TABLE OF CONTENTS

Page

LETTER OF TRANSMITTAL

ORGANIZATION

GENERAL DESCRIPTION OF WORK 1

DISCUSSION OF RESULTS FOR 1934 1

Precipitation 1

Water Supply 1

Distribution 5

Shasta River above Confluence of Boles Creek 7

Shasta River below Junction of Boles Creek and Boles Creek .. 8

Shasta River below Montague Water Conservation District Reservoir 8

Beaughan Creek 11

Carrick Creek 12

Parks Creek 14

Big Springs 15

Lower Shasta River 16

Little Shasta River 19

Measuring Devices Installed 20

TABLES

1 - Average Precipitation at Mount Shasta City and Montague--Monthly, seasonal and average amounts in inches - 1889 to 1934.. 21

2 - Monthly Precipitation for Seasonal year 1933-34 Compared with Mean Monthly Precipitation - 1889 to 1934 21

3 - Daily Discharge in Cubic Feet per Second Parks Creek Above Edson-Foulke Yreka Ditch 22

4 - Daily Discharge in Cubic Feet per Second Parks Creek Above Duke North Ditch 23

TABLE OF CONTENTS Cont'd

Page

TABLES

5 - Discharge in Cubic Feet Per Second Carrick Spring 24

6 - Discharge in Cubic Feet Per Second Big Springs 25

7 - Daily Discharge in Cubic Feet per Second Shasta River at Grenada Pump 26

8 - Daily Discharge in Cubic Feet per Second Shasta River Near Montague 27

9 - Daily Discharge in Cubic Feet per Second Little Shasta River Above Harp Ditch 28

10 - Discharge in Cubic Feet Per Second Cleland Springs 29

11 - Miscellaneous Discharge Measurements of Various Springs 30

12 - Measuring Devices on Ditches in Shasta River Water Master District 31

-oOo-

STATE OF CALIFORNIA

Department of Public Works

SACRAMENTO

DIVISION OF WATER RESOURCES
401 PUBLIC WORKS BUILDING

EDWARD HYATT, STATE ENGINEER
CHIEF OF DIVISION

March 31, 1936

Mr. Harold Conkling
Deputy State Engineer
Sacramento, California

ATTENTION: Mr. Gordon Zander,
Supervising Hydraulic Engineer

Dear Sir:

Herewith is submitted a report covering water master service within the Shasta River Water Master District, Siskiyou County, California, during the 1934 season.

The report presents a general description of the work and a discussion of the results obtained. Records of precipitation, run-off and other pertinent data are included.

Respectfully submitted,

Senior Hydraulic Engineer.

ORGANIZATION

Earl Lee Kelly, Director of Department of Public Works

Edward Hyatt, State Engineer.

Harold Conkling, Deputy State Engineer.

Gordon Zander, Supervising Hydraulic Engineer.

Harrison Smitherum, Senior Hydraulic Engineer.

REPORT ON

WATER MASTER SERVICE

ON

SHASTA RIVER AND TRIBUTARIES

SISKIYOU COUNTY, CALIFORNIA

DURING SEASON OF 1934

GENERAL DESCRIPTION OF WORK

The rights by appropriation to the use of the waters of Shasta River and its tributaries were established by the Judgment and Decree of the Superior Court of Siskiyou County in the Shasta River Proceeding No. 7035, entered on December 30, 1932. Following entry of the decree, the Shasta River Water Master District was created by order of the Division of Water Resources as provided for in Section 37 of the Water Commission Act.

The District lies wholly within Siskiyou County, California, and embraces the lands covered by "The Description of Lands Within the Shasta River Water Master District", a copy of which is on file and of record in the office of the County Recorder of Siskiyou County, in accordance with the provisions of Section 37f of the Water Commission Act. In general the District includes the lands to which the water rights defined by the Shasta River Judgment and Decree are appurtenant, excepting such lands as are watered from Inconstance Creek, Walker Slough, Stone Creek (a tributary of Parks Creeks), Mocks Gulch, Guys Gulch, Schulmeyer Gulch (sometimes known as Cottonwood Creek), White Slough and Yreka Creek and their tributaries and certain springs of Adele Emma Hebbring, Annie Kegg, J. M. Kiernan, Frank J. King and Emma E. Ellison, located respectively, in the SW 1/4 SE 1/4, Sec. 3, T 42 N., R 6 W.,

M.D.B. and M., NE 1/4 NE 1/4, Sec. 30, T 45 N., R 4 W., M.D.B. and M., NW 1/4 NE 1/4 and SE 1/4 NE 1/4, Sec. 23, T 42 N., R 6 W., M.D.B. and M., SW 1/4 NE 1/4, Sec. 30, T 45 N., R 6 W., M.D.B. and M., and SW 1/4 SE 1/4, Sec. 15 and NE 1/4 NE 1/4, Sec. 22, T 42 N., R 5 W., M.D.B. and M. The lands watered from the above named streams and springs were omitted from the District for the reason that the flows of the streams have receded to such an extent during the past several years that there is little or no water available for use during the period when water master service is required on the remaining streams within the district, while the springs are isolated water sources generally serving only one party and of insufficient flow to contribute to Shasta River or its tributaries.

There are approximately 33,000 acres of irrigated land, served by 388 diversions, within the District. Some 19,500 additional acres of land under the Montague Water Conservation District system are also within the boundaries of the Water Master District, however, in accordance with reorganization plans of the Montague Water Conservation District it is proposed to reduce this acreage to 8000 acres.

A petition for the appointment of a water master for the Shasta River Water Master District, bearing the signatures of the owners of more than 15 per cent of the conduits diverting from the streams within the District, was received by the Division of Water Resources on November 23, 1933. This petition was given consideration by the Division of Water Resources and in accordance with the provisions of Section 37a of the Water Commission Act a water master was appointed for the Shasta River Water Master District.

The writer entered upon his duties in the field as Shasta River Water Master on March 6, 1934 and continued in that capacity throughout the 1934 season up to and including September 8.

DISCUSSION OF RESULTS FOR 1934 SEASON

Precipitation

Data on the precipitation at Mount Shasta City and at Montague are presented in Tables 1 and 2, submitted at the end of this report. Table 1 is a record of the monthly, seasonal and average amounts of precipitation in inches for the seasonal years 1889 to 1934. Table 2 gives a comparison of the monthly and seasonal precipitation for the 1933-34 season with the mean monthly and seasonal precipitation for the period of record, together with a comparison of the snowfall as recorded at Mount Shasta City.

