

STATE OF IDAHO

C. C. MOORE, GOVERNOR

DEPARTMENT OF RECLAMATION

W. G. SWENDSEN, COMMISSIONER
BOISE

May 18, 1925

Honorable C. C. Moore
Governor of Idaho
Boise, Idaho

My dear Sir:

There is transmitted herewith the annual report of G. Clyde Baldwin, Deputy Commissioner of Reclamation and Watermaster for District 36, Snake River, for the year 1924.

Distribution of irrigation water during that year was most intricate due to the unusual shortage of supply. Notwithstanding this condition, distribution was handled in a most efficient manner and although it was necessary to give more time and take care of more details in the way of observation of deliveries, yet the work was carried on at a cost not materially exceeding that of previous years.

This report contains a vast amount of invaluable data, and I am firmly convinced that the amount of time given to the gathering thereof and to the distribution of the available supply to those to whom it is awarded by decree, is fully justified in the light of results obtained. In addition to parallel information corresponding to previous annual reports, new tabulations are contained herein which cover special features likely to be of considerable value in the future.

The work of Mr. Baldwin is especially commendable and the appreciation which is justly due him is herein expressed.

Respectfully yours,

W. G. Swendsen
Commissioner of Reclamation

STATE OF IDAHO

C. C. MOORE, GOVERNOR

DEPARTMENT OF RECLAMATION

W. G. SWENDSEN, COMMISSIONER

BOISE

Idaho Falls, Idaho
May 14, 1925.

Mr. W. G. Swendsen,
Commissioner of Reclamation,
Boise, Idaho.

Dear Sir:

There is submitted herewith the technical report covering all regular water distribution and hydrometric operations in Water District No. 36 for the irrigation season of 1924.

U. S. Geological Survey methods have been used throughout as a standard for the collection and compilation of hydrometric data. Most of the latter which are included have been recomputed since the close of the irrigation season, and in this, as well as in other respects, the report is similar to and consistent with reports for the five preceding years.

Only incidental reference has been made herein to the work of Thomas R. Newell and to that of the Special Committee of Five, for the reason that specific reports are available covering each of these investigations.

The so-called Normal Flow Fund was continued as a means of financing that portion of the work eventually paid for under the annual Water Master Bill. This fund was maintained during 1924 through the advance of money by the Water Users Protector Association of the North Fork of Snake River and Tributaries, the Farmers Protective Irrigation Association, the Upper Snake River Union of Water Users, the Twin Falls Canal Co. and the North Side Canal Co. Ltd.

Special acknowledgments are due to the North Fork Reservoir Co., the Snake River Valley Irrigation District and the Aberdeen-Springfield Canal Co. for gage readings and to Mr. D. G. Martin, the Utah Power & Light Co., the Upper Snake River Union of Water Users, the U. S. Bureau of Reclamation, the Twin Falls Canal Co., the North Side Canal Co. Ltd., Mr. James Young and the U. S. Indian Irrigation Service for gage readings, results of current meter measurements and other data which were furnished without charge.

The cooperation and assistance so freely given throughout the season by the members of the Water Users Committee of Nine of District No. 36, both as an advisory committee and also as individuals, was very much appreciated.

Much credit should be given to the hydrographers, deputy water masters and other members of the regular organization for the conscientious manner in which their duties were performed and for the willing assistance and hearty cooperation which they so freely rendered.

For valued assistance in the preparation of this report acknowledgment is accorded to C. A. McClelland, to L. L. Bryan and to Mrs. Bessie M. Rees.

Respectfully yours,

Glyde Baldwin
Deputy.

WATER DISTRIBUTION AND HYDROMETRIC WORK

In District No. 36

1924

by G. Clyde Baldwin

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INTRODUCTION

The final report of Consulting Engineer R. I. Meeker with reference to District No. 36 water distribution problems was received by the Water Users Committee of Nine on February 22, 1924 and the conclusions and recommendations contained therein were read in person by Mr. Meeker at the general meeting held in Idaho Falls on March 3. In order to afford additional time for consideration, the latter meeting was adjourned until March 31, 1924 when it was expected that the report would be discussed in greater detail and that definite action would be taken with respect to the acceptance or rejection of its several findings. It was soon apparent, however, that the Committee of Nine could not agree upon any unanimous recommendation concerning this report and since all early season information indicated that 1924 would be a season of deficient water supply the efforts of this committee were directed toward the drafting of a compromise plan or operation schedule for immediate use.

The following program was finally agreed upon and presented at the March 31 meeting as the unanimous report of the Committee of Nine:

"Your committee have to recommend that for the year 1924 water administration of Snake River, Water District No. 36, be had as follows:

I.

Transmission losses for stored water from Jackson to Heise be charged with a transmission loss of 2.5%, and in order to cover lag in transmission of stored water from Moran to Heise stored water shall be released during July and August for natural or direct-flow users in an amount, at such times and under such conditions as the Committee of Nine shall hereafter determine and decide.

II.

That from Heise to Lorenzo bridge a minimum 3% channel transmission loss be charged stored water and when it shall be shown by the "two day mean method" that there is an additional loss in excess of said 3% the natural water users must be credited with the additional amount. It being understood

that a measuring station will be established at or near Lorenzo.

III.

That from Lorenzo to Woodville a loss of 0.5% evaporation loss be charged stored water.

IV.

That from Woodville to Blackfoot a loss of 6% be charged stored water.

V.

The committee recommend that it continue its investigation, being unable at this time to report fully on all matters before them.

VI.

That, to encourage the economical use of water for the year 1924, any canal company shall be permitted to use any available space in the Jackson Lake Reservoir after the beginning of the delivery of stored water, for the storage of such portion of the water then in their respective canals as they may be subsequently entitled, with the right of withdrawal of same from said reservoir as they may desire during said year 1924, under such rules as shall be determined by the Committee of Nine."

After much argument and discussion together with the voting down of counter proposals, which combined to exhaust the time available in both the forenoon and afternoon sessions of the March 31st meeting, the program advanced by the committee was finally unanimously adopted by the water users and the Meeker report was not presented for any further action. Authority was also unanimously accorded the Committee of Nine to incur such expenditures as were in their judgment necessary.

At the earlier meeting on March 3, 1924 G. Clyde Baldwin was re-elected to the position of Water Master of District No. 36 and the Committee of Nine was continued in its advisory capacity.

Subsequent to the adjournment of the general meeting on March 31 the Committee of Nine considered the annual water master budget and approved same in the amount of \$13166.10 as the estimated cost of all regular work properly chargeable against normal flow water users.

Other important matters considered and the action taken are outlined in the following quotations from the minutes of this meeting.

Moved by R. E. Shepherd and duly seconded that all regular district expenditures be divided between stored and normal flow water users on a 40% - 60% basis, respectively, in the same manner followed during 1923. Carried.

Moved by R. E. Shepherd and duly seconded that money be requested advanced to the Normal Flow Fund as required and up to the limit of the budget just approved, in the same manner and in the same relative proportions as in 1923. Carried.

Moved by J. T. Fisher and seconded by R. P. Hansen that Mr. Baldwin renew his bond as Treasurer of the Normal Flow Fund and submit same to the Chairman of the committee. Carried.

Moved by F. A. Banks and seconded by R. P. Hansen that the committee recommend the appointment of G. Clyde Baldwin both as Deputy and Special Deputy Commissioner of Reclamation for Water District No. 36 and that the secretary be directed to advise the Commissioner of Reclamation concerning this action. Unanimously carried.

Moved by R. E. Shepherd and seconded by W. C. Sollenberger that Engineers Cotton, Crandall and Baldwin be designated as a committee to go over the river and submit at the next meeting of the committee a plan for investigations and special work to be undertaken during 1924. Carried.

The following resolution was then unanimously adopted:

WHEREAS, the supply of snow accumulated in the mountains of the Snake River drainage is now understood to be considerably below normal and in consequence a shortage of water available for irrigation is to be later expected, and

WHEREAS, much of the Upper Snake River Valley is known to be underlaid with gravel which, if properly saturated with water, makes an excellent natural storage reservoir,

We, the Committee of Nine of Water District No. 36 recommend to the water users of this section that they begin running water in their canals at the earliest possible date, make the earliest use of same on their lands consistent with good crop practice and in particular run water continuously into all swales and on waste land to the end that the ground water level may be rapidly raised and the utmost possible benefit accrue from this source during any later drouth period."

The next meeting of the Committee of Nine of Water District No. 36 was held at Twin Falls, Idaho on May 14, 1924 and portions of the minutes of the four sessions on that date, are also quoted as follows:

10:00 A.M. Session.

"Watermaster G. Clyde Baldwin stated that the total cost of the R. I. Meeker investigation amounted to \$5492.96. Mr. Baldwin reported that the two new gaging stations recently authorized had been installed, one at Lorenzo and one below the last diversion in the immediate vicinity of Blackfoot, at a total cost of approximately \$2300.00. Mr. Baldwin further reported that canals diverting from the South Fork or Snake River proper, were just beginning to draw large heads of water, although canals diverting from the North Fork had been using water quite extensively for some time.

Mr. Shepherd complained of the damming off of Portneuf River and other channels in the American Falls bottom and further to the ponding of water at American Falls attributable to the installation of flash-boards on the dam of the Idaho Power Company, it being the contention that these things all tended to change natural conditions and interfere to a greater or less extent with the normal flow of Snake River. He further objected to the continued pumping of water by Milner Low Lift Irrigation District, especially in view of the fact that this canal has the youngest right of any of those in the vicinity of the Milner Dam."

2:00 P.M. Session.

"Mr. Neeley, District Manager of the Idaho Power Company was present and stated that the flash-boards installed by his company at American Falls were placed during the month of February and it was his understanding that all storage impounded thereby had been secured before the beginning of any irrigation demand. General discussion of this matter followed and it appeared from the explanation given that no serious damage had resulted from the Power Company's operations."

5:00 P.M. Session.

"The written report of the subcommittee, consisting of Messrs. Baldwin, Cotton and Crandall, which had been previously forwarded to individual committee members, was read.

Moved by W. O. Cotton, seconded by F. A. Miller, that the report of this subcommittee be adopted and the work already done in installing gaging stations in the vicinity of Lorenzo and of Blackfoot be approved. Carried.

Moved by W. O. Cotton, seconded by John E. Kolley, that the expense incurred in installing these two gaging stations be paid, 40 per cent by stored water users and 60 per cent by normal flow users. Carried.

Mr. Baldwin then read individual reports of Messrs. Cotton and Crandall in which additional investigation work was recommended and stated that he concurred with the recommendations of the other two members of the subcommittee with respect to work which should be undertaken in the immediate vicinity of Jackson Lake and on the river between the Idaho-Wyoming state line at Alpine, and the Heise gaging station. Mr. Cotton stated that while he favored the latter work he thought additional investigations should first be made between Jackson Lake and the head of Grand Canyon near Cheney, Wyo. and that if money was not to be available for investigating the entire river from Jackson Lake to Blackfoot, he thought investigations should be undertaken in order, beginning at Jackson Lake."

8:00 P.M. Session.

"Moved by R. E. Shepherd, seconded by W. C. Sollenberger, that W. O. Cotton, E. B. Darlington and G. Clyde Baldwin be appointed as a committee of three to plan and arrange for carrying on an investigation at Jackson Lake during the season of 1924. Carried.

Moved by F. A. Miller, seconded by W. O. Cotton, that the cost of all investigations made on Snake River and in the vicinity of Jackson Lake during the season of 1924 be prorated on a basis of 40 per cent payable by stored water users and 60 per cent payable by normal flow users. John E. Kelley, W. O. Cotton, F. A. Miller and W. C. Sollenberger voted "Yes." R. E. Shepherd, T. M. Baird and E. B. Darlington voted "No." Carried.

Discussion then followed with respect to whether or not investigations should be carried on along the river below Jackson Lake during 1924. In the face of prospective water shortage some opposition was expressed to undertaking further work because of the expenditures involved.

Moved by W. O. Cotton, seconded by John E. Kelley, that the committee approve the renewal of the 1923 contract between the State of Idaho and the U. S. Bureau of Reclamation, acting on behalf of the Jackson Lake Stored Water Users. Carried.

Moved by E. B. Darlington, seconded by R. E. Shepherd, that beginning with the first month after storage reservoirs reached their maximum capacity for the season, stored water expenditures be prorated between the respective reservoirs in proportion to maximum storage available for delivery during the 1924 season. Carried."

The subcommittee authorized to arrange for the 1924 investigation at Jackson Lake met at Idaho Falls on May 19 and employed Thomas R. Newell, a former Hydraulic Engineer in the U. S. Geological Survey, to conduct this work and prepare a report* thereon.

*Segregation of Water Resources, Jackson Lake and Jackson Lake Reservoir, 1924, by Thomas R. Newell.

Except for the modifications indicated in the preceding portion of this report the same general plan under which water distribution and hydrometric work were carried on during 1923 was again effective in 1924. Under this plan all work of both classes is handled from one office in Idaho Falls. The state of Idaho and the U. S. Geological Survey, through a cooperative agreement, provide funds for hydrometric work of a general interest character, the U. S. Indian Irrigation Service pays the actual cost of a small amount of specific work which is done for the benefit of their Fort Hall Project, while all water distribution and hydrometric work conducted primarily for distribution purposes are sustained through funds made available by normal flow and stored water users.

Beginning in 1923 the offices of Water Master and Special Deputy were consolidated, but aside from this the organization and division of work has changed but little since the Idaho Falls office was first established on a permanent basis in May, 1919. Nearly every year, however, changes in transmission loss schedules or other mutually agreed upon departures from previously used methods of delivery have affected to a greater or less extent the operation of the river and the final apportionment of the water. Previous reports of the Special Deputy State Commissioner of Reclamation* describe the changes of this character which have heretofore been made and should therefore be referred to for details not fully outlined herein.

In addition to the work of installing the new gaging stations at Lorenzo and near Blackfoot the usual amount of work of re-establishing stations temporarily discontinued for the winter and securing meter measurements for the fixation of current ratings was accomplished during April and May.

* Water Distribution and Hydrometric Work In District No. 36, 1919; 1920; 1921; 1922 and 1923, by G. Clyde Baldwin.

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Because of the threatened drought conditions river riders and deputy water masters were employed and began work on May 19 or about 13 days earlier than usual. Daily records were initiated at all regular canal stations at this time.

PERSONNEL

The personnel engaged in the work of distribution during the season of 1924 was as follows:

G. Clyde Baldwin	Deputy State Commissioner of Reclamation, Special Deputy in charge of Jackson Lake and Twin Lakes Stored Water Delivery and Water Master of District No. 36.
C. A. McClelland	Hydrographer, Deputy Water Master and Special Deputy in charge of Henrys Lake Stored Water Delivery.
L. L. Bryan	Hydrographer
Frank A. Backman	Hydrographer
Mans H. Coffin, Jr.	Hydrographer
Mrs. Bessie M. Rees	Clerk and office assistant, Idaho Falls office.
Mrs. Wilma Adams	" " " " St. Anthony "
T. W. Luetjen	Deputy Water Master, Upper Fall River division
Ernest Luetjen	" " " St. Anthony division
W. F. Dawson	" " " and Hydrographer, Teton River division
Ira Moore	" " " Heise division
Wm. Sauer	" " " Rigby division
Chas. McCurdy	" " " Idaho Falls division
Delbert Taylor	" " " Blackfoot division
Wm. Burton	" " " Swan Valley canals
Fred J. Anderson	" " " Minidoka Dam
W. M. McConnel	" " " and Hydrographer, Milner Dam
J. M. McGinn	" " " and Gate Tender, Henrys Lake Dam
Joseph Markham	Superintendent, Jackson Lake Dam
Frances Woodburn	Forwarding Agent, Ashton, Idaho

Harold Fuqua, Mrs. Irvin Siepert, Eva Davis, J. A. Clough, E. L. Jennings, A. J. Ayers, T. W. Luetjen, Ira Moore, Mrs. J. F. Johnson and A.M. Anderson, Gage Readers.

DESCRIPTIVE OUTLINE OF 1924 DISTRIBUTION

Beginning with 1919-1920 monthly surveys have since been made from December until April of each winter for the purpose of determining both the depth and water content of the snow on the ground at points selected to represent as nearly as practicable average conditions over the drainage area tributary to Jackson Lake Reservoir. The value of this work, which has been carried on by Joseph Markham under the direction of the Minidoka Project officials of the U. S. Bureau of Reclamation, was clearly demonstrated in 1924. February, March and April reports all showed deficiencies of increasing amount when compared with similar records for the preceding years and this information, coupled with the ordinary data obtainable from the U. S. Weather Bureau which was confirmatory in character, made it possible to warn the water users of the impending shortage very early in the season before any of the spring crops were planted.

