

Daily Discharge in Cubic Feet Per Second
NORTH DEEP AND SOUTH DEEP CREEKS ABOVE DIVERSIONS
April 1 to September 30, 1950

Day	April	May	June	July	August	September
1	41	20	8.9	4.0	1.8	1.4
2	52	17.2	8.2	3.7	1.8	1.4
3	36	14.3	8.0	3.6	1.9	1.4
4	34	12.9	7.6	3.4	2.1	1.5
5	30	11.0	7.4	3.4	2.3	1.5
6	27	10.6	7.6	3.3	1.9	1.5
7	24	10.1	7.8	3.1	1.8	1.5
8	20	10.5	7.6	3.0	1.7	1.8
9	17.2	10.5	6.8	3.0	1.7	1.7
10	15.9	11.7	6.4	3.0	1.8	1.6
11	15.0	14.8	6.8	2.9	1.8	1.6
12	16.6	16.6	8.0	2.9	1.8	1.6
13	18.6	21	7.2	2.7	1.8	1.7
14	18.6	27	6.4	2.6	1.8	1.7
15	17.6	25	6.3	2.5	1.8	1.7
16	22	25	6.0	2.5	1.7	1.7
17	26	24	5.6	2.3	1.6	1.7
18	26	22	5.4	2.3	1.6	1.7
19	24	21	5.2	2.2	1.5	1.7
20	34	20	5.0	2.4	1.5	1.7
21	45	20	4.9	2.3	1.5	1.7
22	36	18.6	4.8	2.2	1.5	1.7
23	28	18.6	4.9	2.1	1.6	1.7
24	24	17.0	5.6	2.1	1.7	1.7
25	22	17.0	5.2	2.0	1.7	1.7
26	24	15.4	4.9	2.0	1.6	1.7
27	25	12.3	4.7	1.9	1.6	1.7
28	24	11.0	4.5	1.9	1.5	1.7
29	22	10.6	4.2	1.9	1.5	1.7
30	20	10.3	4.1	1.8	1.4	1.7
31		9.6		1.8	1.4	
Total Sec. Ft. Days	785.5	505.6	186.0	80.8	52.7	49.1
Mean Sec. Ft.	26.2	16.3	6.20	2.61	1.70	1.64
Total Ac. Ft.	1,560	1,000	369	160	105	97

Total acre-feet for 183 day period 3,290.

TABLE 10

Daily Discharge in Cubic Feet Per Second
OWL CREEK BELOW ALLEN-ARRECHE DITCH
April 1 to September 30, 1950

Day	April	May	June	July	August	September
1	10.9	16.9	57	28	3.6	0.72
2	16.9	15.0	53	27	3.4	.62
3	11.4	13.4	49	24	3.7	.62
4	8.1	12.4	47	23	4.2	.62
5	7.5	11.8	49	22	4.6	.62
6	8.9	10.0	47	19.5	3.7	.62
7	7.2	8.9	34	18.0	3.6	.82
8	6.4	8.1	29	16.2	3.2	1.9
9	5.4	8.5	23	14.5	3.0	1.2
10	5.0	11.8	21	13.9	2.6	.82
11	4.8	16.2	23	13.0	2.0	.82
12	5.8	27	26	11.4	1.9	.62
13	8.5	30	24	10.5	1.6	.72
14	7.2	35	23	9.2	1.3	.93
15	7.8	41	23	8.5	1.3	.72
16	9.6	41	24	8.1	1.2	1.2
17	11.4	43	25	7.5	1.0	1.3
18	13.4	40	26	6.9	.82	1.4
19	15.0	37	31	6.7	.72	1.0
20	22	35	37	6.4	.62	.82
21	26	45	42	6.3	.52	.52
22	23	53	38	5.8	.52	.32
23	18.8	58	32	5.4	1.0	.32
24	16.9	57	43	5.1	.93	.28
25	16.9	52	27	4.9	.93	.24
26	19.5	51	22	4.8	.93	.24
27	21	53	22	4.3	.93	.24
28	16.9	55	24	4.1	.82	.24
29	15.0	57	26	4.0	.82	.24
30	16.9	58	28	3.9	.82	.24
31		60		3.7	.72	
Total Sec. Ft. Days	384.1	1,061.0	975	346.6	57.00	20.97
Mean Sec. Ft.	12.8	34.2	32.5	11.2	1.84	0.70
Total Ac. Ft.	762	2,100	1,930	687	113	41