The precipitation for the 1933-1934 season totaled 18.95 inches, or 82 per cent of the mean for the 45 seasonal years. The amount of precipitation which occurred from October 1 to April 1 was 71 per cent of the season's total, whereas the mean for the same months over the long time period of record is 80 per cent of the seasonal mean of 23.18 inches. Precipitation which occurred during the irrigation season of 1934, April 1 to October 1, amounted to 29 per cent of the seasonal total or 9 per cent above the long time mean for the same period.

The total snowfall as recorded at Mount Shasta City for the 1933-1934 season was 22 inches, all of which fell in the month of December. The total normal snowfall at the above station for the months of December, January, February, March and April is 103 inches.

Water Supply

Measuring stations equipped with water stage recorders were maintained on Shasta River above the Edson-Foulke Freka Ditch, at the Grenada Pumping Plant and near Montague, on Parks Creek above the Edson-Foulke Parks Creek Ditch and on Little Shasta River above the Harp Ditch.

These stations were used to obtain a daily record of the run-off of the several streams and also as controls at critical points on the stream system for the distribution of the available water. Measurements of the discharge of Beaughan Spring, Big Springs, Cleland Springs and Carrick Spring were also taken intermittently throughout the season. The records of discharge obtained at the various measuring stations are presented at the end of this report in Tables 3 to 10, inclusive.

The run-off over the entire stream system was abnormally low. As compared with the 1922 season, the only period for which comparable records are available, the run-off for 1934 of Shasta River above the Edson-Foulke Yreka Ditch was 25 per cent, Parks Creek 17 per cent and Little Shasta River 6 per cent of the run-off measured at the respective stations in 1922. Precipitation for the 1922 season was 87 per cent of normal while the precipitation for the 1934 season was 82 per cent of normal, however, the snowfall for the 1934 season, as recorded at Mount Shasta City, was only 21 per cent of normal, consequently, it would appear that the abnormally low run-off for 1934 was largely due to the deficiency of the snow pack in the mountains. The deficiency of snow was easily perceptible at the head-waters of Little Shasta River and was reflected in the flow of that stream, where little more than stock water was available throughout the entire season.

Measurements made in 1934 on various springs and on Lower Shasta River, which derives its principal flow from springs, indicate a material decrease in the discharge from these sources as compared with measurements made in 1922. The results are tabulated below.

NAME OF SPRING OR STREAM	DISCHARGE IN 1934 IN PERCENT OF 1922 FLOW
Lower Shasta River	70
Big Spring above Louie Dam	76
Beaughan Spring	78
Carrick Spring	83
Cleland Spring	76

Records of miscellaneous measurements made on the four springs above named prior to 1934 and the mean of the measurements taken in 1934 are presented in Table 11, at the end of the report. Attention is directed to the variation in the flow of each spring. It has been the general opinion of the water users diverting from these sources that there was little or no variation in the discharge from year to year.

Distribution

The Shasta River Judgment and Decree defines only the rights by prior appropriation of the various water users within the Shasta River Water Master District, however, many of the parties who were awarded water rights in said decree as appropriators are also riparian owners and as such have a dual claim to the use of the waters of the stream system. Also there are several water users on Lower Shasta River who were not parties to the Shasta River proceeding but nevertheless have valid claims to the use of water as riparian owners. These riparian claims must necessarily be given consideration and, consequently, involve considerable deviation from the decree in making an equitable distribution of the available water supply.

Deviation from the decree is required principally in distribution of water on those portions of the stream system where conflict is encountered

among the parties having dual claims. Although the priorities of the appropriative rights of these parties were fixed in the decree in accordance with the claims filed in the Shasta River proceeding the use of water has not been in strict conformity therewith, but rather paralleled usage on an equal and correlative basis under claim of right as riparian owners. Under this practice a number of ranches embracing a considerable acreage of irrigated riparian land have been developed, many of which would be deprived of water throughout the greater part of each irrigation season by a strict exercise of priorities.

In general the course pursued during 1934 in an attempt to make an equitable distribution of the available water and yet adhere as closely as possible to the awards as fixed in the decree was as follows:

(1) The amounts of water delivered to the riparian owners on Lower Shasta River, who were not parties to the Shasta River proceeding, were determined on the same basis as was used in fixing the amounts of water for the decreed rights on that portion of the stream system.

(2) The quantities of water awarded in the decree were used as the basis for the allotments of water distributed to each water right owner.

(3) Where no conflict with riparian claims was encountered distribution was made in accordance with the amounts of water and priorities set forth in the decree.

(4) In the case of dual claims where the exercise of priorities as set forth in the decree was at

variance with past usage and would deprive riparian owners of water, the available water supply was prorated among the various water right owners on an equal and correlative basis in accordance with practices which have grown up under their claims as riparian owners.

This plan of distribution was carried on throughout the season and for the most part received the support of the various water users.

The Shasta River stream system naturally divides into several sections which must be treated as separate units in distributing water within the District. This segregation is necessary due to the differences in the regimen of flow of the several tributaries and along different portions of the main Shasta River and also by reason of the character of the water rights involved. A description of the work accomplished in the distribution of water in each section during the 1934 season follows.

Shasta River above Confluence of Boles Creek: Distribution in this section was carried on in accordance with the amounts and priorities awarded in the decree. The available water supply was deficient throughout the entire season except from March 27 to April 4 and from April 22 to May 9. Water master service was confined principally to regulating the Edson-Foulke Yreka Ditch, the Hammond-Scott Ditch and the R. Dow Eddy Creek Ditch, which are operated under strictly appropriative water rights. Regulation of the Dow and Hammond (California Joint Stock Land Bank) Ditches was prevented as the owners thereof elected to stand on their riparian rights and refused to give the water master the cooperation necessary where dual claims were involved.

Shasta River below junction of Boles Creek and Boles Creek: The water available for this section of the stream system was entirely inadequate throughout the season, except for one or two days following a heavy storm at the end of March. The net available water averaged about 30 per cent of the amount required to satisfy the decreed rights. Due to this extreme deficiency in the water supply considerable conflict was encountered between the water rights as defined in the decree and the usage which has grown up under riparian claims.

The plan of distribution adopted to cope with the situation was to regulate the small, upstream diversions to the amounts of water awarded in the decree, regardless of priority dates, as long as no serious shortage was suffered by the extreme lower users. As the water supply decreased the diversions were gradually cut until distribution was placed as nearly as possible on an equal and correlative basis. Deviation from the decree was necessary otherwise the water available for distribution during the greater part of the season would have been absorbed by about five ranches, leaving the remaining eleven properties without water.