Because of these warnings more than the customary amount of water was diverted by upper valley canals during the months of April and May and this resulted in raising the ground water level to an extent which was probably of material benefit later in the season in maintaining the return flow to the river. On the other hand these heavier upstream drafts tended to, temporarily at least, further reduce the supply available for diversion by lower valley canals until, beginning about April 21 and continuing throughout the balance of the season, it was inadequate to supply all demands. This situation, which does not usually exist until about July 1 or even later, would normally require immediate regulation of all diversions and be followed promptly by the cessation of storage at all reservoirs and the cutting off of younger record rights. Coming as it did, however, so early in the season

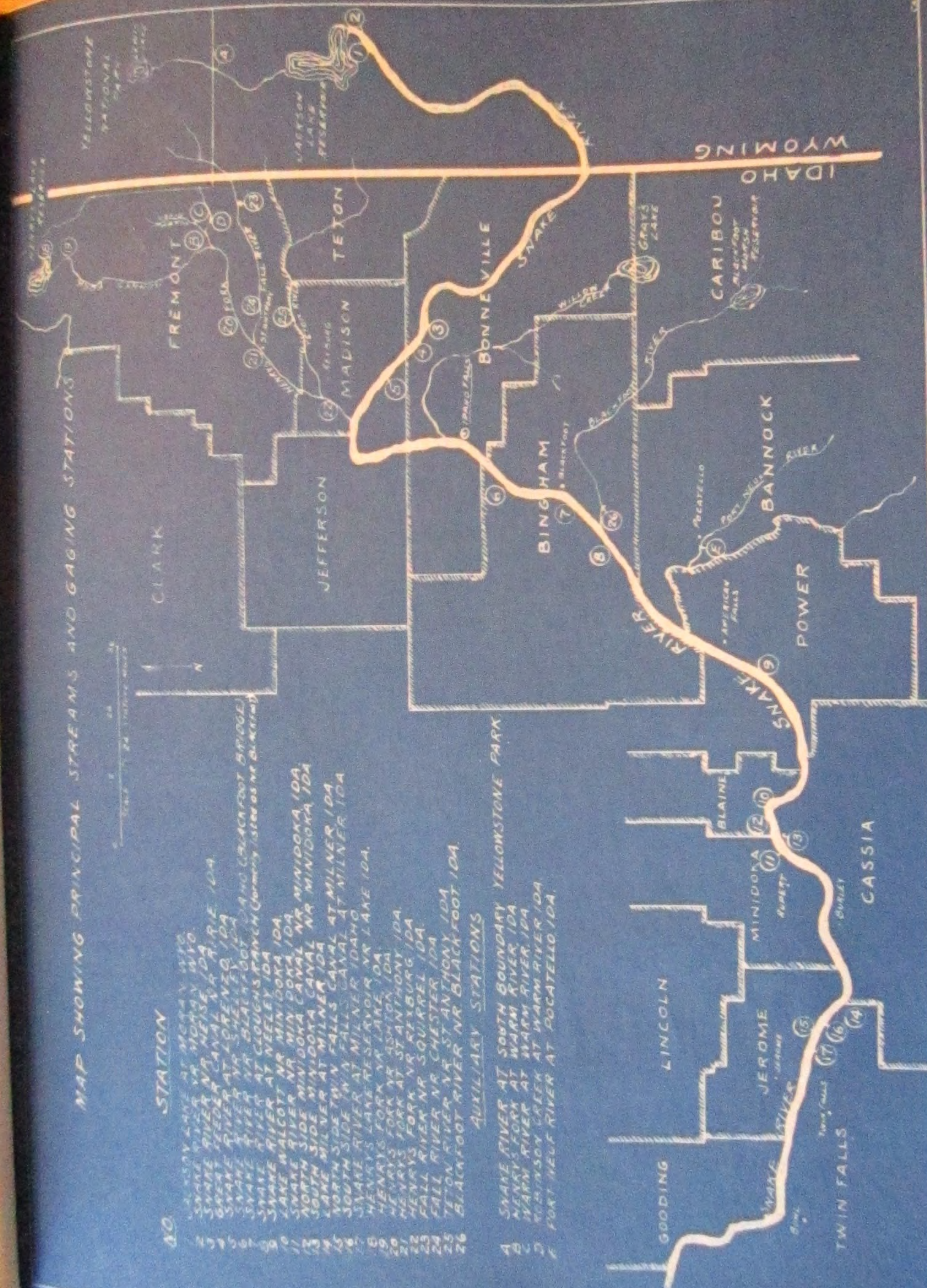
MAP SHOWING PRINCIPAL STREAMS AND GAGING STATIONS

STATION

1. LARSON LAKE AT MORGAN WYO.
2. SNAKE RIVER NR. MORGAN WYO.
3. SNAKE RIVER NR. NEISE, IDA.
4. GREAT FEEDER CANAL NR. FAIRIE, IDA.
5. SNAKE RIVER AT LORENE, IDA.
6. SNAKE RIVER NR. SHELLEY, IDA.
7. SNAKE RIVER NR. BLACKFOOT, IDA.
8. SNAKE RIVER AT CLOUGH'S PAVEN, IDA.
9. SNAKE RIVER AT NEELEY, IDA.
10. SNAKE RIVER AT NEIDOKA, IDA.
11. SNAKE RIVER NR. MINIDOKA, IDA.
12. NORTH SIDE MINIDOKA CANAL NR. MINIDOKA, IDA.
13. SOUTH SIDE MINIDOKA CANAL NR. MINIDOKA, IDA.
14. LAKE MILNER AT MILNER, IDA.
15. NORTH SIDE TWIN FALLS CANAL AT MILNER, IDA.
16. SOUTH SIDE TWIN FALLS CANAL AT MILNER, IDA.
17. SNAKE RIVER AT MILNER, IDA.
18. SNAKE RIVER AT RESERVOIR NR. LAKE, IDA.
19. HENRY'S FORK NR. LANTON, IDA.
20. HENRY'S FORK AT ST. ANTHONY, IDA.
21. HENRY'S FORK NR. REXBURG, IDA.
22. FALL RIVER NR. SQUIRREL, IDA.
23. FALL RIVER NR. CHESTER, IDA.
24. TETON RIVER NR. ST. ANTHONY, IDA.
25. TETON RIVER NR. ST. ANTHONY, IDA.
26. BLACKFOOT RIVER NR. BLACKFOOT, IDA.

AUXILIARY STATIONS

- A. SNAKE RIVER AT SOUTH BOUNDARY YELLOWSTONE PARK
- B. HENRY'S FORK AT WARM RIVER, IDA.
- C. WARM RIVER AT WARM RIVER, IDA.
- D. ROBINSON CREEK AT WARM RIVER, IDA.
- E. FORT NEUF RIVER AT POCAHELLO, IDA.



and long before Jackson Lake Reservoir was even half filled, everyone hoped that the deficiency was only temporary and would soon be relieved by the increased flow which is to be expected in the flood water season.

Lower valley users realized, too, that while any demand for general regulation, with the subsequent order for opening the outlet gates at Jackson Lake which was almost sure to follow very quickly, might aid them temporarily, it would also mean less storage and consequent deficiency in supply during the latter part of the summer when their needs would be relatively much greater. Lake Walcott water was therefore utilized and normal flow draft curtailed in an attempt to make the best of a bad situation.

But increases in river flow did not materialize to the extent necessary to meet the continued growth in requirements and as the run-off prospects reported from the higher drainage areas were still rather discouraging in character, the water master finally took the initiative, started the entire distribution organization work on May 19 and began regulation with an order to cut all canal diversions down to their record rights effective May 22.

When the outlet gates of Jackson Lake Reservoir were shut down on September 27, 1923 the unused storage or holdover amounted to 142,730 acre-feet. These gates were kept closed until May 25, 1924 when they were again opened to allow the passage of normal flow. Actual draft upon storage began May 27 when the total available in the reservoir amounted to only a little over 480,000 acre-feet.

Requests were already on file from a number of upper valley canals, for the storage, in accordance with section VI of the 1924 program as agreed upon at the general water users meeting of March 31 (Page 2 of this report), of part or all of the normal flow to which they were then entitled. At

the same time Minidoka Project officials were very anxious to refill Lake Walcott and bring their power head back to normal. Canals were therefore shut off for exchange about as requested until by June 3 the amount so released exceeded 4800 second-feet.

Under these conditions Lake Walcott rose rapidly and even though the storage being drawn from Jackson Lake was reduced in amount, it became apparent that the former would soon be full. Therefore, if waste of water was to be avoided, either the amount released for exchange must be suddenly and materially cut down or else more water must be held back at Jackson Lake. The latter course seemed to promise a more economic use of water generally, hence, after hastily communicating with most of the members of the Committee of Nine and securing their approval by telephone, reductions were ordered at Moran of such magnitude that for most of the next two weeks normal flow was actually being stored there, although at the same time stored water or its equivalent in released normal flow was still being extensively used by lower valley canals. In other words, while the latter were continuing to reduce their available storage upper valley canals were, during this period, accumulating temporary storage at a more rapid rate.

The total amount impounded at Jackson Lake reached its maximum for the season of 486,930 acre-feet on June 20, following which date continuous depletion was noted throughout the balance of the season.

In addition to the beginning of regulation on May 22, a few of the younger permit and license rights were ordered cut on that date and all other rights of this latter class were cut on or before May 26.

Thereafter decreed rights were regulated in accordance with the following schedule:

June 2	Cut off rights having a priority date subsequent to	Mar. 26, 1903
" 3	" " " " " " " " " " " "	Oct. 11, 1900
" 6	Reinstated rights having a priority date earlier than	Mar. 26, 1903
" 7	" " " " " " " " " " " "	Aug. 31, 1903
" 8	" " " " " " " " " " " "	Oct. 7, 1905
" 11	Cut off rights having a priority date subsequent to	Mar. 26, 1903
" 12	" " " " " " " " " " " "	Oct. 11, 1900
" 17	Reinstated rights having a priority date earlier than	Mar. 26, 1903
" 22	Cut off rights having a priority date subsequent to	Oct. 11, 1900
" 24	" " " " " " " " " " " "	July 9, 1896
" 25	" " " " " " " " " " " "	Mar. 22, 1895
" 26	" " " " " " " " " " " "	Feb. 6, 1895
July 2	" " " " " " " " " " " "	Aug. 18, 1894
" 3	" " " " " " " " " " " "	June 1, 1892
" 4	" " " " " " " " " " " "	Dec. 13, 1891
" 6	" " " " " " " " " " " "	May 31, 1891
" 8	Reinstated rights having a priority date earlier than	June 1, 1892
" 9	" " " " " " " " " " " "	Jan. 9, 1895
" 10	" " " " " " " " " " " "	Feb. 6, 1895
" 12	Cut off rights having a priority date subsequent to	Aug. 18, 1894
" 14	" " " " " " " " " " " "	Apr. 28, 1892
" 15	" " " " " " " " " " " "	Jan. 24, 1891
" 16	" " " " " " " " " " " "	July 12, 1890
" 17	" " " " " " " " " " " "	June 1, 1890
" 18	" " " " " " " " " " " "	July 10, 1889
" 22	Reinstated rights having a priority date earlier than	July 10, 1889
" 23	" " " " " " " " " " " "	July 12, 1890
" 31	Cut off rights having a priority date subsequent to	June 10, 1890
Aug. 1	" " " " " " " " " " " "	July 10, 1889
" 3	" " " " " " " " " " " "	May 11, 1889
" 5	" " " " " " " " " " " "	Apr. 15, 1889
" 9	Reinstated rights having a priority date earlier than	Apr. 15, 1889
" 12	" " " " " " " " " " " "	May 1, 1889
" 15	" " " " " " " " " " " "	May 11, 1889
" 29	Cut off rights having a priority date subsequent to	May 1, 1889
" 31	" " " " " " " " " " " "	Apr. 15, 1889
Sept. 4	Reinstated rights having a priority date earlier than	Apr. 15, 1889
" 5	" " " " " " " " " " " "	May 11, 1889
" 8	" " " " " " " " " " " "	June 3, 1889
" 9	" " " " " " " " " " " "	Mar. 2, 1890
" 10	" " " " " " " " " " " "	June 10, 1890
" 15	Cut off rights having a priority date subsequent to	Mar. 1, 1890
" 16	" " " " " " " " " " " "	July 10, 1889
" 20	" " " " " " " " " " " "	May 11, 1889
" 25	Reinstated rights having a priority date earlier than	July 10, 1889
" 26	" " " " " " " " " " " "	June 10, 1890
" 27	" " " " " " " " " " " "	July 12, 1890
" 29	" " " " " " " " " " " "	Jan. 24, 1891
" 30	Regulation discontinued.	

During the latter part of June the so-called Pooling Committee was created for the purpose of trying to help those canals and districts most in need of water. This assistance was solicited in the form of storage donations and temporary transfer of valid normal flow rights. John Lee, John Kelley, W. O. Cotton, Neal Anderson and J. C. Jacobsen, the personnel of this committee, were quite active in this work throughout the balance of the summer and through their efforts much was accomplished in the saving of crops which must otherwise have been lost.

The exchange of normal flow for Jackson Lake storage, previously mentioned, proved to be unsatisfactory to many of the lower valley water users and resulted in a number of complaints which were heard by the Committee of Nine at meetings held in Burley on July 5 and at Idaho Falls on July 12. At the latter meeting a special committee was selected to investigate, in particular, the effect of this exchange practice on the distribution of water in District No. 36. This committee, consisting of F. A. Miller, W. O. Cotton, F. A. Banks and C. J. Miller, appointed by Chairman Hart and D. G. Martin selected by the State Commissioner of Reclamation, spent nearly a week in the office at Idaho Falls in the study and analysis of these problems before submitting their report to another general Committee of Nine meeting on July 22. The majority report, signed by Messrs. F. A. Miller, W. O. Cotton, F. A. Banks and D. G. Martin, indicated that while the plan permitting this exchange of normal flow for storage was adopted in good faith and had for its object the application and utilization of water in such a way as to secure its best use and conservation, yet in actual practice the results were not altogether equitable to all water users, hence:

"It is therefore recommended as a compromise for this season only, that five (5) per cent be charged to all the water stored by exchange in Jackson Lake Reservoir and credited to owners of storage rights in Jackson Lake Reservoir, both in the upper and lower valley, in proportion to the ownership therein and that the remaining exchanged storage be delivered without further loss to the parties effecting the storage."

This report was finally adopted and governed the subsequent water distribution within the district.

On September 29, with only 2410 acre-feet of unused storage remaining in Jackson Lake Reservoir, the outlet gates were ordered closed sufficiently to hold the water surface in the lake stationary and on October 3, after reports of a general two day storm had been received, the gates were ordered completely closed to begin storage for the 1925 season.

Plate II illustrates graphically the rate at which Jackson Lake Reservoir was filled or drawn down during the period from November 15, 1914 to April 15, 1925, inclusive. All graphs are plotted on the basis of 1919 capacity tables.

WATER SUPPLY

If the comparison of annual run-off at the Moran and Neeley gaging stations, which has been included in the four preceding reports, is extended to include the year ending September 30, 1924, the data may be summarized as follows:

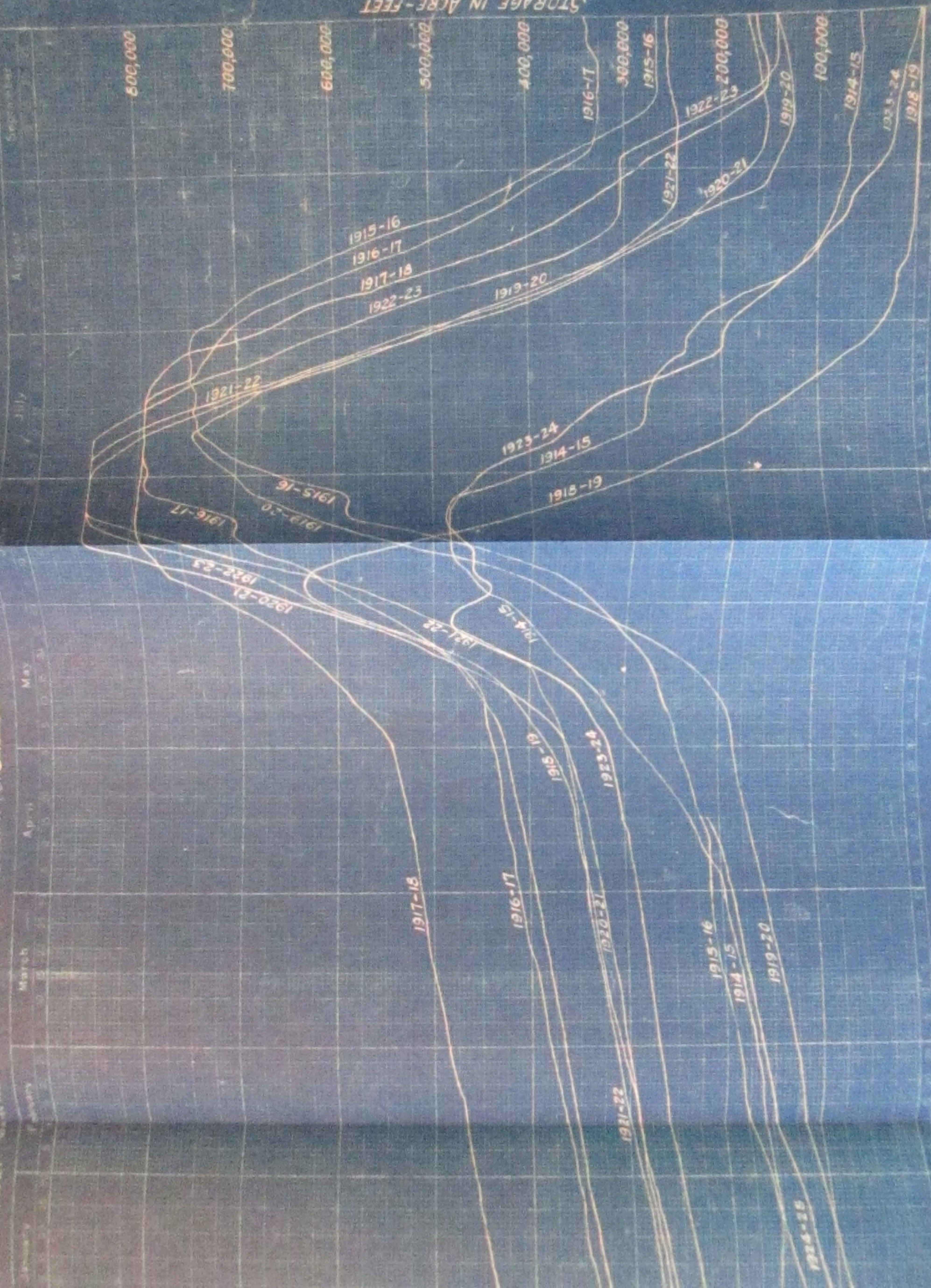
Station	Mean annual run-off for 21 years ending September 30, 1924.	Run-off for year ending September 30, 1924.	% of mean
Moran	1,098,000	647,730	59.0
Neeley	6,619,000	3,900,000	58.9

In this tabulation all Moran records beginning with the year 1910 have been corrected to take account of the storage in Jackson Lake which is held over from one climatic year to another. Neeley records, on the other hand,



STORAGE IN ACRE-FEET

100



have not been subjected to any storage corrections, but represent actual totals measured at the gaging station. Variations in the amount diverted for irrigation as well as in the quantity of inflow entering between the two stations also affect the Neeley comparisons. Since annual run-off comparisons are not necessarily applicable as a true measure of the summer water supply and because of the difficulty encountered in computing any dependable storage and diversion corrections for application to the Neeley record, no attempt has been made to apply such corrections to the 1924 results.