Total Acre-feet for 183 day period - 5,630

TABLE 11

Daily Discharge in Cubic Feet Per Second
RADER CREEK ABOVE PARSHALL FLUME DIVISION STRUCTURE
April 1 to September 30, 1950

Day	April	May	June	July	August	September
1	7.1	10.5	23	12.2	3.0	0.56
2	7.9	9.8	19.9	11.8	2.5	.50
3	7.9	9.0	17.8	11.2	2.7	.50
4	7.1	8.3	15.5	10.7	3.1	.50
5	7.1	7.8	15.8	10.2	3.5	.44
6	6.8	7.4	16.1	10.2	2.7	.44
7	6.2	7.1	14.8	9.7	2.5	.50
8	5.8	7.1	14.0	9.3	2.5	.82
9	5.2	7.1	13.4	9.3	2.2	.64
10	4.9	10.6	12.7	8.8	2.2	.56
11	4.6	17.6	13.1	8.8	2.2	.64
12	5.2	17.6	12.9	8.3	2.2	.50
13	6.4	19.1	12.5	7.8	2.0	.50
14	5.8	24	11.7	6.5	1.8	.50
15	5.8	26	11.7	6.1	1.8	.50
16	6.8	28	11.7	5.6	1.6	.50
17	7.5	35	11.9	5.6	1.3	.50
18	7.9	30	12.1	5.2	1.0	.50
19	9.0	27	12.1	4.7	.94	.50
20	11.6	23	12.5	4.7	.82	.44
21	13.1	20	13.6	4.7	.82	.44
22	12.7	19.2	13.6	4.7	.82	.44
23	11.6	24	13.8	4.4	.82	.44
24	10.8	25	13.6	4.4	.82	.44
25	10.8	23	12.7	4.4	.72	.44
26	11.2	21	12.1	4.0	.72	.44
27	11.9	22	11.9	3.7	.64	.44
28	11.2	24	11.6	3.7	.56	.44
29	10.5	22	10.7	3.7	.56	.44
30	10.5	27	11.8	3.4	.56	.44
31		27		3.4	.56	
Total Sec. Ft. Days	250.9	586.2	410.6	211.2	50.16	14.94
Mean Sec. Ft.	8.36	18.9	13.7	6.81	1.62	0.50
Total Ac. Ft.	498	1,160	814	419	99	29

Total acre-feet for 183 day period - 3,020.

TABLE 12

Daily Discharge in Cubic Feet per Second
RADER CREEK ABOVE DIVERSIONS
April 1 to September 30, 1950

Day	April	May	June	July	August	September
1.	8.6	12.0	30	16.2	4.5	1.7
2	9.4	11.3	26	15.7	4.0	1.6
3	9.4	10.5	23	15.0	4.2	1.6
4	8.6	9.8	20	14.3	4.6	1.6
5	8.6	9.3	21	13.7	5.0	1.5
6	8.3	8.9	21	13.7	4.2	1.5
7	7.7	8.6	19.6	13.1	4.0	1.6
8	7.3	8.6	18.6	12.6	4.0	2.0
9	6.7	8.6	17.8	12.6	3.7	1.8
10	6.4	12.2	16.9	12.0	3.7	1.7
11	6.1	19.9	17.4	12.0	3.7	1.8
12	6.7	19.9	17.1	11.4	3.7	1.6
13	7.9	22	16.6	10.8	3.5	1.6
14	7.3	27	15.6	9.3	3.3	1.6
15	7.3	29	15.6	8.9	3.3	1.6
16	8.3	31	15.6	8.3	3.1	1.6
17	9.0	39	15.9	8.3	2.8	1.6
18	9.4	34	16.1	7.8	2.5	1.6
19	10.5	30	16.1	7.2	2.1	1.6
20	13.3	28	16.6	7.2	2.0	1.5
21	14.9	26	18.0	6.2	2.0	1.5
22	14.5	25	18.0	6.2	2.0	1.5
23	13.3	31	18.3	5.9	2.0	1.5
24	12.4	33	18.0	5.9	2.0	1.5
25	12.4	30	16.9	5.9	1.9	1.5
26	12.8	28	16.1	5.5	1.9	1.5
27	13.6	29	15.9	5.2	1.8	1.5
28	12.8	31	15.5	5.2	1.7	1.5
29	12.0	29	14.3	5.2	1.7	1.5
30	12.0	35	15.7	4.9	1.7	1.5
31		35		4.9	1.7	
Total Sec. Ft. Days	297.5	711.6	543.2	292.1	92.3	47.7
Mean Sec. Ft.	9.92	23.0	18.1	9.42	2.98	1.59
Total Ac. Ft.	550	1,410	1,080	579	183	94

Total acre-feet for 183 day period - 3,900.