Shasta River below Montague Water Conservation District Reservoir: The segregation of this portion of Shasta River from the section above is occasioned by the operation of the Montague Water Conservation District's storage reservoir, known as Lake Dwinnell, which was created by the construction of a dam across Shasta River on the J. L. Jones ranch. The reservoir has a capacity of 70,000 acre feet and impounds water diverted from Parks Creek and the waters of Shasta River under the water rights awarded to the Montague Water Conservation District in the Shasta River Judgment and Decree and, also, the natural flow of Shasta River to which the water right

owners immediately below the dam are entitled.

Storage by the District of water to which the right owners below the dam are entitled, is authorized in accordance with agreements heretofore made between said District and said water right owners. By these agreements the District is permitted to impound the entire flow of Shasta River and later to deliver to each water right owner an amount of water specified in the respective agreements in lieu of any water said water right owner might claim as an appropriator and as a riparian owner.

The water right owners and the amounts of water allotted under the agreements are as follows:

NAME OF WATER RIGHT OWNER	ACRE FEET PER SEASON
J. L. Jones	198
John Soule	692
J. W. and Mary L. Dennis	696
The McKee Company	1200
E. S. Terwilliger	596
Totals	3382

Delivery of the J. L. Jones and The McKee Company allotments are made direct from the Montague District's Main Canal. Water for the other three owners is spilled into Shasta River and re-diverted therefrom through their respective ditches. Releases from the reservoir are made in the amounts and at the times requested by the water right owners until their respective seasonal allotments of water have been delivered. A system of weirs, equipped with automatic water stage registers, are maintained to measure the

amount of water received by each owner.

Water stored in the reservoir in excess of that required for the prior rights under the agreements is released for District use. The amount of water impounded during each season since the reservoir was put into operation in 1928-1929, however, has been little more that sufficient to supply these prior rights, and, although release for District use has been drastically curtailed, seasonal deliveries to the water right owners below the dam have fallen short of the specified allotments. This has resulted from the lack of experience in operation of the reservoir, in that sufficient allowance has not been made for water lost from the reservoir by seepage and evaporation.

Several of the parties to the agreements have contended that the agreements amount to a transfer of their water rights to the District and that therefore they should not be taxed for water master service. The agreements, however, do not constitute a transfer of title but only affect the manner of delivery of water through the reservoir. In other words, instead of the District being required to pass a continuous flow of water through its reservoir to satisfy the claims of the several water right owners below the dam, the equivalent of these claims, as set forth in the respective agreements, is stored in the reservoir and later delivered to the various parties upon their demand. These parties were awarded water rights by the Shasta River Judgment and Decree, separate from those awarded the District, and as water right owners in the Shasta River Water Master District are subject to the payment of their share of the cost of water master service.

It is the duty of the water master to regulate diversions above the District's reservoir so that all of the water to which the District and the users below the dam are entitled may be made available for storage and also to supervise operation of the reservoir and the deliveries therefrom to

the end that all claims may be satisfied. This entails sufficient work on the part of the water master in behalf of the water right owners below the dam to justify the amounts assessed against them for water master service.

Beaughan Creek: The rights to the use of the waters of Beaughan Creek are set forth in sub-paragraphs 12 and Paragraph III of the Shasta River Judgment and Decree and cover priority orders from 1 to 5, inclusive, however, distribution on this stream is confined almost entirely to the water available for use under the second priority class. The first priority rights are from springs used only by the Long Bell Lumber Company, and the fourth and fifth prioritier cover diversions from an unnamed fork of Beaughan Creek which was dry throughout 1934.

The second priority rights are defined in the decree in accordance with an agreement under date of January 21, 1909, whereby the waters of Beaughan Creek, as measured just below the springs forming its source, were divided among the various claimants upon an equal and correlative basis. The flow of the stream as measured on May 14, 1934 was 5.57 cubic feet per second and was sufficient to distribute approximately 67 per cent of the second priority allotments throughout the season.

Water was distributed to the third priorities during the period from July 7 to 31, when haying operations were in progress on the lower ranches.

It has been the practice for many years for the Long Bell Lumber Company to divert practically the entire flow of Beaughan Creek and after use of the same at the Company's saw mill to return the lower users share of the water to Beaughan Creek above the Clyde Morris Ranch. This practice, while not covered by the above mentioned agreement has been carried

on beknown to all the other water users on the stream and, until recently, without objection on their part. In 1932, however, the case of Jackson et al., vs Belcastro and Morris involving the use of water from Beaughan Creek was filed in the Superior Court of Siskiyou County and the practice of running the water through the Long Bell Company's mill pond became one of the issues in the case. The outcome of this case is not known to the writer at this time.

A 5.0' Cipolletti weir, equipped with a Gurley water stage register, is located on Beaughan Creek below the point of return from the Long Bell Company's mill pond, whereby the amount of water passing to the lower users is measured. This weir has been maintained since June 1923 and the records show that the Long Bell Company has taken great care to by-pass the proper amount of water. It is the duty of the water master to inform the Company from time to time as to the flow of the creek and as to the amount of such flow that should be discharged over this weir.

Carrick Creek: Reference is made to Table 5 on Page 261 of the mimeograph copy of the Shasta River Judgment and Decree. The waters of this stream were distributed in accordance with the rights set forth in the decree, with the exception of the first and sixth priority rights of Frank H. Mills, the eighth priority right of F. E. Stone and W. O. Stone and the several rights from unnamed springs under the ninth, eleventh, twelfth and thirteenth priorities. Under past usage of many years standing the first and sixth priorities have not been exercised. The eighth priority right involves an unnamed spring on the W. O. Stone property, the waters of which are entirely used on the W. O. Stone and F. E. Stone lands. The other

unnamed springs are either used for domestic purposes or are of insufficient flow to require regulation. The remaining rights and their respective priorities were established by Court decrees prior to the Shasta River proceeding and the use of the waters of Carrick Creek has been in general accordance therewith for many years.

In order to conform to these practices it was found necessary to deviate from the decree to the extent that the eighth priority right was advanced to a fifth priority order and the first and sixth priorities were considered as of the last, or fourteenth, priority order. No attempt was made to regulate the domestic supplies or the other diversions from the several small unnamed springs.

Under this rearrangement of priorities and with the amount of water available, distribution was confined to the first, second, third, fourth, fifth and ninth priorities on Carrick Creek and the fifth and seventh priorities from Stone Creek. The total of allotments for these priorities is 8.46 cubic feet per second.