Attention is called to the fact that the total run-off for the year ending September 30, 1924 as measured at these two stations is without exception the lowest of record. This unusual deficiency was noted quite generally, not only on Snake River and its tributaries, but also on many other streams which drain the western slopes of the Rocky Mountains.

The run-off was more evenly distributed and better sustained during the principal irrigation months than was the case in some other years of shortage, notably 1919. For this reason canals depending principally upon a normal flow supply fared better as a rule than was anticipated at the beginning of the summer. Additional information on this subject will be found further on in the text of this report and in the tables on Plate XVIII.

STORAGE VERSUS FLOOD WATER DIVERSIONS

While the 1924 regulation of canals to record rights began slightly before the storage of water under reservoir permits was discontinued, upper valley prescriptive right users presumably realized the benefits which they had previously received through the failure of lower valley canals to demand regulation at an earlier date and in consideration thereof registered no complaints.

DOMESTIC WATER

The following quotation from the minutes of the July 12 meeting of the Committee of Nine will serve to explain the 1924 practice with respect to water for domestic use:

"Mr. Baldwin then explained that while in 1919 small streams of water had been left in many canals for domestic use when they would otherwise have been cut dry, since 1920 this practice had been discontinued. Many canals, however, had head gates of such a character that extra work and expense would be required to shut off all the water and on this account he asked the committee for authority to charge seepage past head gates to the storage account of any canal which was supposed to be shut dry and which still had storage to their credit. He also asked authority in the case of canals which had no storage credit and which should be shut dry under the decree, to incur such extra expense as might be required to accomplish this object and charge same as a special account against the individual canal, provided the canal officers would not of their own accord attend to this work.

Moved by W. C. Sollenberger and seconded by R. E. Shephard that where a canal is no longer entitled to normal flow and cannot be shut dry without extra work, the water master be instructed to charge the water passing down the canal against the storage account of the canal, if one exists, and if no storage remains to the credit of the canal and the canal officials failed to shut off all water after due notice, the water master be authorized to incur such expense as may be necessary to accomplish this purpose and charge same against the individual canal. Motion carried."

Very little storage was available for seasonal sale or rental, but some 200 acre-feet of Jackson Lake water is known to have been leased for the season at the rate of \$2.00 per acre-foot.

The exchange privilege enabled canals diverting from the main river to accumulate a storage credit early in the season in anticipation of their later needs for domestic use or for other purposes.

On Henrys Fork and Fall River where this plan could not well be put into operation, water for domestic or similar use was furnished in a few extreme cases by donations or transfers through the Pooling Committee.

MUNICIPAL WATER RIGHTS

Both St. Anthony and Idaho Falls arranged during 1924 to secure the use of old decreed water rights, through temporary transfers, to the extent necessary to cover all periods when their own rights were invalid.

It is understood that prior to the beginning of another irrigation season St. Anthony will have provided a ground water supply sufficient for that city's requirements.

TEMPORARY TRANSFERS

The recognition of temporary transfers, under which water is shut out of one canal and turned into another upon submission of a written request from the canal having the valid right, was again continued.

During part of the season these transfers were made through the Pooling Committee in which case the water would first be donated to the pool and then delivered under orders from this committee. This method is somewhat more cumbersome in operation, but tends toward a better use of the water.

EXCHANGE OF NORMAL FLOW FOR STORAGE

The authorization for, general account of and review of complaints respecting the exchange of normal flow for Jackson Lake storage have already been described.

The following form letter with attached regulations was approved by the Committee of Nine and served as the basis for each exchange of this character.

Mr. G. Clyde Baldwin,
Deputy State Commissioner of Reclamation,
Idaho Falls, Idaho.

Dear Sir:

The _____ Company desires to release Normal Flow for exchange.

We will reduce the flow through our canal at the officially recognized gaging station to _____ second-feet, at _____ on _____.

You are authorized to hold our canal at this stage from above date until _____ on _____, when the release of Normal Flow for credit is to terminate.

It is understood that the water released by us during this period is to be accepted and delivered in lieu of Jackson Lake storage. It is further understood that the credit thus accumulated is to be repaid to our canal from Jackson Lake storage under ordinary regulations for order and delivery of such storage whenever requested by us, provided our Normal Flow rights at that time are insufficient to fill the demands of our canal.

We understand that should this exchange, as a result of unexpected fluctuations in the river, result in any abnormal wastage of water, credit will not be given, but in such case an attempt will be made to notify us immediately and permission will be given to increase the amount of water diverted in our canal up to the limit of our then valid rights.

Sincerely yours,

_____ Canal Co.
By _____ President
_____ Secretary

REGULATIONS:

- (1) Normal Flow can only be accepted for exchange during periods when Jackson Lake storage is being transmitted down the river.
- (2) Repayments will not be attempted after the service of river riders and deputy water masters has been discontinued for the season.
- (3) Acceptance of Normal Flow for exchange may be suspended immediately upon notice whenever necessary to prevent waste of water.
- (4) The amount of water accepted for exchange shall be the difference between the amount of water actually diverted by the canal during the release period and the amount which would be allowed valid rights, but in no case for computation purposes shall this latter amount exceed the average actual diversion of the canal for the five days immediately preceding the release period.
- (5) Signed agreement similar to above must reach the Special Deputy five days in advance of beginning of exchange.

These regulations are similar to those governing the exchanges completed during previous seasons by canals owning Jackson Lake storage rights, but the practice of previous years proved to be no criterion as to the total amount of water which would be exchanged under the plan when this privilege was extended to all main river canals. In fact, the 1924 actual maximum daily exchange total of 4833 second-feet and the season total of about 243,000 acre-feet proved to be much greater than any advance estimates of these quantities.

Donation of Jackson Lake storage from the pool or from main river canals to those diverting from Henrys Fork or Fall River and to Swan Valley canals involved additional exchanges not materially different in character, since actual deliveries were in such cases made from normal flow while storage was given to other canals in lieu of the normal flow so deducted.

LITIGATION

At the hearing in the court of the Ninth Judicial District at Rigby, Idaho on April 28-29, 1924, wherein the Independent Irrigation Co. sought, in effect, to secure a supplementary decreed water right, Judge Robert M. Terrell who presided, granted a non-suit and charged the costs of the case against the plaintiff Independent Irrigation Co. Appeal from this decision was later taken to the State Supreme Court. (See 1922 and 1923 reports on "Water Distribution and Hydrometric Work in District No. 36" for summary of preceding litigation in this case).

On August 13, 1924 Judge H. F. Ensign, presiding at the time in the court of the Eleventh Judicial District, issued an order fixing September 1 as the date for trial of the action initiated by the Minidoka and Burley Irrigation Districts as Plaintiffs against W. G. Swendsen, Commissioner of Reclamation, G. Clyde Baldwin, Water Master of District No. 36, the members

of the Committee of Nine and about forty upper valley canal companies as defendants. In this action the plaintiff districts claimed to have been injured as a result of the exchanges of normal flow for Jackson Lake storage which were allowed in 1924, sought to have this practice and the allowance of temporary transfers immediately stopped and also asked to have practically all of the stored water then remaining in Jackson Lake Reservoir awarded to them. Conditional upon the filing by the plaintiffs of a \$10,000 bond the judge also granted a restraining order or temporary injunction which required all the defendants to discontinue the exchange and temporary transfer practices complained of and stop delivering storage under these arrangements pending the final hearing of the case on its merits.

This action coming so soon after the Committee of Nine had presumably adjusted the matter of these exchanges for the balance of the season, gave rise to sentiments throughout the upper valley ranging from surprise to intense antagonism towards and charges of bad faith against these two plaintiff irrigation districts.

Unless the court restraining order could be modified at once the whole previously arranged delivery program must be disrupted and many canals which conserved water in good faith during the early part of the season would be deprived of its use at a time when very serious loss, if not absolute failure of crops would surely follow.

Therefore, the defendants, other than W. G. Swendsen, asked for an immediate hearing on the matter of dissolution of the temporary injunction. This request was granted and on August 20-21 the question was argued before Judge Ensign at Hailey, Idaho by S. T. Lowe, representing the plaintiffs, Otto E. McCutcheon, Harry Holden and Douglas Mote for the defendants and Edward A. Walters as a friend of the court.

On the next day, August 22, an order dissolving the temporary injunction was issued by the court.

Thereafter, the final trial of the case was several times postponed and now seems to have been permanently abandoned.

CANAL DELIVERIES

The total amount diverted daily through each canal heading either in the south fork or main river during the period from May 19 to September 30, 1924 is shown on Plates III, IV, V, VI and VII.

Following the practice inaugurated in the 1919 report, except for a few of the smaller canals where estimates were used, all data were recomputed prior to their presentation herein. This practice affords opportunity to more thoroughly analyze the records at each station than is possible in the limited time available during the field season. Wherever changes in rating have been noted, either because of the growth of vegetation, variation of checks or for any other reason, all meter measurements, notes and other data have been carefully reviewed to the end that the final computed data may represent the most reasonable interpretation of these changes, particularly as regards time. On days when more than one stage has been observed mean discharges have been recorded. Daily summaries showing the total diversions between river gaging stations have also been included.

River riders were employed continuously throughout the entire period of record so, with a very few exceptions, daily readings were secured at each station.

The Bramwell-Ellis canal was not discovered until June, hence does not appear at all on Plate III. Records are included beginning June 1, but due to irregular visitation, changes in headgates, gages, etc. the data for this canal are probably but little better than estimates.

DAILY DISCHARGE IN SECOND FEET OF CANALS DIVERTING FROM SNAKE RIVER FOR MAY 1924

NAME OF CANYON	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
CLAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
CLAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
CLAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
CLAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
CLAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
CLAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
CLAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
CLAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
CLAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
CLAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
CLAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
CLAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
CLAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
CLAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
CLAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
CLAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
CLAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61																																							

DAY 15 - WASH IN SECOND FEET OF CANALS DIVERTING FROM SNAKE RIVER FOR AUGUST 1924

[illegible]

The Morgan and Rostan Canals were supplied from adjacent canal systems during the entire regulation period so have been omitted altogether from the canal summaries.

Laterals which divert from several of the canals above the main gaging stations are, in these tables, in each case included with the flow in the main canal.

The canals are listed by divisions, each of which represents the territory covered by a deputy water master or river rider. The canals of each division in general are shown in down stream order.

RIVER DATA

The extensive tables found on Plates VIII, IX and X summarize data in regard to total flow, normal and stored water segregation, diversions, losses and gains for each section of the river between Jackson Lake and Milner.

These tables are prepared upon the following time interval basis:

Time from Jackson Lake In Hours	Gaging Station	Period used for comparable daily means
0	Jackson Lake and Moran	Day ending at 4 a.m.
24	Heise	Day ending at 4 a.m. 1st day following
28	Lorenzo and Rexburg	Day ending at 8 a.m. 1st day following
42	Woodville	Day ending at 10 p.m. 1st day following
50	Blackfoot Bridge	Day ending at 6 a.m. 2nd day following
54	Blackfoot (Cloughs)	Day ending at 10 a.m. 2nd day following
68	Neeley	Day ending at 12 midnight 2nd day following
92	Minidoka	Day ending at 12 midnight 3rd day following
116	Milner	Day ending at 12 midnight 4th day following

1924 DISTRIBUTION WATER DISTRICT NO 36

[illegible]

DAILY SUMMARY OF DATA AT AND BETWEEN

DATE	DIV HEISE-WOOD			WOOD			WOODVILLE			LOR-WOOD			HEISE-WOODVILLE			DIV WOOD-BLACK			BLACK			BLACKFOOT BRIDGE			WOOD-BLACK		
	TOTAL	STD	NAT	TH. BAL	GAGE	DISCH	STD	NAT	LS STD	LTL	TOTGN	LS STD	LTL	TOTGN	LS STD	LTL	TOTGN	TH. BAL	GAGE	DISCH	STD	NAT	TOTGN	LS STD	LTL	TOTGN	
1924																											
May 19	9263			6364	7.28	7120					756			756	3517		3603	3603		3380			-223			-223	
20	8843			6545	7.25	7020					475			475	3463		3557	3557		3320			-237			-237	
21	8751			6197	7.19	6830					633			633	3501		3329	3329		3070			-259			-259	
22	8420			6237	7.18	6800					563			563	3412		3388	3388		3130			-258			-258	
23	8100			6323	7.22	6920					597			597	3292		3628	3628		3380			-248			-248	
24	7877			6301	7.22	6920					619			619	3256		3664	3664		3490			-174			-174	
25	7749			5078	6.94	6040					962			962	3131		2709	2709		2770			-139			-139	
26	7364	-473	7837	4849	6.78	5560	473	5087			711			711	3080	-13	3093	2480		2250	457	1793	-230			-230	
27	6829	-1207	8036	7287	7.28	7120	1207	5913			-167			-167	3237	-61	3298	3883		3610	1192	2418	-273			-273	
28	6308	-1793	8101	9247	7.83	8980	1793	7187			-267			-267	3247	-98	3345	5733		5560	1778	3782	-173			-173	
29	5880	-2251	8131	9141	7.97	9470	2578	6892	2		329	12		329	3274	-101	3375	6196		6210	2518	3692	14			14	
30	5331	-2651	7982	9424	8.12	10010	3520	6490	4		586	31		586	3156	-113	3269	6854		6770	3415	3355	-84			-84	
31	5120	-2817	7937	9446	8.17	10190	5317	4873	13		744	91		744	2821	-403	3224	7369		7260	5377	1883	-109			-109	
Jun 1	5120	-2706	7826	9601	8.20	10300	6511	3789	19		699	137		699	2381	-812	3193	7919		7700	6884	816	-219			-219	
2	5061	-2729	7790	9655	8.30	10670	7060	3610	22		1015	157		1015	1602	-1720	3322	9068		8800	8253	547	-268			-268	
3	4594	-2716	7310	10072	8.26	10520	7139	3381	22		448	159		448	1202	-2117	3319	9318		7780	6604	1176	-365			-365	
4	5153	-2423	7576	8683	7.93	9330	4904	4426	13		647	90		647	1185	-2122	3307	8145		6710	4085	2625	-331			-331	
5	5627	-2014	7641	7239	7.61	8210	2227	5983	1		971	8		971	1169	-2119	3288	7041		5330	697	4633	-511			-511	
6	6296	-1328	7624	6631	7.49	7810	-612	8422	-10		1179	-70		1179	1969	-1354	3323	5841		3850	-1082	4932	-261			-261	
7	6550	-1164	7714	5426	7.05	6380	-2071	8451	-16		954	-117		954	2269	-920	3189	4111		3600	-328	3928	-264			-264	
8	6521	-1212	7733	5144	6.97	6140	-1269	7409	-13		996	-90		996	2276	-920	3196	3864		3010	42	2968	-343			-343	
9	6526	-1175	7701	5077	6.94	6040	-443	6483	-8		963	-58		963	2687	-488	3175	3353		2470	1235	1235	-244			-244	
10	6621	-1104	7725	4621	6.80	5620	1104	4516	0		999	0		999	2906	-210	3116	2714		2120	1536	584	-192			-192	
11	5993	-1447	7440	4280	6.67	5230	1447	3783	0		950	0		950	2918	-187	3105	2312		1830	1260	570	-190			-190	
12	5743	-1567	7310	3752	6.52	4800	1134	3666	-2		1048	-15		1048	2780	-206	2986	2020		1620	1612	8	-161			-161	
13	5997	-1526	7523	3368	6.39	4430	1526	2904	0		1062	0		1062	2649	-189	2838	1781		1770	1562	208	-274			-274	
14	5460	-1984	7444	4515	6.51	4770	1328	3442	-3		255	-23		255	2726	-334	3060	2044		2180	1161	1019	-342			-342	
15	5523	-2204	7727	4177	6.53	4830	468	4362	-9		653	-63		653	2308	-767	3075	2522		2540	229	2311	-352			-352	
16	5637	-2084	7721	5062	6.83	5710	-94	5804	-11		648	-79		648	2818	-338	3156	2892		2720	-181	2901	-390			-390	
17	6014	-1719	7733	5240	6.90	5920	-562	6482	-12		680	-83		680	2810	-369	3179	3110		3020	268	2752	-297			-297	
18	6095	-1537	7632	4818	6.78	5560	-635	6195	-11		742	-79		742	2243	-920	3163	3317		2870	576	2294	-373			-373	
19	6296	-1277	7573	4050	6.65	5180	-573	5753	-9		1130	-67		1130	1937	-1186	3123	3243		2500	843	1657	-326			-326	
20	6694	-911	7605	3565	6.49	4710	-295	5005	-6		695	-12		695	1942	-1123	3065	2658		2390	1854	536	-268			-268	
21	6267	-1176	7443	3905	6.45	4600	849	3751	-2		861	0		861	1854	-1075	2929	2466		2240	2126	114	-226			-226	
22	6001	-1187	7188	3459	6.35	4320	1187	3133	0		861	0		861	1854	-1075	2929	2466		2440	2829	-389	-241			-241	
23	6100	-1127	7227	3014	6.26	4090	1558	2532	2		1076	21		1076	1409	-1452	2861	2681		2730	3238	-508	-274			-274	
24	6335	-822	7157	3239	6.24	4030	1574	2456	4		791	45		791	1026	-1871	2897	3004		2200	2601	-401	-435			-435	
25	6820	-292	7112	3594	6.35	4320	1560	2760	6		726	84		726	1685	-1207	2892	2635		2700	2345	355	-337			-337	
26	6708	-250	6958	5118	6.70	5320	2768	2552	13		202	186		202	2283	273	2010	3037		3440	3690	-250	-345			-345	
27	6113	-870	6983	6190	6.99	6200	3928	2272	15		10	211		10	2415	2	2413	3785		4200	4041	159	-486			-486	
28	4795	-1980	6775	7253	7.26	7050	4440	2610	12		-203	131		-203	2364	141	2223	4686		4430	4394	36	-502			-502	
29	4513	-2247	6760	6906	7.31	7210	4298	2912	10		304	87		304	2278	-376	2654	4932		3740	3837	-97	-593			-593	
30	4839	-1882	6721	5890	7.12	6600	3683	2917	9		710	96		710	2267	-399	2666	4333		3280	4144	-864	-527			-527	
31	4637	-2144	6781	5939	6.99	6200	4319	1881	11		261	175		261	2393	-90	2483	3807		4030	4225	-195	-543			-543	
Jul 1	4550	-2154	6704	6705	7.31	7210	5305	1905	16		505	314		505	2637	810	1827	4573		4320	4654	-334	-454			-454	
2	4947	-1737	6684	6668	7.37	7410	5781	1629	20		742	307		742	2636	830	1806	4774		5770	5734	36	-338			-338	
3	4647	-1890	6537	7750	7.64	8320	6908	1412	25		570	192		570	2212	808	1404	6108									
4																											