TABLE 13

Daily Discharge in Cubic Feet Per Second
EAGLE CREEK ONE-HALF MILE BELOW MOUTH OF CANYON
April 1 to September 30, 1950

Day	April	May	June	July	August	September
1	5.6	8.2	39	32	3.3	1.6
2	7.4	7.4	38	31	3.3	1.6
3	7.0	6.1	36	28	3.3	1.6
4	6.1	5.3	36	28	3.3	1.6
5	5.9	4.9	38	25	2.7	1.6
6	5.6	2.8	37	23	2.5	1.6
7	5.0	2.7	33	21	2.5	1.6
8	4.6	2.5	27	16.9	2.5	1.9
9	4.1	2.6	22	12.8	2.4	1.6
10	3.7	4.9	20	11.5	2.4	1.6
11	3.6	8.4	22	9.8	2.4	1.6
12	4.4	11.9	22	8.9	2.4	1.6
13	5.6	17.4	23	8.0	2.3	1.6
14	5.0	24	23	7.8	2.2	1.6
15	5.2	28	24	7.2	2.2	1.6
16	6.3	29	24	6.6	2.2	1.7
17	7.0	33	28	6.3	2.1	1.6
18	7.8	29	28	5.8	2.1	1.6
19	9.5	26	32	5.6	1.8	1.6
20	16.9	28	35	5.3	1.8	1.6
21	22	33	36	5.0	1.7	1.6
22	21	37	36	4.6	1.7	1.5
23	15.8	39	34	4.4	1.7	1.5
24	11.1	38	31	4.3	1.8	1.5
25	10.1	36	24	4.0	1.8	1.5
26	10.8	36	22	3.7	1.8	1.5
27	13.7	37	22	3.6	1.8	1.5
28	10.8	38	26	3.9	1.7	1.5
29	9.2	37	29	3.6	1.7	1.5
30	9.2	40	32	3.5	1.6	1.5
31		41		3.2	1.6	
Total Sec. Ft. Days-	260.0	694.1	879	343.3	68.9	47.5
Mean Sec. Ft.	8.67	22.4	29.3	11.1	2.22	1.58
Total Ac. Ft.	516	1,380	1,740	681	137	94

Total acre-feet for 183 day period - 4,550.

TABLE 14

Daily Discharge in Cubic Feet Per Second
EAGLE CREEK ABOVE DIVERSIONS
April 1 to September 30, 1950

Day	April	May	June	July	August	September
1	7.1	9.7	44	36	4.9	3.0
2	8.9	8.9	43	35	4.9	3.0
3	8.5	7.6	41	32	4.9	3.0
4	7.6	6.8	41	31	5.2	3.0
5	7.4	6.4	43	29	4.3	3.0
6	7.1	4.4	42	26	4.1	3.0
7	6.5	4.3	37	24	4.1	3.0
8	6.1	4.1	31	19.1	4.1	3.3
9	5.7	4.2	25	14.6	4.0	3.0
10	5.3	6.4	22	13.1	4.0	3.0
11	5.2	9.9	25	11.3	4.0	3.0
12	5.9	13.6	25	10.4	4.0	3.0
13	7.1	19.6	26	9.5	3.8	3.0
14	6.5	27	26	9.3	3.7	3.0
15	6.7	32	27	8.7	3.7	3.0
16	7.8	33	27	8.1	3.7	3.1
17	8.5	37	32	7.8	3.6	3.0
18	9.3	33	32	7.3	3.6	3.0
19	11.0	29	36	7.1	3.2	3.0
20	19.1	32	40	6.8	3.2	3.0
21	25	37	41	6.5	3.1	3.0
22	24	42	41	6.1	3.1	2.8
23	17.9	44	39	6.0	3.1	2.8
24	12.7	43	35	5.9	3.2	2.8
25	11.6	41	27	5.6	3.2	2.8
26	12.4	41	25	5.3	3.2	2.8
27	15.6	42	25	5.2	3.2	2.8
28	12.4	43	29	5.5	3.1	2.8
29	10.7	42	33	5.2	3.1	2.8
30	10.7	45	36	5.1	3.0	2.8
31		46		4.8	3.0	
Total Sec. Ft. Days	310.3	794.9	996	407.3	115.3	88.6
Mean Sec. Ft.	10.3	25.6	33.2	13.1	3.72	2.95
Total Ac. Ft.	615	1,580	1,980	808	229	176