A summary of the distribution for the 1934 season follows:

Month	Average Net Available Water Supply		Distribution in Per Cent of priority allotments		
	cu.ft.per sec.	% of Total allotments	1st to 5th Incl.	7th	9th
March	7.98	94	100	100	44
April	7.68	91	100	100	9
May	7.71	91	100	100	13
June	7.56	89	100	96	0
July	7.86	93	100	100	30
August	6.88	81	100	28	0
September	7.03	83	100	43	0

The increase in the net available water for July was due to the greater quantity of water that was returned to the stream during haying operations. Conversely, the low average for August was caused when the water was spread on the dry fields after haying.

Parks Creek: The regimen of the flow of Parks Creek and its different branches and tributaries during the greater part of the season was such that while on certain sections of the stream system there was insufficient water to supply all or any part of some of the earliest priorities, along other sections later priorities were fully or partially satisfied. Distribution during the season was confined chiefly to the regulation of water to the larger diversions which, excepting the Montague Water Conservation District, also command the earliest priorities. A summary of the distribution for 1934 is given below.

Month	Measured Water Supply cu. ft. per sec.	Distribution in per cent of priority allotments			
		1	2	3	Robertson 4, 6, ~~8~~, 11, 12 & 15
March	31.2	x	x	x	60
April	22.0	x	x	x	89
May	10.9	x	x	37	65
June	4.9	82	0	0	Stock Water
July	2.0	33	0	0	—
August	1.3	22	0	0	—
September	1.3	22	0	0	—

The fifth priority rights are from the North Branch of Parks Creek and from Spring Creek, a small tributary having its source in a spring and were administered separately from the other diversions. The North Branch rights received water only when Parks Creek was at high stages or from return water from irrigation on the north side of the Duke (Caldwell)

ranch. The Spring Creek rights were supplied with a small amount of water throughout the season.

The 21st and 24th priority rights received 100% allotments throughout the season. These rights apply to the M. A. Silva pumping plant, located at the extreme lower end of Parks Creek below the point where there is a considerable accretion to the flow of the stream from springs on the Robertson (Duke) ranch.

The Montague Water Conservation District's diversion from Parks Creek which bears the last, or 26th, priority order on the stream, was opened for the first time during the season on March 27 and was finally closed on April 26. Diversion over this period was not continuous. The total amount of water diverted was approximately 200 acre feet.

Big Springs: Distribution on Big Springs during the 1934 season is summarized below.

Month	Measured Water Supply	Distribution in percent of priority allotments		
		Louis Bros 1 & 2	Stallcup 3 & Riparian Claim	Big Springs I.D. 4
	Cu. ft. per sec.			
March		100	0	65
April	32.4	100	132	59
May	34.6	100	125	58
June	34.4	100	102	63
July	35.2	100	100	64
August	34.7	100	93	65
September	34.0	100	95	65

The Stallcup right as defined in the Shasta River Judgment and Decree is for 5.70 cubic feet per second. Mr. Stallcup, however, refused to permit his pump to be regulated to a discharge below 7.50 cubic feet per second, the capacity of the pump. This additional water was taken under Stallcup's claim as a riparian owner. The pump was operated at a discharge of 7.50 cubic feet per second from April 10 to May 15, inclusive. Beginning May 16, under an agreement between Stallcup and the Big Springs Irrigation District, the Stallcup diversion was reduced to 7.00 cubic feet per second and was delivered to the Stallcup Ditch through the Big Springs Irrigation District's pumping plant.

Stallcup completed his first irrigation on June 23 and turned approximately 6.00 cubic ft. per sec., of water to the District until the end of the month. This practice was repeated for a period of one week each in July, August and September, consequently, the continuous flow diversion by Stallcup for the last four months of the season amounted to slightly less than his decreed allotment.

Eighty acres of alfalfa on the Stallcup ranch were plowed and planted to grain. This acreage did not receive any water after the first irrigation and largely accounts for the decrease in use during the latter part of the season.

Lower Shasta River: This section of the river extends from the junction of Shasta River and Big Springs Creek to the lower most diversion on Shasta River. The sustained flow of the stream, produced from springs originating in the Big Springs area and along the lower reaches of Parks Creek, together with return water from irrigation, is normally

sufficient throughout each irrigation season to supply all the water rights with full allotments except those of the Grenada Irrigation District and Roland Ekstrom which bear the two latest priorities. This deficiency in the available water supply is naturally borne by the two late priorities, consequently the water rights divide into two priority groups, with those of the District and Ekstrom comprising the second priority group and all of the others falling in the first priority class.

The water rights of the first priority class total 91.2 cubic feet per second, of which 10.5 cubic feet per second cover riparian claims not defined in the Shasta River Judgment and Decree. The remaining 80.7 cubic feet per second are for allotments awarded to the various claimants in the said Judgment and Decree. The second priority allotments total 40.25 cubic feet per second and cover decreed awards of 40.0 and 0.25 cubic feet per second to the Grenada District and Ekstrom respectively. The total of allotments for both classes is 131.4 cubic feet per second.

The Webb Brothers Pumping Plant having a decreed right to 4.69 cubic feet per second was not operated during the season of 1934. The measured diversion of the Shasta River Water Association Pumping Plant was 40.0 cubic feet per second instead of 42.0 cubic feet as awarded in the decree. The amount of water required to supply the first priority diversions, therefore, was decreased 6.69 cubic feet per second to a total of 84.5 cubic feet per second.

During April, the Grenada Irrigation District operated two units having a maximum capacity of 31.0 cubic feet per second. Beginning May 1st, one unit was "signed off" and for the remainder of the season the maximum diversion by the plant was limited to 21.0 cubic feet per second, the capacity of the double unit. The amount of water necessary to satisfy the

second priority diversions, consequently, was reduced to 31.25 cubic feet per second during April and 21.25 cubic feet per second subsequent thereto.

Distribution on Lower Shasta River is largely a matter of regulating the first priority diversions to their allotted amounts and keeping informed of any shut downs so as to permit the maximum possible diversion by the Grenada District. A summary of results for the 1934 season is given below.

Month	Net Available Water Supply				Distribution in % of Priority Allotments	
		% of Total Allotments	% of Priority Allotments			
	Cu. Ft. per sec.		First	Second	First	Second
April	124	95	100	82	89	65
May	134	102	100	100	89	32
June	118	90	100	67	93	27
July	103	79	100	29	92	35
August	98	75	100	17	93	30
September	101	77	100	24	77	30

The per cent of allotments delivered to the second priority class in July, August and September fairly represent the amounts of water available for diversion during those months. It was necessary throughout this period to limit the Grenada Pump to a diversion of between 12.0 and 17.0 cubic feet per second. For April, May and June the diversion by the Grenada Pump was considerably below the amount of water available due to the capacity of the plant being limited to 31.0 cubic feet per second in April and to 21.0 cubic feet per second for the remainder of the season, and on account of non-operation of the plant occasioned by reasons other than shortage of water. In May the

plant was shut down for a period of six days following a rain and again for four days on account of thunder storms. In June a break in the first lift pipe line caused a lay off of four and one half days and haying operations was responsible for another shut down of six days duration.