RIVER GAGING STATIONS FROM JACKSON LAKE WYOMING TO MILNER IDAHO

BLACK RIVER		5-M CLOUGH		CLOUGH5			B-C DATE		NEELEY			C-N DATE		LAKE WALCOTT			NS MINC			NS+55 MINCARS MIN			TH BAL	
DISC	BLACK	DISC	BLACK	DISCH	STD	NAT	GAIN	1924	GAGE	DISCH	STD	NAT	GAIN	1924	GAGE	CAPAC FT	DRAFT	GAGE	DISCH	GAGE	DISCH	STD	NAT	TH BAL
0	0	12	12	3350				1924	437	3670			320	1924	4094	49890	429	938	1480	520	935	2415		1684
0	0	12	12	3280				21	508	5510			2230	22	4072	49680	106	940	1490	522	941	2431		3185
0	0	12	12	3040				22	511	5600			2560	23	4091	49570	56	941	1490	523	950	2440		3216
0	0	12	12	3290				23	511	5600			2310	24	4088	49260	156	941	1490	526	953	2443		3313
0	0	12	12	3650				24	527	6070			2420	25	4089	49360	50	933	1470	521	938	2408		3612
0	0	15	15	3650				25	517	5770			2120	26	4075	47880	746	940	1490	523	944	2434		4082
0	0	14	14	2810				26	495	5150			2340	27	4054	45670	1114	935	1480	515	921	2401		3863
0	0	10	10	2270				27	480	4740			2470	28	4050	45240	217	933	1470	516	924	2394		2563
0	0	10	10	3480				28	525	6010			2530	29	4066	46930	348	410	1180	518	930	2110		3552
0	0	18	18	5220				29	575	7600			2380	30	4097	50210	1654	600	709	468	791	1500		4446
0	0	18	18	5990				30	603	8540			2550	31	4139	54720	2274	658	826	452	748	1574		4692
0	0	24	24	6710				31	617	9040			2330	Jun 1	4189	60100	2712	704	923	443	724	1647		4681
0	0	18	18	7240				Jun 1	630	9500			2260	2	4246	66330	3141	702	918	438	711	1629		4730
0	0	18	18	7640				2	640	9870			2230	3	4314	73840	3786	742	1010	442	722	1732		4352
0	0	18	18	8880				3	673	11120			2240	4	4389	82300	4265	774	1080	438	711	1791		5064
0	0	18	18	8880				4	668	10920			2040	5	4443	88550	3151	789	1110	409	638	1748		6021
0	0	15	15	6650				5	636	9720			2010	6	4491	94140	2818	838	1230	456	758	1988		4914
0	0	18	18	6970				6	612	8860			2210	7	4532	99040	2470	870	1310	476	812	2102		4268
0	0	18	18	5240				7	578	7690			2450	8	4558	102170	1578	865	1300	479	820	2120		3992
0	0	14	14	3920				8	547	6690			2770	9	4571	103740	792	863	1290	476	812	2102		3796
0	0	12	12	3670				9	527	6070			2400	10	4572	103860	61	863	1290	476	812	2102		3907
0	0	14	14	3100				10	509	5540			2440	11	4570	103620	121	862	1290	485	837	2127		3534
0	0	10	10	2570				11	488	4960			2390	12	4560	102410	610	860	1280	471	799	2079		3491
0	0	7	7	2200				12	476	4640			2440	13	4541	100130	1149	872	1310	472	802	2112		3677
0	0	0	0	1850				13	466	4380			2530	14	4521	97720	1215	883	1340	472	802	2142		3453
0	0	7	7	1550				14	443	3810			2260	15	4506	95910	913	868	1300	436	706	2006		2717
0	0	6	6	1764				15	453	4060			2340	16	4495	94600	660	867	1300	437	709	2009		2711
0	0	7	7	2150				16	467	4400			2250	17	4477	92510	1054	868	1300	439	714	2014		3440
0	0	10	10	2470				17	475	4610			2140	18	4478	92620	55	869	1310	439	711	2021		2534
0	0	20	20	2660				18	483	4820			2160	19	4491	94140	766	872	1310	441	714	2024		2030
0	0	20	20	2970				19	494	5120			2150	20	4500	95180	524	866	1300	443	714	2014		2582
0	0	18	18	2900				20	488	4960			2060	21	4495	94600	292	850	1260	440	704	1964		3288
0	0	18	18	2530				21	478	4690			2160	22	4496	94720	61	828	1210	441	704	1914		2715
0	0	18	18	2390				22	471	4510			2120	23	4493	94370	176	827	1200	460	748	1948		2738
0	0	18	18	2260				23	462	4280			2020	24	4499	95070	353	820	1190	459	743	1933		1994
0	0	17	17	2390				24	470	4480			2090	25	4505	95790	363	821	1190	450	717	1907		2210
0	0	18	18	2630				25	480	4740			2110	26	4486	93550	1129	841	1240	452	722	1962		3907
0	0	18	18	2200				26	463	4300			2100	27	4465	91110	1230	867	1300	453	724	2024		3506
0	0	16	16	2660				27	469	4460			1800	28	4451	89480	822	878	1330	452	722	2052		3230
0	0	26	26	3466				28	502	5350			1980	29	4445	88780	353	893	1370	468	764	2134		3569
0	0	48	48	4230				29	524	5980			1920	30	4441	88310	237	900	1380	472	775	2155		4062
0	0	11	11	4441				30	536	6350			2070	Jul 1	4440	88200	55	900	1380	473	777	2157		4248
0	0	9	9	3749				31	517	5770			2050	2	4429	86920	645	899	1380	482	802	2182		4233
0	0	6	6	3286				2	503	5370			2090	3	4424	86330	297	912	1420	487	815	2235		3432
0	0	6	6	4036				3	525	6010			2130	4	4428	86800	237	920	1440	492	829	2269		3504
0	0	6	6	4326				4	543	6560			2400	5	4443	88550	382	923	1470	496	840	2280		3398
0	0	4	4	5714				5	568	7360			2020	6	4486	93550	2521	922	1470	497	842	2282		2557

MINIDOKA		N-M DATE		L MIL		PALAT		NSTFCAN		PA + NSTFCAN		SSTF CANAL		MIL LIFT CAN		MIL		MILNER		M-M	
GAGE DISCH	STD	LOSS	NAT	GAGE	1924	GAGE	DISC	GAGE	DISCH	TOTAL	STD	NAT	GAGE	DISCH	STD	NAT	GAGE	DISCH	STD	NAT	GAIN
313	3150	-1566	3400	8.92	170	39	247	344	383	1820	400	9.49	2960	276	95	-188	154	10			198
314	3150	-95	3400	9.10	168	38	256	367	405	702	1818	9.51	2970	289	102	-197	154	10			207
315	3150	-54	3400	9.11	169	38	260	377	415	282	2822	9.51	2970	288	101	-216	155	10			226
316	3150	-13	3400	8.78	172	40	263	385	425	532	3022	9.32	2870	287	100	0	95	155	10		105
317	3150	172	3400	9.05	172	40	269	401	441	532	3022	9.56	3000	290	102	0	103	155	10		113
318	3150	742	3400	9.18	174	41	270	404	445	1157	1123	9.47	2950	H.D.	52	0	107	156	10		117
319	3150	453	3400	9.53	172	40	H.D.	598	638	1157	1123	9.18	2790	DRY	0	0	18	157	11		29
320	3150	-1387	3400	9.90	172	40	7.68	2180	2220	1820	400	9.14	2770	DRY	0	0	104	168	16	0	1056
321	3150	-4818	3400	10.23	171	40	8.10	2480	2520	702	1818	9.14	2770	H.D.	76	0	306	171	17	0	323
322	3150	-794	3400	10.29	172	40	7.93	2500	2540	282	2822	9.14	2770	H.D.	96	0	166	168	16	0	182
323	3150	-872	3400	10.41	172	40	7.82	2450	2490	532	3022	9.14	2770	H.D.	97	0	207	164	14	0	221
324	3150	-575	3400	10.46	172	40	7.50	2300	2340	285	2625	9.14	2770	H.D.	95	0	105	162	13	0	118
325	3150	907	3400	10.52	172	40	7.38	2240	2280	1157	1123	9.14	2770	H.D.	94	0	114	160	12	0	126
326	3150	1954	3400	10.32	175	42	7.05	2090	2132	1781	351	9.20	2800	H.D.	95	0	87	158	11	0	98
327	3150	2867	3400	10.46	175	42	7.02	2070	2112	1775	337	8.90	2630	H.D.	94	0	34	159	12	0	22
328	3150	2091	3400	10.20	175	42	H.D.	697	739	478	261	9.20	2800	H.D.	100	0	671	158	11	0	660
329	3150	504	3400	10.48	163	35	H.D.	310	345	22	367	9.20	2800	H.D.	97	0	378	160	12	0	366
330	3150	370	3400	10.58	175	42	2.50	382	424	24	400	9.21	2800	H.D.	90	0	284	162	13	0	297
331	3150	2940	3400	10.73	175	42	2.34	359	401	1866	2267	9.16	2780	H.D.	93	0	334	163	13	0	347
332	3150	1622	3400	10.76	175	42	2.34	359	401	1866	2267	9.16	2780	H.D.	94	0	185	162	13	0	198
333	3150	2960	3400	10.85	175	42	2.32	364	406	1271	1672	9.10	2740	H.D.	92	0	183	160	12	0	195
334	3150	390	3400	10.88	175	42	2.33	367	409	9	400	9.10	2740	H.D.	88	0	280	160	12	0	292
335	3150	204	3400	10.76	175	42	2.32	364	406	41	365	9.11	2750	H.D.	78	0	227	160	12	0	239
336	3150	250	3400	10.68	175	42	2.26	349	391	24	367	9.11	2750	H.D.	73	0	334	160	12	0	346
337	3150	642	3400	10.64	164	36	2.04	295	331	72	259	9.10	2740	H.D.	74	0	344	159	12	0	356
338	3150	402	3400	10.52	160	34	2.01	288	322	28	294	9.10	2740	H.D.	74	0	305	159	12	0	317
339	3150	299	3400	10.29	158	32	1.97	278	310	71	381	9.07	2730	H.D.	74	0	236	159	12	0	248
340	3150	3400	3400	10.48	160	34	1.98	281	315	85	400	8.67	2510	H.D.	72	0	174	158	11	0	185
341	3150	780	3400	10.62	160	34	1.99	283	317	83	400	8.64	2490	H.D.	73	0	23	159	12	0	11
342	3150	800	3400	10.64	160	34	1.99	283	317	83	400	8.64	2490	H.D.	73	0	260	160	12	0	272
343	3150	730	3400	10.62	160	34	1.98	281	315	85	400	8.66	2500	H.D.	73	0	290	160	12	0	302
344	3150	700	3400	10.68	161	34	1.99	283	317	83	400	8.65	2500	H.D.	73	0	218	160	12	0	230
345	3150	36	2656	10.61	160	34	1.99	283	317	83	400	8.65	2500	H.D.	73	0	190	160	12	0	202
346	3150	226	2154	10.66	160	34	2.29	356	390	5	312	8.27	2270	H.D.	73	0	40	160	12	0	52
347	3150	360	2040	10.69	160	34	H.D.	557	591	137	253	8.00	2120	H.D.	74	0	204	160	12	0	216
348	3150	880	2010	10.30	160	34	7.06	2200	2234	351	240	7.87	2030	H.D.	74	0	295	160	12	0	307
349	3150	2190	2100	10.53	160	34	7.17	2260	2294	1998	236	7.82	2010	H.D.	73	0	1427	160	12	0	1439
350	3150	2400	1760	10.56	160	34	7.21	2270	2304	2097	207	7.89	2040	H.D.	72	0	116	160	12	0	128
351	3150	2340	1910	10.62	160	34	7.23	2280	2314	2089	225	7.87	2030	H.D.	72	0	256	157	11	0	267
352	3150	2470	1780	10.58	H.D.	25	H.D.	2170	2195	1986	209	7.84	2020	H.D.	72	0	166	158	11	0	177
353	3150	1990	1920	10.60	DRY	0	6.39	1900	1900	1674	226	7.67	1930	H.D.	72	0	37	158	11	0	48
354	3150	1670	2030	10.58	DRY	0	6.38	1890	1890	1651	239	7.69	1940	H.D.	71	0	8	157	11	0	3
355	3150	1610	2090	10.54	DRY	0	6.37	1890	1890	1644	246	7.67	1930	H.D.	71	0	201	156	10	0	211
356	3150	1760	1780	10.50	DRY	0	6.40	1900	1900	1667	233	7.68	1940	H.D.	70	0	191	155	10	0	201
357	3150	1540	2240	10.63	H.D.	10	6.38	1890	1900	1636	264	7.64	1920	H.D.	70	0	170	158	11	0	181
358	3150	1930	1590	10.42	172	40	H.D.	1300	1340	1153	187	7.68	1940	H.D.	63	0	110	158	11	0	121
359	3150	1590	1590	10.42	172	40	H.D.	1300	1340	1153	187	7.68	1940	H.D.	63	0	177	156	10	0	167

ALL DISCHARGE QUANTITIES ARE GIVEN IN SECOND FEET UNLESS OTHERWISE NOTED AT TOP OF COLUMN
 MINIDOKA CANAL NORMAL FLOW MAY 29 - JUNE 2 CREDITED TO NORTH SIDE CANAL CO BY SPECIAL ARRANGEMENT
 STORAGE CHARGED MILNER LOW LIFT CANAL CO MAY 25-27 IN ACCORDANCE WITH LEGAL INTERPRETATION OF CONTRACT