Total acre-feet for 183 day period 5,388.

TABLE 15

Daily Discharge in Cubic Feet Per Second
EMERSON CREEK ABOVE DIVERSIONS
April 1 to September 30, 1950

Day	April	May	June	July	August	September
1	8.4	14.0	21	7.2	3.4	2.1
2	10.0	12.9	19.6	7.2	3.4	2.1
3	9.4	12.3	18.2	7.0	4.1	1.9
4	8.9	11.9	16.4	6.8	4.1	1.6
5	8.6	11.2	15.9	6.5	4.3	1.6
6	7.8	11.0	16.4	6.5	3.6	1.6
7	7.0	10.0	14.9	6.2	3.4	2.3
8	6.3	9.4	14.5	6.2	3.1	3.6
9	5.8	9.4	12.6	5.9	2.9	2.7
10	5.2	11.6	11.9	5.7	3.4	2.5
11	5.0	14.0	12.3	5.5	3.4	2.5
12	6.3	15.9	13.6	5.5	3.4	2.5
13	8.0	18.2	12.9	5.2	3.1	2.3
14	7.2	23	12.6	5.2	2.9	2.5
15	7.5	24	12.3	5.0	2.9	2.9
16	9.2	25	11.9	4.7	2.7	2.9
17	10.0	27	11.0	4.7	2.7	2.9
18	11.0	25	10.6	4.5	2.5	3.1
19	12.9	24	10.4	4.3	2.5	2.7
20	21	23	10.0	4.3	2.5	2.7
21	29	26	9.4	4.1	2.3	2.5
22	27	27	9.2	4.1	2.3	2.3
23	19.6	29	9.7	3.8	2.3	2.3
24	14.9	28	11.0	3.8	2.5	2.3
25	13.6	27	9.7	3.6	2.5	2.1
26	14.5	26	8.9	3.6	2.3	2.1
27	17.6	25	8.6	3.6	2.3	2.1
28	15.4	24	8.4	3.6	2.1	2.1
29	14.5	21	7.8	3.6	2.1	2.1
30	14.5	22	7.5	3.6	1.9	2.1
31		23		3.4	1.9	
Total Sec. Ft. Days	356.1	610.8	369.2	154.9	88.8	71.0
Mean Sec. Ft.	11.9	19.7	12.3	5.00	2.86	2.37
Total Ac. Ft.	706	1,210	732	307	176	141

Total acre-feet for 183 day period - 3,270.

TABLE 16

PERCENTAGE OF ALLOTMENTS DELIVERED FROM SOLDIER CREEK

March 19 to September 30, 1950

Period	Group Entitled to Water	Percentage of Allotment 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	100	89	37	19	4	0	0	—	0.0
April 1 - April 11	Upper	100	97	80	58	30	25	21	20	1.5
April 11 - April 24	Lower	100	100	100	78	51	50	40	—	2.5
April 24 - May 4	Upper	100	100	95	95	69	60	45	32	0.4
May 4 - May 17	Lower	100	100	100	83	51	50	50	—	3.2
May 17 - May 27	Upper	100	100	100	100	100	100	100	92	3.9
May 27 - June 9	Lower	100	100	86	51	26	20	0	—	0.0
June 9 - June 19	Upper	100	100	60	37	8	5	0	0	0.0
June 19 - July 1	Both	100	97	83	29	0	0	0	0	0.0
July	Both	97	24	0	0	0	0	0	0	0.0
August	Both	72	0	0	0	0	0	0	0	0.0
September	Both	61	0	0	0	0	0	0	0	0.0