Little Shasta River: Regular water master service was instituted on this stream in 1928 and was carried on during the irrigation seasons of 1928 to 1933, inclusive, under the terms of an agreement between the Little Shasta River Water Users and the Division of Water Resources. Distribution during the above period was in accordance with the water rights as they were later defined in the Shasta River Judgment and Decree and reports covering the same are on file in the office of the Division of Water Resources.

Distribution during the 1934 season followed the practices set up in previous years, however, due to the extreme shortage in the water supply it was found necessary to deviate from the decree in distributing water to the first and third priority rights. Beginning July 1, the first priority allotments were gradually reduced until on August 15 only 85 percent of said allotments was being delivered. Thereafter deliveries were gradually increased to about 94 per cent of allotments on September 8. This cut in the first priority allotments made available to the third priority class an average of 3.30 cubic feet per second or 56 per cent of the total of allotments for that class, which proved to be the minimum amount of water that would furnish a meager supply of stock water to the third priority users.

In distributing this amount of water among the third priority owners each ditch was limited to the minimum flow that would supply the requirements for stock watering purposes. The Hart and Haight Ditch, the owners of which had water available from other sources, was cut off entirely.

The percentages of the third priority allotments received by the various other ditches are Harp Ditch 83 per cent, Dimmick 50 per cent, Soule and Terwilliger 73 per cent, Musgrave and Linton 65 per cent, Babcock, Martin and Soule 45 per cent, and Hart, Haight and Prather 50 per cent.

The deviations from the decree were made with the knowledge and consent of the water users. The division of the available water among the several ditches was left to the discretion of the water master.

A summary of the distribution is given in the accompanying table.

Month	Available Water Supply		Distribution in per cent of Priority Allotments				
	Cu. Ft. per Sec.	*% of Total Allotments	1	3	4	5	6
March	16.3	21	100	100	87	44	1
April	11.9	15	100	100	84	12	0
May	9.9	13	100	100	16	3	0
June	8.8	11	100	86	0	0	0
July	7.9	10	95	56	0	0	0
August	7.6	10	89	56	0	0	0
September	7.7	10	94	57	0	0	0

*Percent of total of allotments for first, third, fourth fifth, sixth and seventh priorities.

Measuring Devices Installed

A list of the measuring devices maintained on the various ditches is given in Table 12 at the end of this report. With the exception of those listed under Little Shasta River and Cleland Springs, the devices were installed during the 1934 season.

TABLE 1

PRECIPITATION DATA

Average Precipitation at Mount Shasta City and Montague-1889 to 1934 (1)

Monthly, seasonal and average amounts in inches

Season	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Seasonal
1930-31	0.41	1.26	0.77	3.59	1.19	1.16	0.42	0.24	2.71	0.00	0.00	0.94	12.68
1931-32	1.95	.92	6.81	2.32	1.13	1.77	1.39	3.20	.50	.19	.00	.00	20.18
1932-33	.46	3.50	2.35	4.98	.64	5.86	.57	1.28	.34	.12	.00	.20	20.30
1933-34	1.24	.02	5.38	2.13	3.16	1.46	1.64	1.16	1.54	.58	.40	.24	18.95
Totals	70.49	130.72	167.06	182.46	153.03	126.77	72.48	58.27	30.50	10.34	10.97	30.05	1043.14
Mean 45 yrs.	1.57	2.90	3.71	4.05	3.40	2.82	1.61	1.30	.68	.23	.24	.67	23.18

(1) See 1930 Water Master Report for records 1889-1930.

TABLE 2

Monthly Precipitation for Seasonal year 1933-34

Compared with Mean Monthly Precipitation - 1889 to 1934

Month	Monthly Mean - 45 yrs.		Monthly 1933-34		Snowfall at Mt. Shasta City in Inches	
	Inches	Per Cent of Total	Inches	Per Cent of Total	Normal	1933-34
October	1.57	6.8	1.24	6.5		
November	2.90	12.5	.02	.1		
December	3.71	16.0	5.38	28.4	23.5	22.0
January	4.05	17.5	2.13	11.2	36.3	T
February	3.40	14.7	3.16	16.7	20.4	0
March	2.82	12.2	1.46	7.7	18.2	0
April	1.61	6.9	1.64	8.7	4.6	0
May	1.30	5.6	1.16	6.1		
June	.68	2.9	1.54	8.1		
July	.23	1.0	.58	3.1		
August	.24	1.0	.40	2.1		
September	.67	2.9	.24	1.3		
Totals	23.18	100.0	18.95	100.0	103.0	22.0

TABLE 3

Daily Discharge in Cubic Feet per Second

SHASTA RIVER ABOVE EDSON-FOULKE YREKA DITCH

March 7 to September 7, 1934

Day	March	April	May	June	July	Aug.	Sept.
1		43.6	33.5	18.2	5.1	1.0	0.8
2		37.6	31.5	16.7	5.1	1.0	.8
3		32.2	29.7	15.7	6.0	1.2	.7
4		28.3	28.3	14.7	4.8	1.3	.7
5		25.9	31.5	16.7	4.2	1.2	.7
6		24.1	32.9	23.5	3.9	.9	.8
7	21.8	24.7	34.8	18.7	4.5	.8	.9
8	21.3	25.3	33.5	15.7	5.1	.8	
9	18.2	21.8	28.3	15.2	4.5	.8	
10	16.2	21.8	25.3	14.7	4.2	.8	
11	17.7	21.8	24.1	14.7	3.6	.6	
12	19.7	21.8	24.7	15.2	3.4	.5	
13	21.3	22.9	22.9	14.3	3.0	.7	
14	20.2	22.3	22.9	13.9	3.0	.5	
15	20.2	21.8	23.5	13.0	3.2	.4	
16	20.8	21.8	22.9	12.1	3.2	.4	
17	15.7	20.8	22.9	11.7	3.0	.5	
18	15.2	19.7	21.8	11.7	3.0	.5	
19	16.2	19.7	20.8	10.8	2.6	.5	
20	17.2	19.7	19.7	11.3	2.6	.5	
21	18.7	21.3	18.7	9.6	2.8	.5	
22	18.7	36.4	18.7	8.8	2.6	.5	
23	18.7	76.9	19.2	8.4	2.0	.5	
24	20.2	60.9	19.7	8.4	1.7	.5	
25	22.9	46.4	19.7	8.0	1.5	.5	
26	20.2	40.4	18.7	8.8	1.5	.5	
27	48.9	38.3	18.7	8.8	1.5	.6	
28	102	32.9	19.2	8.0	1.4	1.0	
29	83.4	63.5	24.4	6.3	1.2	1.6	
30	65.2	34.0	22.6	5.4	1.0	1.2	
31	52.2		20.2		.9	.9	
Total Sec Ft. Days	732.5	948.6	755.3	379.0	96.1	23.2	5.4
Mean Sec. Feet	29.3	31.6	24.4	12.6	3.10	0.75	.77
Total Acre Feet	1450	1880	1500	752	191	46.0	