1924 DISTRIBUTION WATER DISTRICT NO 36

JACKSON LAKE			MORAN			TWIN LK		DATE		HEISE				MORAN-HEISE				LORENZO		H-L		REXBUR				
DATE	GAGE	CAPAC	FT DR	TA	GAGE	DISCH	STD	NAT	DISC	MON	1924	DISCH	RILEY	STD	TLK	NAT	TOT	GNL	STD	TLK	GN	STD	TLK	STD	TLK	
1924	6466	411910	12820	H.D.	7930	6463	1467	1467	0	5360	16	381	9230	9242	4326	0	4916	3882	111	0	3993	4196	0	130	0	200
Jul 3	30.85	398710	13200	H.D.	8300	6655	1645	1645	14	6314	17	394	9680	9696	5275	14	4407	3382	135	0	3517	5117	14	158	0	195
4	30.26	398710	12900	H.D.	8330	6504	1826	1826	17	7617	18	430	10940	10962	6567	17	4378	3345	168	0	3513	6370	16	197	1	190
5	49.68	385810	10410	H.D.	7130	5248	1882	1882	18	8267	19	443	11410	11433	7256	16	4161	3166	186	1	3353	7038	16	218	0	223
6	49.21	375400	6400	H.D.	5170	3227	1943	1943	19	8796	20	462	12110	12131	7610	16	4505	3335	195	0	3530	7382	15	228	1	245
7	48.32	369000	4830	H.D.	4070	2435	1635	1635	20	7835	21	452	11740	11763	5997	14	5752	3928	154	1	4083	5817	14	180	0	250
8	48.70	364170	5480	H.D.	4090	2763	1327	1327	21	7324	22	431	10980	10998	5963	14	5021	3674	153	0	3827	5784	13	179	1	257
9	48.45	358690	5920	H.D.	4060	2985	1075	1075	22	7104	23	420	10580	10596	6017	13	4566	3492	154	1	3647	5837	13	180	0	246
10	48.18	352770	6120	H.D.	4060	3086	974	974	23	7015	24	413	10340	10355	6046	15	4294	3340	155	0	3495	5865	14	181	1	247
11	47.90	346650	6080	H.D.	4060	3065	995	995	24	5045	25	379	9170	9187	4055	14	5118	4142	104	1	4247	3933	14	122	0	245
12	47.62	340570	7370	H.D.	4960	4038	922	922	25	5275	26	308	6920	6928	1967	15	4946	4133	50	0	4183	1908	14	59	1	237
13	47.28	333200	8010	H.D.	4960	4038	922	922	26	1614	27	268	5760	5765	875	14	4876	4151	22	0	4173	849	14	26	0	227
14	46.91	325190	8800	H.D.	5360	4437	923	923	27	1153	28	237	4930	4933	487	12	4434	3780	12	1	3793	472	11	15	1	220
15	46.50	316390	10730	H.D.	6300	5410	890	890	28	1153	29	229	4720	4720	585	13	4122	3567	15	0	3582	567	13	18	0	212
16	46.00	305660	13360	H.D.	7600	6735	865	865	29	1381	30	227	4680	4680	875	11	3794	3299	22	0	3321	829	10	46	1	197
17	45.37	292300	14760	H.D.	8250	7442	808	808	30	1153	31	244	5060	5060	1657	8	3395	2811	42	1	2854	1568	8	89	0	195
18	44.67	277540	15480	H.D.	8780	7805	975	975	31	1153	32	237	5790	5790	2335	9	3446	2861	60	0	2921	2237	9	98	0	197
19	43.93	262060	12200	H.D.	7820	6151	1669	1669	32	1153	33	229	6295	6295	2718	9	3568	2986	70	0	3056	2620	8	98	1	205
20	43.34	249860	12130	H.D.	7310	6116	1194	1194	33	1153	34	227	6431	6431	2875	8	3548	3013	74	0	3087	2720	8	155	0	232
21	42.75	237730	12240	H.D.	7090	6171	919	919	34	1153	35	227	6740	6740	3003	35	3726	3288	80	0	3247	2825	5	286	1	262
22	42.15	225490	12300	H.D.	7000	6201	799	799	35	1153	36	227	6920	6920	3111	6	3586	3167	80	0	3247	2825	5	286	1	262
23	41.54	213190	12300	H.D.	5030	4159	871	871	36	1153	37	227	6920	6920	3111	6	3586	3167	80	0	3247	2825	5	286	1	262
24	41.13	204940	8250	H.D.	5030	4159	871	871	37	1153	38	227	6920	6920	3111	6	3586	3167	80	0	3247	2825	5	286	1	262
25	40.93	200940	4000	H.D.	2780	2017	763	763	38	1153	39	227	6920	6920	3111	6	3586	3167	80	0	3247	2825	5	286	1	262
26	40.84	199160	1780	H.D.	1600	897	703	703	39	1153	40	227	6920	6920	3111	6	3586	3167	80	0	3247	2825	5	286	1	262
27	40.79	198170	990	H.D.	1140	499	641	641	40	1153	41	227	6920	6920	3111	6	3586	3167	80	0	3247	2825	5	286	1	262
28	40.73	196980	1190	H.D.	1140	600	540	540	41	1153	42	227	6920	6920	3111	6	3586	3167	80	0	3247	2825	5	286	1	262
29	40.64	195200	1780	H.D.	1370	897	473	473	42	1153	43	227	6920	6920	3111	6	3586	3167	80	0	3247	2825	5	286	1	262
30	40.47	191830	3370	H.D.	2240	1699	541	541	43	1153	44	227	6920	6920	3111	6	3586	3167	80	0	3247	2825	5	286	1	262
31	40.23	187080	4750	H.D.	2920	2395	525	525	44	1153	45	227	6920	6920	3111	6	3586	3167	80	0	3247	2825	5	286	1	262
Aug 1	39.95	181550	5530	H.D.	3300	2788	512	512	45	1153	46	227	6920	6920	3111	6	3586	3167	80	0	3247	2825	5	286	1	262
2	39.65	175700	5850	H.D.	3410	2949	461	461	46	1153	47	227	6920	6920	3111	6	3586	3167	80	0	3247	2825	5	286	1	262
3	39.27	168300	7400	H.D.	4120	3731	389	389	47	1153	48	227	6920	6920	3111	6	3586	3167	80	0	3247	2825	5	286	1	262
4	38.90	161120	7180	H.D.	4020	3620	400	400	48	1153	49	227	6920	6920	3111	6	3586	3167	80	0	3247	2825	5	286	1	262
5	38.55	154410	6710	H.D.	3760	3383	377	377	49	1153	50	227	6920	6920	3111	6	3586	3167	80	0	3247	2825	5	286	1	262
6	38.22	148080	6330	H.D.	3530	3191	339	339	50	1153	51	227	6920	6920	3111	6	3586	3167	80	0	3247	2825	5	286	1	262
7	37.90	141970	6110	H.D.	3440	3080	360	360	51	1153	52	227	6920	6920	3111	6</										

TIN	MINIDOKA			N-M DATE		PA LAT	NSTFCAN PA + NSTFCANS			55TF CANAL				MILL LIFT CAN				MILNER				M-M				
	GAGE	DISCH	STD	NAT	LOSS		GAGE	DISCH	TOTAL	STD	NAT	GAGE	DISCH	STD	NAT	GAGE	DISC	STD	NAT	GAGE	DISCH		STD	NAT		
1894	493	2400	540	1860	478	10.37	172	40	231	364	404	185	219	768	1940	299	1641	233	72	0	16	154	10	10	0	26
2578	493	2400	540	1860	478	10.37	172	40	231	364	404	185	219	768	1940	299	1641	233	72	0	16	154	10	10	0	26
2583	482	2240	530	1710	343	9.10.50	185	48	243	395	443	242	201	766	1930	421	1509	233	72	0	205	156	10	10	0	215
2451	504	2570	55	2625	1881	10.10.63	197	55	287	517	572	263	309	H.D.	2500	184	2316	232	71	0	573	158	11	11	0	584
2818	563	3640	240	3400	1174	11.10.64	185	48	261	439	487	87	400	964	2970	30	3000	232	71	0	112	160	12	12	0	100
1539	542	3230	170	3400	1309	12.10.55	172	40	229	346	386	14	400	938	2820	180	3000	234	72	0	48	160	12	12	0	60
3442	531	3030	228	2802	412	13.10.70	172	40	232	354	394	64	330	H.D.	2420	52	2472	234	72	0	144	159	12	12	0	132
2907	502	2540	290	2830	367	14.10.78	172	40	232	354	394	61	333	779	1990	507	2497	232	71	0	85	163	13	13	0	72
3310	495	2430	60	2490	880	15.10.72	172	40	232	354	394	101	293	778	1990	207	2197	230	70	0	24	160	12	12	0	36
2489	490	2360	70	2430	129	16.10.78	172	40	234	359	399	113	286	780	2000	144	2144	230	70	0	109	161	12	12	0	121
2117	485	2280	210	2490	163	17.10.78	172	40	234	359	399	106	293	782	2010	187	2197	234	72	0	201	162	13	13	0	21
2493	487	2310	90	2400	183	18.10.72	172	40	234	359	399	117	282	778	1990	128	2118	190	51	0	130	160	12	12	0	142
2342	488	2320	30	2350	22	19.10.85	172	40	236	364	404	128	276	779	1990	84	2074	171	42	0	116	161	12	12	0	128
2642	478	2180	100	2280	462	20.10.42	172	40	232	354	394	126	268	780	2000	12	2012	178	45	0	259	160	12	12	0	271
1902	478	2180	320	2500	278	21.10.77	172	40	235	362	402	108	294	781	2000	206	2206	174	43	0	265	161	12	12	0	277
1053	472	2100	540	2640	1047	22.10.65	H.D.	30	238	369	399	88	311	780	2000	329	2329	176	43	0	342	160	12	12	0	354
2086	500	2510	270	2240	424	23.10.70	DRY	0	682	1950	1950	1692	258	780	2000	68	1932	198	53	0	292	160	12	12	0	1304
3465	569	3760	1570	2190	295	24.10.73	DRY	0	685	1970	1970	1702	268	765	1920	92	2012	198	52	0	282	162	13	13	0	256
3888	564	3660	1380	2280	228	25.10.66	DRY	0	688	1980	1980	1740	240	759	1900	100	1800	198	52	0	312	161	12	12	0	295
3712	562	3620	1580	2040	92	26.10.58	DRY	0	702	2050	2060	1775	285	761	1900	235	2135	200	53	0	373	160	12	12	0	324
4035	563	3640	1220	2420	395	27.10.58	H.D.	10	768	2360	2400	2155	245	761	1900	65	1835	198	52	0	342	159	12	12	0	385
4363	581	4010	1930	2080	353	28.10.52	172	40	768	2360	2400	2129	271	759	1900	129	2029	199	53	0	233	158	11	11	0	354
5300	586	4120	1820	2300	1180	29.10.50	172	40	768	2360	2400	2129	271	759	1900	129	2029	199	53	0	252	158	11	11	0	244
4518	584	4070	1530	2540	448	30.10.40	172	40	762	2330	2370	2071	299	760	1900	341	2241	198	52	0	252	158	11	11	0	265
3666	575	3880	1212	2668	214	31.10.26	171	40	H.D.	1140	1180	866	314	760	1900	454	2354	198	52	0	748	158	11	11	0	737
2724	473	2110	745	2855	614	Aug 1	172	40	245	369	409	73	336	767	1930	589	2519	200	53	0	282	157	11	11	0	293
1971	472	2100	420	2520	129	2.10.07	172	40	275	450	490	194	296	771	1950	274	2224	197	52	0	392	157	11	11	0	403
2503	470	2070	637	2707	433	3.9.96	172	40	276	452	492	174	318	772	1960	429	2389	203	51	0	493	157	11	11	0	444
1957	470	2070	386	2456	113	4.9.84	172	40	254	393	433	144	289	772	1960	207	2167	204	51	0	374	157	11	11	0	385
1973	471	2090	470	2560	117	5.9.82	166	37	196	242	279	22	301	771	1950	309	2259	205	52	0	191	157	11	11	0	202
2049	472	2100	458	2558	51	6.9.85	160	34	183	214	248	53	301	820	2190	67	2257	206	52	0	390	157	11	11	0	401
2403	489	2340	214	2534	63	7.9.75	160	34	182	212	246	54	300	842	2310	56	2254	206	52	0	268	157	11	11	0	279
2199	492	2380	159	2539	181	8.9.84	160	34	184	216	250	49	299	841	2310	70	2240	205	52	0	232	159	12	12	0	244
2502	489	2340	281	2621	162	9.9.86	160	34	187	222	256	52	308	841	2320	7	2313	204	51	0	237	159	12	12	0	299
2221	492	2380	13	2393	159	10.9.82	H.D.	17	195	240	257	25	282	869	2470	359	2111	203	51	0	398	158	11	11	0	409
2393	502	2540	84	2456	147	11.9.74	DRY	0	197	244	244	45	289	880	2520	353	2167	205	52	0	276	160	12	12	0	288
2375	501	2520	52	2468	145	12.9.72	DRY	0	194	237	237	53	290	879	2520	342	2178	207	53	0	290	157	11	11	0	301
2162	503	2550	101	2651	388	13.9.67	DRY	0	192	233	233	79	312	912	2710	371	2339	203	51	0	444	154	10	10	0	454
3746	516	2770	204	2566	976	14.9.44	DRY	0	192	233	233	69	302	926	2790	526	2264	207	53	0	306	154	10	10	0	316
2641	517	2780	329	2451	139	15.9.52	150	28	204	242	270	18	288	924	2780	617	2163	203	51	0	321	155	10	10	0	327
2854	514	2730	120	2610	124	16.9.36	150	28	214	265	293	14	307	925	2790	487	2303	204	51	0	444	155	10	10	0	414
2754	519	2820	385	2435	66	17.9.35	150	28	212	260	288	2	286	924	2780	631	2149	207	52	0	300	155	10	10	0	310
2920	517	2780	196	2584	140	18.9.24	150	28	212	260	288	16	304	925	2790	510	2280	211	53	0	351	155	10	10	0	361
2756	515	2750	145	2605	6	19.9.07	150	28	210	256	284	22	306	925	2790	491	2299	206	51	0	375	154	10	10	0	385
2563	509	2650	125	2																						

ALL DISCHARGE QUANTITIES ARE GIVEN IN SECOND FEET UNLESS OTHERWISE NOTED AT TOP OF COLUMN

1924 DISTRIBUTION WATER DISTRICT NO 36

DATE	JACKSON LAKE			MORAN			TWIN LK DATE		HEISE						MORAN-HEISE				LORENZO		H-L		REXBURG	
	GAGE	CAPACFT	DRAFT	GAGE	DISCH	STD	NAT	DISC	† MORAN	1924	† RILEY	STD	TLK	NAT	TOT GN	L STD	LT LGN	STD	TLK	L STD	LT LGN	GAGE		DIS
1924 AUG 19	3450	79040	5420	H.D.	3010	2733	277	30	3040	AUG 22	5953	2665	29	3259	2913	68	1	2982	2452	27	213	2	284	9
20	3424	74350	4690	H.D.	2760	2365	395	32	2792	21	5903	2306	31	3566	3111	59	1	3171	2034	27	272	4	283	9
21	3408	71460	2890	H.D.	1770	1457	313	34	1804	22	4819	1420	33	3366	3015	37	1	3053	1269	29	151	4	285	9
22	3394	68940	2520	H.D.	1600	1271	329	35	1635	23	4516	1239	35	3242	2881	32	0	2913	1170	33	69	2	282	9
23	3383	66980	1960	H.D.	1330	988	342	35	1365	24	4112	963	34	3115	2747	25	1	2773	934	33	29	1	288	9
24	3372	65020	1960	H.D.	1330	988	342	35	1365	25	3910	963	34	2913	2545	25	1	2571	934	33	29	1	300	10
25	3359	62700	2320	H.D.	1430	1170	260	35	1465	26	3841	1141	34	2666	2316	29	1	2406	1107	33	34	1	287	9
26	3337	58780	3920	H.D.	2280	1976	304	31	2311	27	4373	1927	30	2416	2062	49	1	2112	1869	29	58	1	303	10
27	3314	54680	4100	H.D.	2350	2067	283	26	2376	28	4897	2015	26	2856	2521	52	0	2573	1955	25	60	1	277	8
28	3290	50420	4260	H.D.	2450	2148	302	21	2471	29	4948	2094	20	2834	2477	54	1	2532	1962	19	132	1	272	8
29	3263	45670	4750	H.D.	2680	2395	285	31	2711	30	5128	2335	30	2763	2417	60	1	2478	2130	27	205	3	274	8
30	3237	41100	4570	H.D.	2520	2304	216	35	2555	31	5159	2246	34	2879	2604	58	1	2663	2057	31	189	3	273	8
31	3214	37050	4050	H.D.	2300	2042	258	35	2335	SEPT 1	4898	1991	35	2872	2563	51	0	2614	1820	32	171	3	268	8
SEPT 1	3193	33370	3680	H.D.	2140	1855	285	31	2171	2	4737	1809	30	2898	2566	46	1	2613	1617	27	192	3	259	7
2	3175	30240	3130	H.D.	1870	1578	292	28	1898	3	4535	1539	27	2969	2637	39	1	2677	1368	24	171	3	260	7
3	3162	27980	2260	H.D.	1420	1139	281	26	1446	4	4023	1111	25	2887	2577	28	1	2606	1010	23	101	2	258	7
4	3150	25890	2090	H.D.	1310	1054	256	21	1331	5	3842	1028	21	2793	2511	26	0	2537	993	20	35	1	285	9
5	3146	25190	700	H.D.	1110	353	757	16	1126	6	3904	944	15	3545	2778	9	1	2788	334	15	10	0	303	10
6	3140	24150	1040	H.D.	915	524	391	19	934	7	3460	511	19	2930	2526	13	0	2539	496	18	15	1	312	11
7	3133	22930	1220	H.D.	917	615	302	20	937	8	3440	600	19	2821	2503	15	1	2519	582	19	18	0	290	9
8	3130	22410	520	H.D.	794	262	532	18	812	9	3480	256	18	3206	2668	6	0	2674	248	17	8	1	277	9
9	3130	22410	0	H.D.	630	0	630	16	646	10	3480	0	15	3465	2834	0	1	2835	0	15	0	0	276	9
10	3130	22410	0	H.D.	581	0	581	13	594	11	3440	0	13	3427	2846	0	0	2846	0	12	0	1	273	8
11	3128	22060	350	H.D.	583	176	407	12	595	12	3380	172	12	3196	2785	4	0	2789	162	11	10	1	268	8
12	3125	21540	520	H.D.	596	262	334	10	606	13	3380	255	10	3115	2774	7	0	2781	239	10	16	0	259	8
13	3120	20670	870	H.D.	740	439	301	9	749	14	3320	428	8	2884	2571	11	1	2583	390	7	38	1	256	8
14	3112	19280	1390	H.D.	966	701	265	8	974	15	3510	683	8	2820	2537	18	0	2555	611	7	72	1	253	7
15	3105	18060	1220	H.D.	848	615	233	8	856	16	3590	600	8	2982	2734	15	0	2749	529	7	71	1	250	7
16	3101	17370	690	H.D.	711	348	363	8	719	17	3400	339	8	3053	2681	9	0	2690	292	7	47	1	248	7
17	3098	16850	520	H.D.	714	262	452	8	722	18	3420	255	8	3157	2698	7	0	2705	229	7	26	1	245	7
18	3093	15990	860	H.D.	713	434	279	8	721	19	3460	423	7	3030	2739	11	1	2751	390	7	33	0	237	7
19	3088	15130	860	H.D.	793	434	359	8	801	20	3530	423	8	3099	2729	11	0	2740	384	7	39	1	254	7
20	3080	13760	1370	H.D.	1020	691	329	8	1028	21	3550	674	8	2868	2522	17	0	2539	603	7	71	1	286	9
21	3070	12040	1720	H.D.	1180	867	313	8	1188	22	3700	845	8	2847	2512	22	0	2534	739	7	106	1	294	10
22	3060	10320	1720	H.D.	1160	867	293	8	1168	23	3790	845	8	2937	2622	22	0	2644	745	7	100	1	281	9
23	3051	8770	1550	H.D.	1090	782	308	8	1098	24	3720	762	8	2950	2622	20	0	2642	677	7	85	1	296	10
24	3042	7220	1550	H.D.	1020	782	238	8	1028	25	3680	762	7	2911	2652	20	1	2673	673	6	89	1	291	9
25	3035	6020	1200	H.D.	958	605	353	7	965	26	3610	590	5	3013	2645	15	0	2660	532	6	58	1	268	8
26	3029	4990	1030	H.D.	904	519	385	5	909	27	3530	506	5	3019	2621	13	0	2634	469	5	37	0	257	7
27	3023	3950	1040	H.D.	855	524	331	5	860	28	3463	511	5	2947	2603	13	0	2616	482	4	29	1	249	7
28	3017	2920	1030	H.D.	819	519	300	2	821	29	3346	506	2	2838	2525	13	0	2538	482	2	24	0	244	7
29	3014	2410	510	H.D.	557	257	300	0	557	30	3268	251	0	3017	2711	6	0	2717	243	0	8	0	241	6
TOTAL		524460				264416					257805					6611			244804		13001			
TOTAL -		- 46610				- 23500					- 22912					- 588			- 22225		- 687			
TOTAL		477850				240916		1470			234893		1433		706724	6023	37		222579		133712314		96	
MEAN															5196									

TOTAL AND MEAN DETERMINATIONS ARE FOR SEASON AND INCLUDE RECORD FROM PLATES

DAILY SUMMARY OF DATA AT AND BETWEEN SN

DIV HEISE-WOOD			WOOD			WOODVILLE			LOR-WOOD			HEISE-WOODVILLE			DIV WOOD-BLACK			BLACK			BLACKFOOT BRIDGE			WOOD-BLACK		
DATE	TOTAL	STD	TL	NAT	TH BAL	GAGE	DISCH	STD	NAT	LS STD	TL	TOTNL	STD	TL	GNAT	TOTAL	STD	NAT	TH BAL	GAGE	DISCH	STD	NAT	TOTNL	STD	NAT
6865	6166	1901	19	4246	699	468	1470	539	931	12	0	77	225	2	998	1084	819	265	386	35	263	298	351	17	368	17
6815	5314	1131	19	4164	1501	464	1430	893	537	10	0	71	282	4	215	1220	794	426	210	11	93	82	199	6	193	6
5742	4759	471	24	4264	983	466	1450	792	658	6	0	46	157	4	628	1055	745	310	395	3	44	41	392	3	389	3
5422	4598	423	27	4148	824	484	1630	741	889	6	0	80	75	2	883	1220	767	453	410	52	24	76	358	2	360	2
5422	4404	288	27	4089	648	482	1610	641	969	5	1	86	34	2	998	1343	782	561	267	9	133	142	258	8	266	8
4920	4284	121	28	4135	636	479	1580	808	772	5	0	94	34	1	979	1357	804	553	223	1	4	3	222	0	222	0
4775	4472	458	28	3986	303	468	1470	643	827	6	0	116	40	1	1208	1222	671	551	248	1	26	27	247	2	249	2
5403	5168	1064	26	4078	235	455	1340	796	544	9	0	110	67	1	1173	1063	599	464	277	0	185	185	277	12	265	12
5776	5166	1440	29	3697	610	446	1260	505	755	10	0	65	70	1	721	977	505	472	283	0	0	0	283	0	283	0
5800	5331	1515	33	3783	469	439	1200	437	763	10	0	73	142	1	874	911	455	456	289	3	17	20	286	1	287	1
5992	5297	1692	32	3573	695	433	1150	427	723	11	0	45	216	3	674	963	423	540	187	9	4	5	178	0	178	0
6016	5008	1650	33	3325	1008	453	1330	397	933	10	1	32	199	4	525	1035	485	550	295	11	83	94	284	5	289	5
5729	4704	1335	32	3337	1025	462	1410	476	934	9	0	38	180	3	568	1162	579	583	248	25	97	122	223	6	229	6
5522	4519	985	31	3503	1003	475	1540	624	916	8	0	53	200	3	740	1169	682	487	371	41	90	131	330	6	336	6
5325	4321	757	31	3533	1004	486	1480	484	1056	7	0	65	178	3	837	1289	700	589	371	66	125	191	189	8	197	8
4803	4235	521	13	3701	568	469	1520	410	1110	5	0	98	40	1	1022	1187	533	654	255	66	116	182	267	7	274	7
4765	4226	578	3	3645	539	473	1610	126	1736	5	0	91	106	2	1020	1225	617	608	333	30	729	759	328	47	375	47
4944	4037	458	8	3571	907	482	1680	117	1563	2	0	70	12	0	715	1252	650	602	358	66	116	182	267	7	274	7
4560	4003	377	14	3612	557	488	1680	203	1357	2	0	112	17	1	1141	1305	279	1026	375	74	152	226	301	10	311	10
4425	4071	376	0	3695	354	477	1560	18	1332	3	0	120	21	0	1227	1248	27	1221	312	62	165	103	250	11	239	11
4392	4043	229	7	3807	349	456	1350	199	1439	1	1	100	9	2	1012	1123	0	1123	227	18	17	1	209	1	208	1
4386	4002	199	5	3798	384	443	1240	199	1439	0	0	85	0	0	856	956	0	956	284	64	122	186	246	8	254	8
4330	3828	130	6	3692	502	441	1220	130	1350	0	0	71	0	1	719	910	0	910	310	83	32	51	169	2	167	2
4243	3742	127	5	3610	501	438	1190	34	1156	1	0	68	11	1	701	938	0	938	252	42	87	45	213	6	207	6
4196	3713	145	6	3562	483	428	1110	93	1017	1	0	62	17	0	644	855	0	855	255	16	90	106	174	6	180	6
4120	3850	484	5	3361	270	413	1000	96	1096	2	0	73	40	1	771	810	0	810	190	5	44	39	150	3	147	3
4296	3958	561	6	3391	338	399	903	47	856	3	0	56	75	1	641	748	0	748	155	0	57	57	146	4	142	4
4360	3937	465	6	3466	423	388	828	61	767	3	0	40	74	1	480	682	0	682	146	0	57	57	146	4	142	4
4160	3915	472	7	3436	245	373	738	181	919	1	0	49	48	1	542	499	0	499	239	0	170	170	239	11	250	11
4165	3910	361	23	3526	255	363	678	133	811	1	0	42	27	1	451	566	0	566	112	8	125	133	104	8	112	8
4166	3760	244	23	3493	406	377	762	144	618	2	0	35	35	0	391	560	0	560	202	12	135	123	190	9	181	9
4320	3610	349	23	3238	710	409	973	33	940	2	0	26	41	1	305	691	0	691	282	31	31	0	251	2	249	2
4512	3757	485	23	3249	755	432	1150	115	1035	3	0	39	74	1	470	838	0	838	312	64	108	44	248	7	241	7
4710	3687	486	24	3177	1023	454	1340	249	1021	4	0	37	110	1	428	1013	0	1013	327	107	234	127	220	15	205	15
4724	3568	407	14	3147	1156	480	1590	334	1256	4	0	43	104	1	539	1298	130	1168	292	183	192	9	109	12	97	12
4740	3463	101	6	3356	1277	483	1620	573	1047	3	0	57	92	1	663	1376	0	1376	404	92	335	243	236	21	215	21
4671	3461	69	0	3392	1210	497	1780	601	1179	3	0	67	61	1	740	1327	0	1327	443	159	565	406	245	36	209	36
4473	3381	67	0	3314	1092	496	1770	462	1308	3	0	76	39	0	803	1119	0	1119	521	206	434	228	237	28	209	28
4320	3444	64	0	3380	876	485	1640	403	1237	2	0	84	31	1	866	1032	0	1032	488	280	379	99	241	24	217	24
4198	3512	24	0	3488	686	473	1520	456	1064	2	0	86	26	0	888	970	0	970	440	265	429	164	223	27	196	27
4047	3499	22	0	3477	548	462	1410	458	952	2	0	77	9	0	788	900	0	900	370	239	431	192	201	27	174	27
3941	3450	0	0	3450	491	447	1270	242	1028	1	0	14	226	0	0	0	0	0	0	193	227	34	177	15	162	15

● ESTIMATED

LAKE RIVER GAGING STATIONS FROM JACKSON LAKE WYOMING TO MILNER IDAHO

STATION	BLACK RIVER	S-M CLOUGH	CLOUGHS			B-C DATE		NEELEY			C-N	DATE	LAKE WALCOTT			NS+SS MIN CAN									
	GAGE DISCH	BLACK CANN	TH	DISCH	STD	NAT	GAIN	1924	GAGE	DISCH	STD	NAT	1924	GAGE	DISCH	GAGE	DISCH	STD	NAT						
3298	4.02	0	35	1.58	164	35	129	129	4.48	3930	1360	2570	3766	4.23	38.06	20050	257	748	1020	388	552	1572	1572		
3282	4.05	1	12	1.58	164	11	153	152	4.33	3570	1000	2570	3406	24	37.94	18850	605	740	1000	378	529	1523	1529		
3241	4.19	2	5	1.50	137	3	134	132	4.14	3140	570	2570	3003	25	37.74	16860	1003	724	967	362	494	1461	1461		
3206	4.06	1	53	1.52	143	0	143	90	4.00	2830	260	2570	2687	26	37.48	14290	1296	705	925	343	453	1378	1378		
3200	4.00	0	9	1.51	140	0	140	131	3.94	2700	130	2570	2560	27	37.34	12900	701	H.O.	608	222	411	1019	1019		
3200	4.00	0	1	1.50	137	0	137	136	3.93	2680	110	2570	2543	28	37.25	12010	449	DRY	0	313	394	394	394		
3200	4.00	0	1	1.49	134	0	134	133	3.90	2620	0	2640	2506	29	37.17	11220	398	DRY	0	302	373	373	373		
3200	4.00	0	1	1.49	134	0	134	133	3.90	2620	0	2620	2486	30	37.08	10330	449	DRY	0	297	365	365	365		
3200	4.21	3	3	1.49	134	0	134	131	3.93	2680	0	2680	2546	31	37.01	9630	353	DRY	0	285	344	344	344		
3200	4.20	2	5	1.49	134	0	134	129	3.92	2660	0	2660	2526	31	36.96	9150	242	DRY	0	278	331	331	331		
3200	4.15	2	11	1.49	134	0	134	123	H.O.	2520	0	2520	2386	2	36.90	8580	287	DRY	0	273	322	322	322		
3200	4.00	0	11	1.48	131	0	131	120	H.O.	2610	0	2610	2479	3	36.91	8680	-	50	DRY	0	271	321	321		
3200	4.02	0	25	1.49	134	0	134	109	H.O.	2530	0	2530	2396	4	36.91	8680	0	H.O.	85	272	322	407	407		
3200	4.00	0	9	1.52	143	0	143	134	H.O.	2450	0	2450	2307	5	36.86	8200	242	2.51	145	269	317	462	462		
3200	4.00	0	41	1.54	150	0	150	109	H.O.	2610	0	2610	2460	6	36.83	7910	146	3.00	206	267	316	522	522		
3200	4.00	0	66	1.59	168	0	168	102	H.O.	2600	0	2600	2432	7	36.76	7250	333	3.31	248	264	311	559	559		
3200	4.12	1	67	1.60	171	0	171	104	H.O.	2590	0	2590	2419	8	36.66	6290	484	3.29	245	255	295	540	540		
3200	4.02	0	30	1.60	171	0	171	141	H.O.	2590	0	2590	2419	9	36.56	5340	479	3.29	245	245	278	523	523		
3200	4.35	4	78	1.65	191	0	191	113	H.O.	2560	0	2560	2369	10	36.50	4770	287	3.30	246	236	266	512	512		
3200	4.37	4	66	1.68	203	0	203	137	H.O.	2640	0	2640	2437	11	36.44	4200	287	3.29	245	232	259	504	504		
3200	4.50	8	26	1.65	191	0	191	165	H.O.	2640	0	2640	2449	12	36.39	3720	242	3.30	246	226	250	496	496		
3200	4.72	16	33	1.66	195	0	195	162	H.O.	2590	0	2590	2395	13	36.34	3240	242	3.30	246	222	245	491	491		
3200	4.70	16	80	1.65	191	0	191	111	H.O.	2800	0	2800	2609	14	36.31	2760	141	3.31	248	220	242	490	490		
3200	4.42	5	88	1.58	164	0	164	76	H.O.	2680	0	2680	2516	15	36.28	2670	146	3.30	246	216	236	482	482		
3200	4.42	5	47	1.56	157	0	157	110	H.O.	2740	0	2740	2583	16	36.20	1910	383	3.30	246	213	232	478	478		
3200	4.42	5	21	1.56	157	0	157	136	H.O.	2690	0	2690	2533	17	36.10	950	484	3.26	241	195	207	448	448		
3200	4.39	5	10	1.55	154	0	154	144	H.O.	2700	0	2700	2546	18	35.85	-	1430	3.25	239	185	193	432	432		
3200	4.39	5	5	1.54	150	0	150	145	H.O.	2560	0	2560	2410	19	35.83	-	1620	3.23	236	173	177	413	413		
3200	4.18	1	1	1.53	146	0	146	145	H.O.	2670	0	2670	2524	20	35.83	-	1620	0	3.28	243	172	177	420	420	
3200	4.34	4	12	1.53	146	0	146	134	H.O.	2580	0	2580	2434	21	35.77	-	2190	287	3.29	245	168	172	417	417	
3200	4.12	1	13	1.55	154	0	154	141	H.O.	2680	0	2680	2526	22	35.85	-	1430	-	383	3.30	246	165	168	414	414
3200	4.65	13	44	1.67	199	0	199	155	H.O.	2780	0	2780	2581	23	35.88	-	1140	-	146	3.74	310	177	184	494	494
3200	5.00	44	108	1.75	234	0	234	126	H.O.	2740	0	2740	2506	24	35.82	-	1720	293	4.02	352	171	177	529	529	
3200	5.10	52	159	1.76	239	0	239	80	H.O.	2790	0	2790	2551	25	35.78	-	2100	192	3.97	344	153	154	498	498	
3200	4.98	42	225	1.71	216	0	216	-	H.O.	2720	0	2720	2504	26	35.83	-	1620	-	242	3.78	346	156	158	504	504
3200	5.00	44	136	1.70	212	0	212	76	H.O.	2780	0	2780	2568	27	35.83	-	1620	0	3.78	346	149	150	496	496	
3200	4.90	36	195	1.70	212	0	212	17	H.O.	2620	0	2620	2403	28	35.85	-	1430	-	36	3.98	346	146	146	492	492
3200	5.00	44	250	1.76	239	0	239	-	H.O.	2890	0	2890	2651	29	35.89	-	1050	-	192	4.01	350	150	151	501	501
3200	5.00	44	324	1.88	301	0	301	-	H.O.	2780	0	2780	2479	30	36.02	-	190	-	625	4.04	354	151	152	506	506
3200	5.05	48	313	2.04	397	0	397	84	H.O.	3010	0	3010	2613	31	36.13	-	1240	-	529	3.99	347	143	142	489	489
3200	5.14	56	295	2.17	488	0	488	193	H.O.	2790	0	2790	2302	2	36.19	-	1810	-	287	4.02	352	149	150	502	502
3200	5.14	75	268	2.21	517	0	517	249	H.O.	2830	0	2830	2313	3	36.23	-	2190	-	192	3.98	346	150	151	497	497
3200	5.14	75	268	2.21	517	0	517	249	H.O.	2830	0	2830	2313	3	36.23	-	2190	-	192	3.98	346	150	151	497	497
3200	5.14	75	268	2.21	517	0	517	249	H.O.	2830	0	2830	2313	3	36.23	-	2190	-	192	3.98	346	150	151	497	497
3200	5.14	75	268	2.21	517	0	517	249	H.O.	2830	0	2830	2313	3	36.23	-	2190	-	192	3.98	346	150	151	497	497
3200	5.14	75	268	2.21	517	0	517	249	H.O.	2830	0	2830	2313	3	36.23	-	2190	-	192	3.98	346	150	151	497	497
3200	5.14	75	268	2.21	517	0	517	249	H.O.	2830	0	2830	2313	3	36.23	-	2190	-	192	3.98	346	150	151	497	497
3200	5.14	75	268	2.21	517	0	517	249	H.O.	2830	0	2830	2313	3	36.23	-	2190	-	192	3.98	346	150	151	497	497
3200	5.14	75	268	2.21	517	0	517	249	H.O.	2830	0	2830	2313	3	36.23	-	2190	-	192	3.98	346	150	151	497	497
3200	5.14	75	268	2.21	517	0	517	249	H.O.	2830	0	2830	2313	3	36.23	-	2190	-	192	3.98	346	150	151	497	497
3200	5.14	75	268	2.21	517	0	517	249	H.O.	2830	0	2830	2313	3	36.23	-	2190	-	192	3.98	346	150	151	497	497
3200	5.14	75	268	2.21	517	0	517	249	H.O.	2830	0	2830	2313	3	36.23	-	2190	-	192	3.98	346	150	151	497	497
3200	5.14	75	268	2.21	517	0	517	249	H.O.	2830	0	2830	2313	3	36.23	-	2190	-	192	3.98	346	150	151	497	497
3200	5.14	75	268	2.21	517	0	517	249	H.O.	2830	0	2830	2313	3	36.23	-	2190	-	192	3.98	346	150	151	497	497
3200	5.14	75	268	2.21	517	0	517	249	H.O.	2830	0	2830	2313	3	36.23	-	2190	-	192	3.98	346	150	151	497	497
3200	5.14	75	268	2.21	517	0	517	249	H.O.	2830	0	2830	2313	3	36.23	-	2190	-	192	3.98	346	150	151	497	497
3200	5.14	75	268	2.21	517	0	517	249	H.O.	2830	0	2830	2313	3	36.23	-	2190	-	192	3.98	346	150	151	497	497
3200	5.14	75	268	2.21	517	0	517	249	H.O.	2830	0	2830	2313	3	36.23	-	2190	-	192	3.98	346	150	151	497	497
3200	5.14	75	268	2.21	517	0	517	249	H.O.	2830	0	2830	2313	3	36.23	-</									