TABLE 4

Daily Discharge in Cubic Feet per Second

PARKS CREEK ABOVE DUKE NORTH DITCH

March 12 to September 7, 1934

Day	March	April	May	June	July	Aug.	Sept.
1		34.7	19.2	6.5	3.0	1.7	1.4
2		29.8	19.2	6.0	2.8	1.6	1.3
3		26.4	18.7	5.8	2.7	1.6	1.3
4		24.7	17.4	5.5	2.5	1.4	1.3
5		24.2	17.0	6.1	2.5	1.3	1.3
6		23.6	16.6	8.3	2.5	1.2	1.3
7		24.2	16.6	8.7	2.0	1.2	1.3
8		23.6	17.6	7.2	2.1	1.3	
9		20.0	14.9	6.3	2.0	1.4	
10		20.0	12.6	5.4	2.0	1.3	
11		21.0	11.5	5.0	1.9	1.2	
12	17.3	21.4	11.0	4.8	1.7	1.2	
13	17.7	20.8	10.1	5.4	1.8	1.2	
14	18.9	20.3	9.7	4.9	1.9	1.2	
15	19.5	20.3	9.3	4.7	1.9	1.2	
16	20.2	18.6	9.2	4.1	2.0	1.2	
17	17.7	16.9	8.8	3.7	1.9	1.3	
18	18.1	16.2	8.1	3.9	2.0	1.2	
19	19.5	15.7	7.7	3.7	1.9	1.2	
20	20.2	15.7	7.4	3.8	1.9	1.1	
21	20.4	15.7	7.1	3.7	1.9	1.1	
22	20.6	21.2	6.8	3.7	1.8	1.1	
23	20.4	31.9	6.3	3.6	1.7	1.2	
24	23.0	27.9	6.2	3.6	1.7	1.2	
25	29.1	25.0	6.4	3.6	1.6	1.2	
26	25.7	22.7	6.5	3.8	1.4	1.2	
27	44.0	21.2	6.2	3.8	1.5	1.3	
28	111	18.1	6.0	3.6	1.6	1.4	
29	71.0	19.6	7.6	3.4	1.6	1.4	
30	49.3	18.7	8.3	3.2	1.6	1.4	
31	39.9		7.2		1.6	1.4	
Total Sec. Ft. Days	623.5	660.1	337.2	145.8	61.0	39.9	9.2
Mean Sec. Feet	31.2	22.0	10.9	4.86	1.97	1.29	1.31
Total Acre. Ft.	1240	1310	669	289	121	79.1	18.2

TABLE 5

Discharge in Cubic Feet per Second

CARRICK SPRING

March 22 to September 5, 1934

Day	March	April	May	June	July	Aug.	Sept.
1					5.83		
2			5.88				
3							
4						5.74	
5							5.80
6				5.80			
7		5.65					
8					5.79		
9						5.74	
10							
11							
12							
13				5.83	5.81		
14			5.80				
15							
16							
17							
18		5.65					
19				5.87	5.76		
20				5.84			
21		5.70	5.82				
22	5.65			5.78			
23							
24						5.70	
25				5.80			
26			5.78				
27	5.65						
28			5.77				
29					5.79		
30					5.79		
31			5.80			5.76	
Mean Sec. Feet	5.65	5.67	5.81	5.82	5.80	5.74	5.80
Total Acre Feet	347	337	357	346	357	353	345

7 Mo. Period: Total Acre Feet 2440

TABLE 6

Discharge in Cubic Feet per Second

BIG SPRINGS

April 4 to September 4, 1934

Day	April	May	June	July	Aug.	Sept.
3				34.4		
4	31.9					34.0
5	31.8					
7		34.9				
8					33.9	
12	33.6					
14					34.7	
19		34.4				
21					35.4	
24				35.4		
25		34.6				
26			34.4			
28					34.8	
31		34.7		35.9		
Mean Sec. Feet	32.4	34.6	34.4	35.2	34.7	34.0
Total Acre Feet	1930	2130	2050	2160	2130	2020
6 Mo. Period Total Acre Feet			12,400			

TABLE 7

Daily Discharge in Cubic Feet per Second

SHASTA RIVER AT GRENADA PUMP

April 12 to September 22, 1934

Day	April	May	June	July	Aug.	Sept.
1		98.7	82.6	81.7	69.5	70.5
2		90.5	81.9	78.4	69.8	70.5
3		103	77.3	81.6	70.6	68.2
4		86.9	77.2	77.6	70.6	63.4
5		86.9	80.0	75.3	70.6	64.4
6		84.4	84.6	76.5	68.2	68.5
7		82.6	104.0	80.1	71.8	67.7
8		89.1	98.0	76.4	64.4	66.9
9		89.1	87.5	75.6	61.8	68.5
10		90.2	89.4	71.0	62.6	90.1
11		92.3	77.9	73.6	62.6	67.7
12	90.3	86.8	75.4	72.7	60.9	69.3
13	93.0	85.4	78.4	70.1	61.3	66.9
14	91.7	83.4	74.7	74.8	62.6	67.7
15	87.2	82.6	75.6	72.4	61.5	69.3
16	90.7	79.3	75.5	70.0	61.7	73.6
17	90.2	80.1	70.7	70.0	61.7	72.7
18	88.1	80.9	90.2	71.6	65.4	73.6
19	79.7	78.5	75.4	73.0	65.3	79.0
20	84.1	76.7	74.5	72.0	66.9	74.7
21	82.3	75.7	74.5	70.4	66.9	81.1
22	82.7	75.1	71.8	68.0	66.9	84.4
23	85.4	76.5	70.1	64.9	69.3	
24	83.8	77.3	75.3	64.3	68.5	
25	89.7	77.3	78.8	64.7	64.6	
26	88.8	78.6	83.9	67.9	63.9	
27	87.7	86.1	84.3	68.8	64.6	
28	92.6	76.2	89.3	68.8	66.9	
29	91.4	85.8	82.4	72.3	70.9	
30	93.0	91.3	82.7	67.1	68.5	
31		84.9		65.0	71.7	
Total Sec. Ft. Days	1672.4	2612.2	2423.9	2236.6	2052.5	1578.7
Mean Sec. Feet	88.0	84.3	80.8	72.2	66.2	71.6
Total Acre Feet	3320	5180	4810	4440	4070	3130