N	MINIDOKA			N-M DATE		L MIL	PA LAT	NSTFCAN PA + NSTFCANS			55TF CANAL			MIL LIFT CAN MIL			MILNER			M-M						
	AL GAGE	DISCH	STD	NAT	LOSS			1924	GAGE	DISC	GAGE	DISCH	TOTAL	STD	NAT	GAGE	DISC	STD	NAT		THRAL GAGE	DISCH	STD	NAT	GAIN	
15	487	2310	-	260	2570	305	8.54	1.52	29	2.31	278	307	5	302	8.22	2240	-	28	2268	2.08	50	50	0	295	0	295
16	487	2340	-	230	2570	306	8.49	1.60	34	2.30	276	310	8	302	8.23	2240	-	28	2268	2.07	50	50	0	268	0	268
17	487	2460	-	110	2570	222	8.60	1.60	34	2.34	285	319	17	302	8.21	2230	-	38	2268	2.05	49	49	0	146	0	146
18	487	2510	-	60	2570	238	8.68	1.60	34	2.48	319	353	51	302	8.23	2240	-	28	2268	2.09	51	51	0	143	0	143
19	487	2480	-	90	2570	298	8.65	1.60	34	2.47	316	350	48	302	8.22	2240	-	28	2268	2.10	51	51	0	170	0	170
20	487	2510	-	60	2570	225	8.54	1.60	34	2.45	312	346	44	302	8.23	2240	-	28	2268	2.12	52	52	0	137	0	137
21	487	2580	-	60	2640	85	8.72	1.60	34	2.45	312	346	35	311	8.22	2240	-	89	2329	2.10	51	51	0	66	0	66
22	487	2600	-	20	2620	104	8.76	1.60	34	2.41	302	336	28	308	8.23	2240	-	72	2312	2.09	51	51	0	36	0	36
23	487	2720	-	40	2680	31	9.00	1.60	34	2.38	295	329	14	315	8.22	2240	-	125	2365	2.13	53	53	0	88	0	88
24	487	2700	-	40	2660	129	9.11	1.60	34	2.37	292	326	13	313	8.22	2240	-	107	2347	H.D.	40	40	0	83	0	83
25	487	2520	-	0	2520	35	9.18	1.60	34	2.35	288	322	26	296	8.22	2240	-	16	2224	DRY	0	0	0	52	0	52
26	487	2240	-	370	2610	1	9.09	H.D.	8	H.D.	1320	1328	479	31807	H.D.	1160	357	803	DRY	0	0	0	258	0	258	
27	487	2320	-	210	2530	197	9.12	DRY	0	6.82	1800	1800	231	798	4.72	717	153	732	DRY	0	0	0	207	0	207	
28	487	2370	-	80	2450	140	9.04	DRY	0	H.D.	1500	1500	288	1788	4.91	792	1303	662	DRY	0	0	0	68	0	68	
29	487	2370	-	240	2610	136	9.35	H.D.	21	2.58	393	414	107	307	H.D.	1980	323	2303	DRY	0	0	0	34	0	34	
30	487	2340	-	260	2600	34	9.08	1.50	28	2.24	307	335	29	306	8.55	2410	116	2294	DRY	0	0	0	415	0	415	
31	487	2480	-	110	2590	54	8.94	1.50	28	2.13	281	309	4	305	8.53	2400	115	2285	DRY	0	0	0	239	0	239	
32	487	2520	-	70	2590	26	8.88	1.48	27	2.11	276	303	2	305	8.52	2390	105	2285	DRY	0	0	0	183	0	183	
33	487	2570	-	10	2560	235	8.94	1.57	32	2.09	272	304	3	301	8.51	2390	131	2259	DRY	0	0	0	134	0	134	
34	487	2520	-	120	2640	97	8.94	1.60	34	2.10	274	308	3	311	8.51	2390	61	2329	DRY	0	0	0	188	0	188	
35	487	2540	-	100	2640	154	8.90	1.60	34	2.13	281	315	4	311	8.52	2390	61	2329	DRY	0	0	0	175	0	175	
36	487	2540	-	50	2590	199	8.86	1.60	34	2.15	285	319	14	305	8.52	2390	105	2285	DRY	0	0	0	179	0	179	
37	487	2420	-	380	2800	31	8.76	1.60	34	2.14	283	317	12	329	8.51	2390	81	2471	DRY	0	0	0	297	0	297	
38	487	2540	-	140	2680	196	8.66	1.60	34	2.13	281	315	0	315	8.50	2380	15	2365	H.D.	22	22	0	181	0	181	
39	487	2550	-	190	2740	95	8.41	H.D.	23	2.17	290	313	9	322	8.47	2370	48	2418	1.67	40	40	0	182	0	182	
40	487	2800	-	110	2690	74	8.58	DRY	0	2.27	314	314	2	316	8.50	2380	6	2374	H.D.	16	16	0	81	0	81	
41	487	2670	-	30	2700	798	8.44	DRY	0	2.26	312	312	6	318	8.49	2380	2	2382	DRY	0	0	0	31	0	31	
42	487	2770	-	210	2560	527	8.64	DRY	0	2.28	316	316	15	301	8.56	2410	151	2259	DRY	0	0	0	34	0	34	
43	487	2650	-	20	2670	400	8.79	DRY	0	2.30	322	322	8	314	8.43	2350	6	2356	DRY	0	0	0	32	0	32	
44	487	2700	-	120	2580	250	9.45	DRY	0	2.32	326	326	22	304	H.D.	1250	1026	2276	DRY	0	0	0	109	0	109	
45	487	2100	-	580	2680	217	9.26	DRY	0	2.28	316	316	1	315	8.31	2280	85	2365	DRY	0	0	0	511	0	511	
46	487	1860	-	920	2780	280	8.98	DRY	0	2.28	316	316	11	327	8.28	2270	183	2453	DRY	0	0	0	736	0	736	
47	487	2540	-	200	2740	36	8.75	DRY	0	2.27	314	314	8	322	8.27	2260	158	2418	DRY	0	0	0	43	0	43	
48	487	2520	-	270	2790	36	8.92	DRY	0	2.27	314	314	14	328	8.27	2260	202	2462	DRY	0	0	0	63	0	63	
49	487	2400	-	320	2720	426	9.10	DRY	0	2.30	322	322	2	320	8.22	2240	160	2400	DRY	0	0	0	172	0	172	
50	487	2430	-	350	2780	146	9.16	DRY	0	2.31	324	324	3	327	8.20	2230	223	2453	DRY							

This schedule for time of transmission is the same as the one adopted for the five preceding years, and while not exactly correct for all stages of the river, it is believed to be fairly representative of average conditions, and on this account was used throughout the entire period of record.

The dates given on these three plates are those which agree most nearly with the midday hour on this schedule, but the discharges for all river stations have been computed from recording gage records and agree exactly with the schedule. The summaries of diversions or canal totals are for the dates indicated on the tables.

Note should be taken of the inclusion of the Blackfoot Bridge record in place of that formerly shown for the Porterville station. Data for these two stations are not, however, directly comparable since the new one is located several miles downstream from the Porterville Bridge. Four or five canals also divert from the river between the two sites.

Only stored water quantities are tabulated for the Lorenzo station. Complete segregation of flow would, in this case, involve consideration of all water by-passed through the Great Feeder and this could hardly be shown satisfactorily without the addition of complicated tables to the already voluminous summary herein presented. Losses and gains between the Heise and Lorenzo stations were computed to determine the amounts deducted throughout the season as storage transmission loss and will be discussed further on in this report.

Storage released from the Emma Matilda and Two Ocean Lake Reservoirs is shown under the heading, Twin Lakes.

SEGREGATION OF FLOW

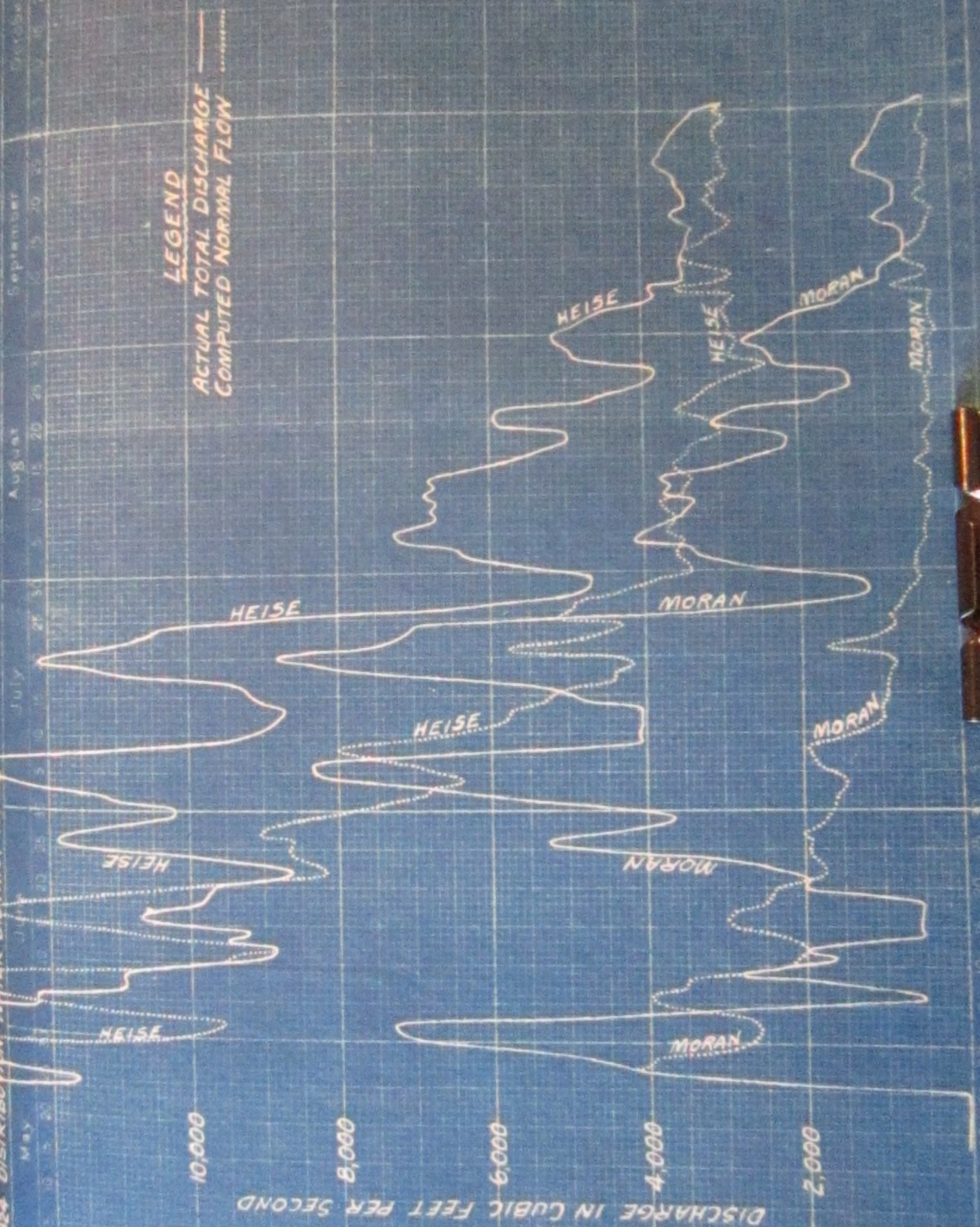
Plate XI shows graphically both the actual total and the computed normal flow past the Moran and Heise gaging stations during the season of 1924. The difference between the total and normal flow graphs on any date of course indicates storage—either impounded or released as the normal flow graph is greater or less respectively, than that indicating total discharge.

These graphs are plotted from the special day discharges with the time interval adjusted to make them coincide with the nearest regular day at Heise. For example, the Heise data shown for July 15 really represent mean quantities for the 24 hour period ending at 4 a.m. on July 16, while the indicated Moran data for July 15 are means for the 24 hour period ending at 4 a.m. on July 15.

While these diagrams are merely a graphical representation of some of the numerical quantities contained in the tables on Plates VIII, IX and X, they will be of interest and perhaps of some assistance in connection with the explanations and discussions which have preceded as well as those which follow.

The irregularities noted in the Heise normal flow after about July 24 are undoubtedly due very largely to the fact that the single time interval used is too short for proper application during the lower river stages which pertained during the balance of the season. The net effect is similar to that usually experienced on rapid changes of river stage and attributed to increments from or loss to adjacent ground water reservoirs depending respectively upon whether the river dropped or rose. In reality such normal flow fluctuations as the sudden rise on July 25-27 and the drops noted on July 31, August 18-19 and August 27 are probably due to variable combinations of the two above mentioned factors with the time interval in this case increasing in relative importance as the river stage diminishes.

HYDROGRAPHS SHOWING TOTAL FLOW AND NORMAL FLOW AT MORAN AND HEISE GAGING STATIONS
 1924 DISTRIBUTION WATER DISTRICT NO 36
 PLATE XI



Because of the extent and irregularity as to time of the normal flow-storage exchanges, which necessitated making corresponding variations in the amount of water released from Jackson Lake Reservoir, total discharge fluctuations during 1924 were somewhat larger and more frequent than usual in an ordinary season.

JACKSON LAKE AND LAKE WALCOTT STORAGE DELIVERIES

The amount of stored water released each day from Jackson Lake was determined from the reservoir capacity tables by noting the quantity corresponding to the daily decrease in stage indicated by the lake gage readings. Occasional irregularities in the latter, attributable to wind effect, were largely eliminated by short period interpolations or adjustments.

This method of determining the proportion of the total daily flow passing the dam and the Moran gaging station, which is stored water, has been in use for several years. Its use assumes a certain balancing of comparatively unknown factors. Normal flow rights should obtain the benefit of such natural storage as would have been created in the old lake during flood periods and they should not be required to stand the extra evaporation loss attributable to the larger flooded area of the present reservoir. On the other hand the storage owners should obtain the benefit of all the additional ground or bank storage which results from the increased elevation of the water surface in the lake.

The primary object of the investigations conducted during 1924 by Thomas R. Newell and for several years previous by employees of the U. S. Bureau of Reclamation was to secure a more accurate segregation between stored water and normal flow at the outlet of the reservoir. The data thus secured indicate that the method just described is not strictly applicable

under all conditions of river flow and reservoir operation, but hardly suffice as yet to warrant the preparation and adoption of any more equitable plan of division.

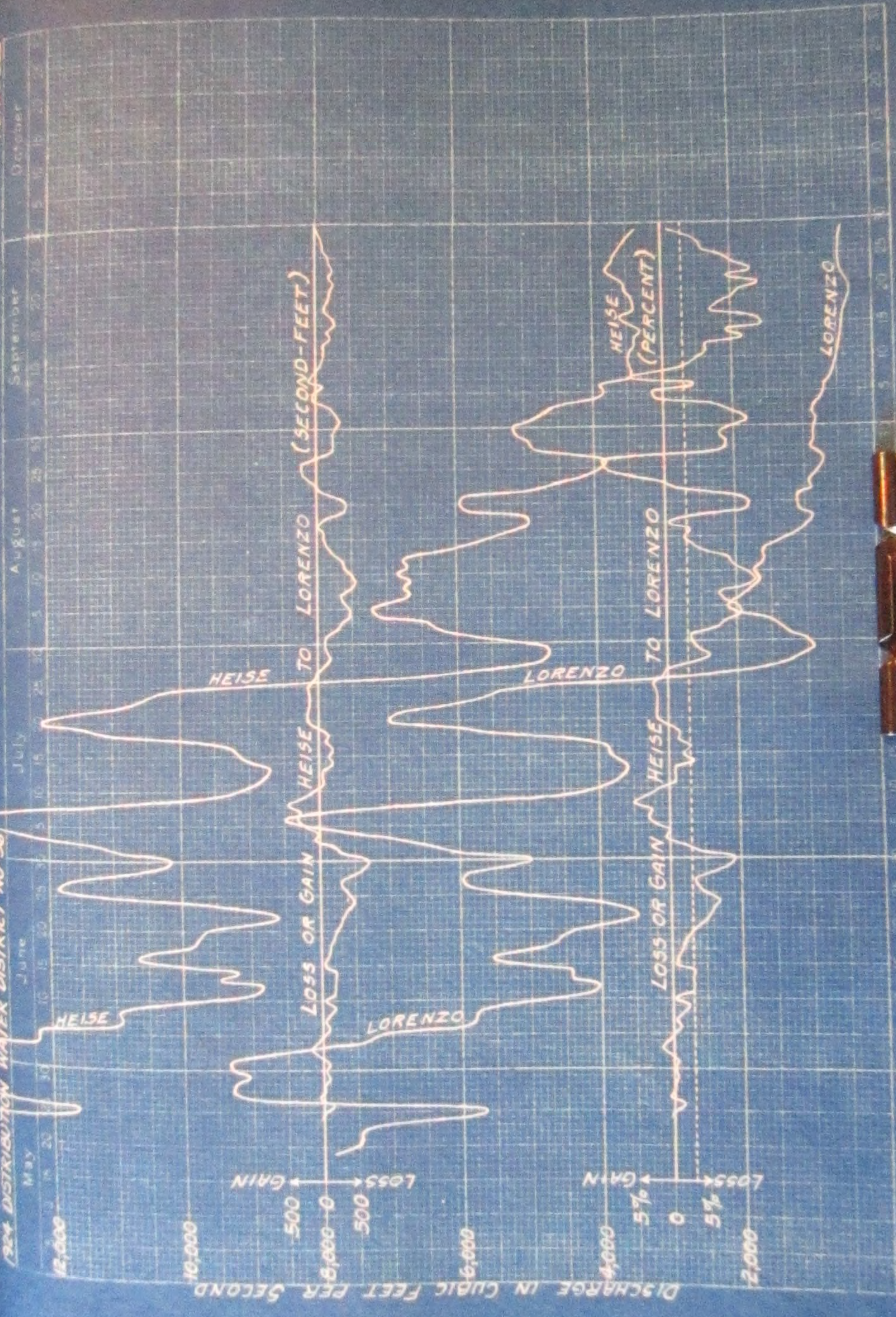
The storage transmission loss schedule agreed upon for 1924 provided for flat percentage deductions of 2.5 per cent between Moran and Heise, 0.5 per cent between Lorenzo and Woodville and 6.0 per cent between Woodville and Blackfoot, but after fixing a minimum of 3.0 per cent left the actual amount to be deducted for the section from Heise to Lorenzo to be determined by what is called the "two day mean method." Under this method the percentage loss actually applied each day is the mean of the computed losses for the two preceding days, but in arriving at this mean 3.0 per cent is used for days on which losses of less than that amount or actual net gains are indicated by the solution of the following equation:

$$\text{Percentage loss} = \frac{\text{actual daily loss}}{\text{approximate average flow in section}} = \frac{U + T - D - L}{\frac{1}{2} (U + T + L)}$$

Where U equals total flow at upper river station (Heise in this case)
T " inflow from tributary streams entering within section
D " total diversions throughout section
L " total flow at lower river station (Lorenzo)

The 1924 daily losses or gains for the Heise-Lorenzo section as computed from this equation are shown graphically on Plate XII which also contains hydrographs for both of the terminal river stations and a corresponding graph showing the sectional loss in second-feet. The diagrams have all been adjusted to make them correspond to the nearest Heise dates.