TABLE 8

Daily Discharge in Cubic Feet Per Second

SHASTA RIVER NEAR MONTAGUE

April 14 to September 29, 1934

Day	April	May	June	July	Aug.	Sept.
1		83.8	60.5	22.0	13.3	62.0
2		113	45.6	30.4	7.7	62.0
3		118	34.4	30.4	9.0	33.3
4		122	30.4	25.4	15.0	16.8
5		104	39.7	15.0	12.5	26.6
6		76.9	65.2	18.7	11.8	26.6
7		65.2	56.0	38.6	8.3	20.9
8		68.4	71.8	20.9	11.8	14.1
9		73.5	96.2	15.0	6.5	12.5
10		70.1	89.0	20.9	9.7	14.1
11		53.0	58.9	34.4	11.8	16.8
12		42.8	35.8	40.0	18.7	15.9
13		34.4	38.6	35.8	25.4	14.1
14	23.1	27.8	18.7	35.8	17.7	15.9
15	20.9	24.2	13.3	23.1	9.7	18.7
16	19.8	23.1	9.0	16.8	15.9	20.9
17	18.7	17.7	12.7	20.9	26.6	38.6
18	22.0	17.7	13.3	16.8	23.1	44.2
19	15.0	17.7	26.6	11.1	20.9	57.5
20	13.3	17.7	37.2	9.7	13.3	70.1
21	30.4	19.8	35.8	9.0	11.8	71.8
22	27.8	20.9	33.0	10.4	14.1	68.4
23	33.0	16.8	29.1	8.3	12.5	66.8
24	37.2	16.8	53.7	5.9	23.1	85.5
25	34.4	18.7	35.8	11.8	23.1	90.8
26	51.5	28.6	25.4	10.4	17.7	94.4
27	44.2	50.0	23.1	33.0	20.9	96.2
28	38.6	82.0	23.1	20.9	44.2	107
29	33.0	83.8	25.4	10.4	20.9	
30	78.6	100	20.9	10.4	20.9	
31		96.2		14.1	26.6	
Total Sec. Ft. Days	541.5	1704.6	1158.2	626.3	524.5	1282.5
Mean Sec. Feet	31.9	55.0	38.6	20.2	16.9	45.8
Total Acre Feet	1070	3380	2300	1240	1040	2540

TABLE 9

Daily Discharge in Cubic Feet Per Second

LITTLE SHASTA RIVER ABOVE HARP DITCH

March 6 to September 30, 1934

Day	March	April	May	June	July	Aug.	Sept.
1		13.5	4.9	2.25	1.40	1.18	1.20
2		12.0	4.7	2.20	1.40	1.20	1.20
3		10.6	4.8	2.10	1.40	1.30	1.18
4		8.3	3.9	2.10	1.38	1.25	.96
5		7.0	3.5	2.48	1.38	1.22	1.15
6	7.6	6.4	3.4	3.00	1.35	1.22	1.20
7	6.8	6.0	3.5	2.55	1.38	1.00	1.15
8	6.4	5.7	6.0	2.30	1.35	.88	1.25
9	6.8	5.1	4.3	2.15	1.28	.85	1.25
10	7.6	5.0	3.7	2.05	1.28	.85	1.25
11	7.6	4.7	3.4	2.10	1.25	.86	1.25
12	7.8	4.7	3.2	2.20	1.30	1.00	1.25
13	7.8	4.4	3.1	2.10	1.30	1.00	1.28
14	7.8	4.3	3.0	1.85	1.30	1.05	1.28
15	8.3	4.2	2.8	1.80	1.30	1.00	1.25
16	8.3	3.9	2.75	1.80	1.30	1.08	1.27
17	7.3	3.8	2.7	1.60	1.30	1.12	1.28
18	7.3	3.7	2.65	1.78	1.25	1.12	1.30
19	7.6	3.6	2.60	1.70	1.25	1.15	1.31
20	7.0	3.5	2.55	1.90	1.25	1.15	1.33
21	8.9	3.4	2.50	1.80	1.28	1.15	1.34
22	7.8	3.5	2.40	1.68	1.20	1.00	1.36
23	7.0	3.6	2.35	1.68	1.15	1.05	1.38
24	6.8	3.8	2.40	1.68	1.08	1.08	1.40
25	8.3	3.7	2.55	1.70	1.15	1.08	1.42
26	7.0	3.5	2.55	2.30	1.15	1.08	1.42
27	15.2	3.4	2.20	1.90	1.10	1.15	1.42
28	37.0	3.2	2.25	1.85	1.15	2.69	1.42
29	25.8	3.3	2.50	1.75	1.15	1.53	1.42
30	16.9	4.3	2.55	1.50	1.12	1.30	1.42
31	19.8		2.30		1.20	1.28	
Total Sec. Ft. Days	272.5	156.1	98.00	59.85	39.13	35.87	38.59
Mean Sec. Feet	10.5	5.20	3.16	2.00	1.26	1.16	1.29
Total Acre Feet	540	310	194	119	77.6	71.1	76.5

TABLE 10

Discharge in Cubic Feet Per Second

CLELAND SPRINGS

March 11 to September 8, 1934

Day	March	April	May	June	July	Aug.	Sept.
1			6.64		6.55		
2				6.81		6.41	
3		6.72			6.59		
4							6.44
5			6.67	6.75	6.59		
6			6.69				6.38
7.			6.69	6.75	6.59	6.48	
8		6.74	6.73				6.46
9			6.67	6.77			
10		6.70			6.59	6.34	
11	6.90						
12			6.67	6.78	6.59	6.45	
13	6.74		6.77				
14				6.83		6.44	
15	6.81	6.67	6.78				
16				6.78		6.37	
17	6.83	6.81	6.75		6.65		
18							
19			6.75	6.77	6.72		
20	6.78						
21		6.81	6.77			6.41	
22			6.77		6.67		
23				6.77		6.50	
24	6.78	6.77	6.77		6.59		
25							
26		6.64		6.75	6.59		
27	6.77		6.77				
28				6.66		6.48	
29	6.91		6.75		6.50		
30	6.85					6.48	
31	6.72		6.77		6.57		
Mean Sec. Feet	6.81	6.73	6.73	6.77	6.60	6.44	6.43
Total Acre Feet	419	400	414	403	406	396	383

Total Acre Feet 7 Mo. Period: 2820

TABLE 11

Miscellaneous Discharge Measurements of
Various Springs

Date	Name of Spring	Discharge In Cu. Ft. Per Sec.	Measured By
- - 1908	Beaughan Spring	8.28	Harvey Sarter
July 23, 1924		7.12	H. Smitherum
May 28, 1931		6.12	A. S. Wheeler
Aug. 4, 1932		5.70	A. S. Wheeler
May 14, 1934		5.57	H. Smitherum
Unknown	Carrick Spring	6.06	Measurement in Decker V. Carrick
July 15, 1922		6.97	P. Beck
June 1, 1923		7.00	H. Smitherum
June 14, 1924		6.82	H. Smitherum
Aug. 23, 1924		6.72	H. Smitherum
1934		5.77	H. Smitherum (Mean of 28 Measurements)
June 6, 1922	Big Springs	44.0	P. Beck
June 21, 1922		45.7	P. Beck
May 7, 1923		48.4	H. Smitherum
Sept. 4, 1923		48.8	H. Smitherum
Aug. 7, 1927		40.9	John Wall
June 13, 1928		44.0	J. A. Beemer
Oct. 11, 1928		39.1	Wall and Beemer
May 9, 1929		43.3	H. Smitherum
1934		34.3	H. Smitherum (Mean of 16 Measurements)
Unknown	Cleland Springs	11.6	Authority F. S. Terwilliger
July 27, 1922		8.75	P. Beck
June 13, 1924		8.15	H. Smitherum
July 18, 1924		8.00	H. Smitherum
Aug. 3, 1926		7.28	H. Smitherum
1928		8.6	Little Shasta River Water Master Rpt.
1929		8.3	-do-
1930		7.7	-do-
1931		7.4	-do-
1932		7.4	-do-
1933		7.36	-do-
1934		6.68	H. Smitherum (Mean of 72 Measurements)

TABLE 12

Measuring Devices on Ditches in Shasta River Water Master District

1934 Season

Section of Stream	Name of Ditch	Measuring Device: Type	Measuring Device: Length Of Crest in Feet	Zero Datum of Gage Reading In Feet
Shasta River Above Confluence With Boles Creek	Hammond-Scott	Rated Section	Staff Gage	——
	Dow Eddy Creek	-do-	-do-	——
	Edson-Foulke Troka	-do-	-do-	——
Shasta River Below Boles Creek and Boles Creek	Rovito	Rectangular Weir	2.0	0.0
	Long Bell	-do-	1.5	0.0
	Salanti South	-do-	2.0	0.0
	Salanti North	-do-	2.0	0.0
	Davidson Upper	-do-	1.5	0.0
	Davidson Lower	-do-	1.5	0.0
	Enos, Chase, & Cavanaugh (1)	-do-	3.0	0.0
	Chase and Cavanaugh (2)	-do-	3.0	0.0
	Cavanaugh (3)	-do-	2.0	0.0
	Cavanaugh Shasta R. West	-do-	3.0	0.0
	Cavanaugh Shasta R. East	-do-	2.0	0.0
	Alexander	-do-	2.0	0.0
	Spada Upper	-do-	2.0	0.0
	Spada Lower	-do-	2.0	0.0
	McMahon Upper	-do-	1.5	0.0
	McMahon Middle	-do-	1.5	0.0
	McMahon Lower	-do-	2.0	0.0
	McMahon Lower Waste	-do-	1.5	0.0
	Arbaugh Ditch	-do-	6.0	0.0
	Mills and Montague Dist.	-do-	6.0	0.0
Shasta River Below Montague Dam	J. L. Jones	-do-	4.0	0.0
	John Soule	-do-	4.0	0.0
	J. W. and Mary L. Dennis	-do-	3.0	0.0
	The McKee Company	-do-	4.0	0.0
	E. S. Terwilliger	-do-	4.0	0.0
Beaughan Creek	Clyde Morris	-do-	1.0	0.0
	Belcastro	-do-	1.0	0.0
	Jackson	-do-	4.0	0.0
	Koppel and Jackson	-do-	2.0	0.0
	Cavanaugh	-do-	2.0	0.0
Carrick Creek	Albee	Parshall Flume	2.0	0.0
	Carrick	-do-	2.0	0.0

TABLE 12 Cont'd

Carrick Creek	W. O. Stone	Rectangular Weir	1.0	0.0
	F. E. Stone	-do-	1.0	0.0
	Stone and Hoy	-do-	2.0	0.0
	Hoy Upper	-do-	1.5	0.0
	Hoy Middle	-do-	1.5	0.0
	Hoy Lower	-do-	1.5	0.0
	Jackson	-do-	2.0	0.0
Parks Creek		Rated		
	Duke North	Section	Staff Gage	—
	Edson-Foulke Parks Creek	-do-	-do-	—
	Duke	-do-	-do-	—
	Montague Parks Creek Canal	-do-	—	—
	Robertson Ranch	Rectangular Weir	8.0	0.0
Big Springs		Rated		
	B. S. I. D.	Pump		
	Stallcup	-do-		
		Rated		
	Louie-Rose	Section		
	Coonrod	-do-		
Lower Shasta River		Rated		
	Salvadori (Ruscombe)	Pump		
	Salvadori (Dunlap)	—		
		Rated		
	Grenada Irrigation District	Pump		
		Rated		
	Foulke-De Soza	Section		
		Rated		
	Edmonds	Pump		
	Hudson & Edmonds Gravity	—		
	Hudson Pump	RatedPump		
	Prather	-do-		
	Webb Brothers	-do-		
	Lewis	—		
	Lemos Slough	—		
	Lemos Upper	RatedPump		
	Lemos Lower	-do-		
		Rated		
	Antonio	Section		
	Flock, Upper	-do-		
Little Shasta River	Harp	Rectangular Weir	1.5	0.0
		Parshall		
	McCurren	Flume	2.0	0.0
	Dimmick	90° Triangular Notch	—	0.0
		Parshall		
	Soule & Terwilliger	Flume	2.0	0.0
	Hart & Haight	-do-	0.5	0.0
	Musgrove & Linton	-do-	3.0	0.0

TABLE 12 Cont'd

Little Shasta River	Babcock, Soule & Martin	Parshall Flume	2.0	0.0	
	Hart, Haight & Prather	-do-	3.0	0.0	
Cleland Springs	Haight, Deter & Kegg	Rectangular Weir	4.0	0.0	
	Terwilliger	Parshall Flume	2.0	0.0	

Sheet 3