A general discussion of river losses and gains will be found further on in this report, (pages 32-38) but attention should here be directed to a few characteristics of these curves. For example, the actual daily percentage losses show a pronounced tendency to increase as river discharges decrease,



and while the average for the period May 25 to July 31, when most of Jackson Lake storage was delivered, is very evidently less than 3 per cent, the mean for the low stages of August and September is much higher. The average applied transmission loss for this section for the entire period of storage delivery amounts to 5.2424 per cent, which of course is greater than the actual average because of the 3.0 per cent minimum provision.

Another variable item provided for in the 1924 program was the so-called allowance for lag in storage transmission. This is in effect only an advance of storage to normal flow users and hence must be repaid before the end of the storage delivery period. For this reason it does not add to the final losses charged but is carried in a plus and minus account and appears on Plates VIII, IX and X under the heading "Cum. Loss Stored." No definite limit was placed on this item by the Committee of Nine and in consequence it became in the season's operation simply a balancing account in all respects similar to the same column shown in the reports for other years except for the use of Blackfoot Bridge in place of the older Blackfoot or Clough station as the terminal point for making the adjustment.

Transmission deductions for all storage delivered to canals diverting above the Blackfoot gaging station were computed upon the basis of losses to the Woodville station, as specified in the purchase contracts. Obviously it would be impracticable to calculate losses to the heading of each individual canal and this group method was doubtless originally adopted to avoid the necessity for such procedure. Since more than half the Jackson Lake storage owned in the upper valley is diverted above the Woodville station and the balance within a distance of about twelve miles below that point, this plan would seem to be at least reasonably fair to all concerned. 1924 calculations show that upon the basis of the final seasonal loss these upper valley canals

should have received at their headings 91.9267 per cent of the regular storage turned out for them at Moran. Because of the increase during the season of the applied loss between Heise and Lorenzo, canals exhausting their storage rights early in the summer were actually entitled to somewhat more than this amount, while those with later storage draft should have received less.

The distinction between permanent storage rights acquired by purchase and temporary rights secured through exchange should here be emphasized, for the latter, as previously explained, were adjusted in such a manner that canals holding them were entitled to receive at their headings 95 per cent of the water which they originally released under prearranged agreement.

The Minidoka and Twin Falls canals were charged with prorata transmission losses to the Blackfoot Bridge station and on the basis of season deliveries were entitled to receive at their headgates 86.4111 per cent of the amounts released for them at the Jackson Lake outlet gates or the equivalent thereof in water accepted for exchange. Here again, however, the variable loss between Heise and Lorenzo was a factor and actual deliveries were upon a slightly larger or smaller ratio depending upon the time of completion.

Plate XIII shows 1924 daily and total deliveries of Jackson Lake storage from permanent rights, from temporary rights acquired through exchange of normal flow and from donations for Snake River canals located above the Blackfoot Bridge station, together with a tabular summary of all these items for each canal and for the entire upper valley group.

All minus quantities listed on this plate represent credits, while plus items indicate deductions.

The eleven columns of the tabular summary in left to right order may be briefly explained as follows:

- Column 1. Accumulations from the exchange of normal flow for storage.
- " 2. Actual storage (both permanent and temporary) diverted.
- " 3. Penalty charged against all storage rights acquired through the exchange of water.
- " 4. Credit accruing to regular Jackson Lake owner canals from the exchange penalty.
- " 5. Donations to the North Side Canal Co. Ltd.
- " 6. Algebraic summary of amounts shown in columns 1-5, inclusive.
- " 7. Donations to and receipts from the pool account (other than those shown in column 5.)
- " 8. Algebraic summary of amounts listed in columns 7-8, inclusive.
- " 9. Quantities in column 8 converted into acre-feet.
- " 10. Jackson Lake equivalent of column 9.
- " 11. Jackson Lake ownership right.

All amounts shown in columns 1-9 are on the basis of canal head-gate or Woodville river station deliveries.

Comparison of the quantities in column 10 with those in column 11 indicates a somewhat wider divergence between the actual storage draft by canals owning permanent rights in Jackson Lake Reservoir and the amount to which they were entitled, than would normally be expected under good river administration. In general, these apparent discrepancies may be explained by (1) additional complication of bookkeeping attributable to the exchange of normal flow for storage, as a result of which the total amount to be handled or accounted for in the upper valley was practically trebled; (2) the continued delivery of storage to canals in this section for nearly six weeks after the Jackson Lake rights of lower valley canals had been exhausted and

[illegible]

JACKSON LAKE SIGNAGE DELIVERIES (REGULAR AND EXCHANGE) - SIOUX FALLS

[illegible]

VATIONS AND RECEIPTS - UPPER VALLEY

AUG										SEPT																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
28	29	30	31	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
3					25	11	1	16	23	23	24																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							

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ALL DISCHARGE QUANTITIES ARE

DEBRIDGE	POOL	DELIVERY	DELIVERY	JACK LAKE	JACK LAKE
SUM OF	ADJUST	IN	IN	EQUIV LNT	RIGHT
HAND (-)	ACCOUNT	SEC. FT.	ACRE FT.	ACRE FT.	ACRE FT.
315	- 315	0			
593		593	1176	1280	1200
3871	3871	0			
1058		1058	2099	2283	2000
2580		2580	5117	5566	6100
9	9	0			
2		- 2 -	4 -	4	0
22		- 22 -	44 -	48	0
3483	- 800	2683	5322	5789	5000
5596	4156	- 1440 -	2856 -	3107	0
786	140	926	1837	1998	2000
1824		1824	3618	3936	5120
0		0			
652	- 125	527	1045	1137	1040
0		0			
1097	320	1417	2811	3058	4000
1907	320	1587	3148	3424	3000
46		46	91	99	0
0		0			
558	558	0			
0		0			
2556	- 2556	0			
0		0			
251	- 251	0			
0		0			
0		0			
0		0			
177	- 177	0			
0		0			
40		40	79	86	155
8166		8166	16197	17620	17600
723		723	1434	1560	1500
46		46	91	99	100
671	- 671	0			
9143	947	10090	20013	21771	25000
26056					
155	- 155	0			
256	256	0			
5869	- 2162	3707	7353	7999	8000
2468	- 2685	19783	39239	42685	42685
730		- 730 -	1448 -	1575	0
47		- 47 -	93 -	101	0
0		0			
40	- 40	0			
0		0			
7499					
3555	0	53555	106225	115555	124500

355 ACRE FEET LESS 100 ACRE FT SOLD TO BEAR ISLAND AND 100 ACRE FT SOLD TO W. H. ROWBERRY

17500 JACKSON LAKE RIGHT PLUS 100 ACREFT. KENNEDY DELIVERED TO W.H. ROWBERRY THROUGH NEW SWEDEN CANAL

100 ACRE FT BOUGHT FROM KENNEDY

1924 DISTRIBUTION	MAY										JUNE															
	25	26	27	28	29	30	31	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
USRS - STORED IN LAKE WALCOTT				-1149	0	6781395	2175	2715	3100	4481	5522	4478	3411	2283	1330	723	161	0	0	0	0	0	0	0	0	0
USRS - MINIDOKA CANALS				0	6271500	1574	1647	1629	1732	1791	1748	1988	747	394	330	376	401	1386	1394	1154	653	912	1275	720	720	377
MILNER LOW LIFT IRRIGATION DIST.				0	0	76	96	97	95	94	95	94	100	97	90	93	94	92	94	88	78	73	74	74	74	72
TWIN FALLS CANAL CO.				0	221	221	221	222	223	223	171	107	848	58	193	213	243	253	253	253	18	4	808	543	122	483
NORTH SIDE CANAL CO. LTD.				0	1827	710	275	526	279	1162	1786	1780	483	17	30	1860	2593	1266	361	14	46	29	77	33	66	86

[illegible][illegible]

JACKSON LAKE STORAGE DELIVERIES (REGULAR AND EX

[illegible]

LAKE WALCOT

[illegible]

TWIN LAKES

	JULY	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30															
19	20	21	22	23	24	25	26	27	28	29	30	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30

ANGE) -- STORAGE DONATIONS AND RECEIPTS -- LOWER VALLEY

AUG.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
27	28	29	30	31																												
0	0-303	0	0	0	0	0	0-59	84	0-209	78	0	0	0	0-196	501-484	630-461	495-502	249	0	0	0	0	0	0	0	0	0	0	0	0	0	0
266	1146	0	177	717	347	276	5	268	59	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
53	52	53	52	53	52	51	52	52	51	51	52	53	51	51	53	51	52	53	51	49	50	48	51	50	50	49	51	51	52	51	52	51
229	72-129	-335	-448	-583	-268	-423	-201	-303	14	365	360	348	376	531	622	492	636	515	496	557	290	-47	-24	-24	-24	-24	-24	-23	-23	-23	-23	-23
781	2160	2134	2076	871	78	199	179	149	-17	-48	-44	-47	-20	-40	-48	-74	-64	-13	-9	7	-11	-17	1	5	-9	6	9	12	21	55	52	48

STORAGE DELIVERIES

[illegible]

ORAGE DELIVERIES

[illegible]

[illegible]

PLATE NO XIV

SEPT	TOTAL (+)	ALGEBRAIC SUM OF (+) AND (-)	5% PENALTY CREDIT	BALANCE	MISCELL CREDIT ITEMS	DELIVERY IN SEC. FT.	DELIVERY IN ACRE FT.	JACK LAKE EQUIV LNT ACRE FT.	JACK LAKE RIGHT ACRE FT.
1	46143	40625							
	90944	90944	- 1958	129611	✓ 4351	125260	248450	287521	288310
	6024	6024	- 102	5922		5922	11746	13593	15000
	12919	2210	- 660	1550		1550	3074	3558	10082
	46542	38386	- 2186	36200	✓ 12850	23350	46314	✓ 53597	42368
	LAKE STORAGE DELIVERED TO UPPER VALLEY (PLATE XIII)							115555	124500
	CREDITED TO NORMAL FLOW AT BLACKFOOT BRIDGE							4026	
	R 1925							2410	
	E 1924							480260	480260

✓ AMERICAN FALLS STORAGE
RELEASED TO MINIDOKA PROJECT
AUGUST 21 - 27. TOTAL 4351
SECOND FEET

SEPT	TOTAL (+)	ADJUSTMT FROM J.L. STORAGE	DELIVERY IN SEC. FT.	DELIVERY IN ACRE FT.	JACK LAKE EQUIV LNT ACRE FT.
331	87559	- 40625	46934	93091	107731
53	527	0	527	1045	1210
120	1439	0	4506	8937	10343
19	971	0	156	310	358
			43111	85509	98956
	Y 28 - OCT 3		22425		
			20686		
	SON CHARGE		254		
	6 PERIOD		20432		

✓ DONATION OF UPPER VALLEY
WATER TO NORTH SIDE CANAL
CO. NET AT MILNER

✓ 44644 ACRE FT. JACKSON LAKE
PLUS 8953 ACRE FT. LAKE
WALCOTT AND AMERICAN FALLS
STORAGE CREDIT FROM
MINIDOKA PROJECT.

SEPT	TOTAL (+)	ADJUSTMT	DELIVERY IN SEC. FT.	DELIVERY IN ACRE FT.	TWIN LK. EQUIV LNT ACRE FT.
33	1278	0	1278	2535	2757

OTHERWISE NOTED AT TOP OF COLUMN

the river was supposed to be dry below the last canal in the vicinity of Blackfoot; (3) the variable transmission loss schedule used for the section between the Heise and Lorenzo river stations; (4) the difference between the revised computations used in this final report and the less dependable operation period data.

The totals at the bottom of the sheet show that in spite of overdrafts by some canals the entire upper valley group lacked 8945 acre-feet of using all the storage to which they were entitled at Jackson Lake. Since only 3410 acre-feet remained in the reservoir at the close of the season it is apparent that 6535 acre-feet of Jackson Lake rights or 5647 acre-feet at Blackfoot Bridge passed the latter point and became available for lower valley use in addition to the amount which could be legitimately claimed by that section.

Plate XIV serves to extend and complete the Jackson Lake delivery account and also contains summaries of the storage delivered from Lake Walcott and from Twin Lakes.

Lake Walcott deliveries were limited to the Minidoka canals during the times when there was Jackson Lake storage in the river. This fact accounts for the minus quantities which are shown on a number of dates as stored in Lake Walcott. Storage delivered to the canals diverting at Milner prior to May 28 and subsequent to August 29 was from Lake Walcott. Because of the Twin Falls Canal Co. underdraft during the latter part of the season this storage shows largely as minus charges but must be considered in connection with the other table if a complete balancing of quantities is to be obtained.

In both the Jackson Lake and Lake Walcott tables the minus deliveries listed for the Twin Falls Canal Co. and the North Side Canal Co. Ltd. indicate Lake Walcott credits on account of normal flow right underdrafts. To a

considerable extent these represent prearranged exchanges of normal flow for storage similar in character, except for the omission of the 5 per cent penalty, to the upper valley exchanges for Jackson Lake water. Combined with these, however, is the ordinary plus and minus account which is maintained as a matter of convenience in order to avoid the necessity for changing the canal head-gates with each little variation in the normal flow of the river.

The tabular summaries shown on this sheet are not materially different in character from those of Plate XIII which have already been discussed in some detail, but some of the items require additional explanation.

The 4351 second-feet credited to the Minidoka Project represent water impounded at American Falls by the Idaho Power Co. prior to the beginning of 1924 regulation which was released August 21-27 in exchange for power and not returned again until October. The 8953 acre-feet credited to the North Side Canal Co. Ltd. is the Jackson Lake equivalent of the sum of 5940 acre-feet stored in Lake Walcott prior to the beginning of regulation and 1796 acre-feet of American Falls storage donated by the Idaho Power Co. as a compensation for injury resulting from the impounding of water at that point prior to May 22. From the two American Falls quantities it will be noted that a total storage there of slightly more than 10,000 acre-feet is indicated. Most of this was originally created in February, 1924 when additional flash-boards were placed on the Power Company's dam.

The following additional table will assist in showing the extent to which lower valley canals utilized their Jackson Lake storage rights:

Jackson Lake Equivalents in Acre-Feet
1924 Right less Actual Draft

Name	From Jackson Lake Summary	From Lake Walcott Summary	Algebraic Total
Minidoka Project	789	-17728	-16939
North Side Canal Co. Ltd.	-2276	- 358	- 2634
Twin Falls Canal Co.	6524	10343	16867
Milner Low Lift Irrigation Dist.	<u>1407</u>	<u>- 1210</u>	<u>197</u>
Algebraic Total	6444	- 8953	- 2509

In this table overdrafts and underdrafts are represented respectively by minus and plus quantities.

The net total overdraft of 2509 acre-feet when added to the 4026 acre-feet credited to normal flow below Blackfoot Bridge accounts in toto for the 6535 acre-feet (Jackson Lake equivalent) of upper valley storage rights which passed that station during the season.

Most of the large underdraft of the Twin Falls Canal Co., as shown by the daily records, accumulated after August 21 when the normal flow more than sufficed to fill the requirements of this company. Because of the equalization at Lake Walcott the Minidoka Project, in default of any orders to the contrary, became the chief beneficiary of this situation.

The small balance remaining to the credit of the Milner Low Lift Irrigation District was exhausted by a short run about the middle of October.

Throughout the entire summer, wastage past Milner was limited to leakage through the dam, hence the extraordinary waste item which usually appears in these tables has been omitted. The small unavoidable waste has been pro-rated in the usual manner between the two largest canal systems in proportion to their ownership of the dam, viz. 6/11 against the Twin Falls Canal Co. and 5/11 against the North Side Canal Co. Ltd. These amounts have then been

added to the daily canal diversions before the latter were listed on this plate.

TWIN LAKES STORAGE DELIVERIES

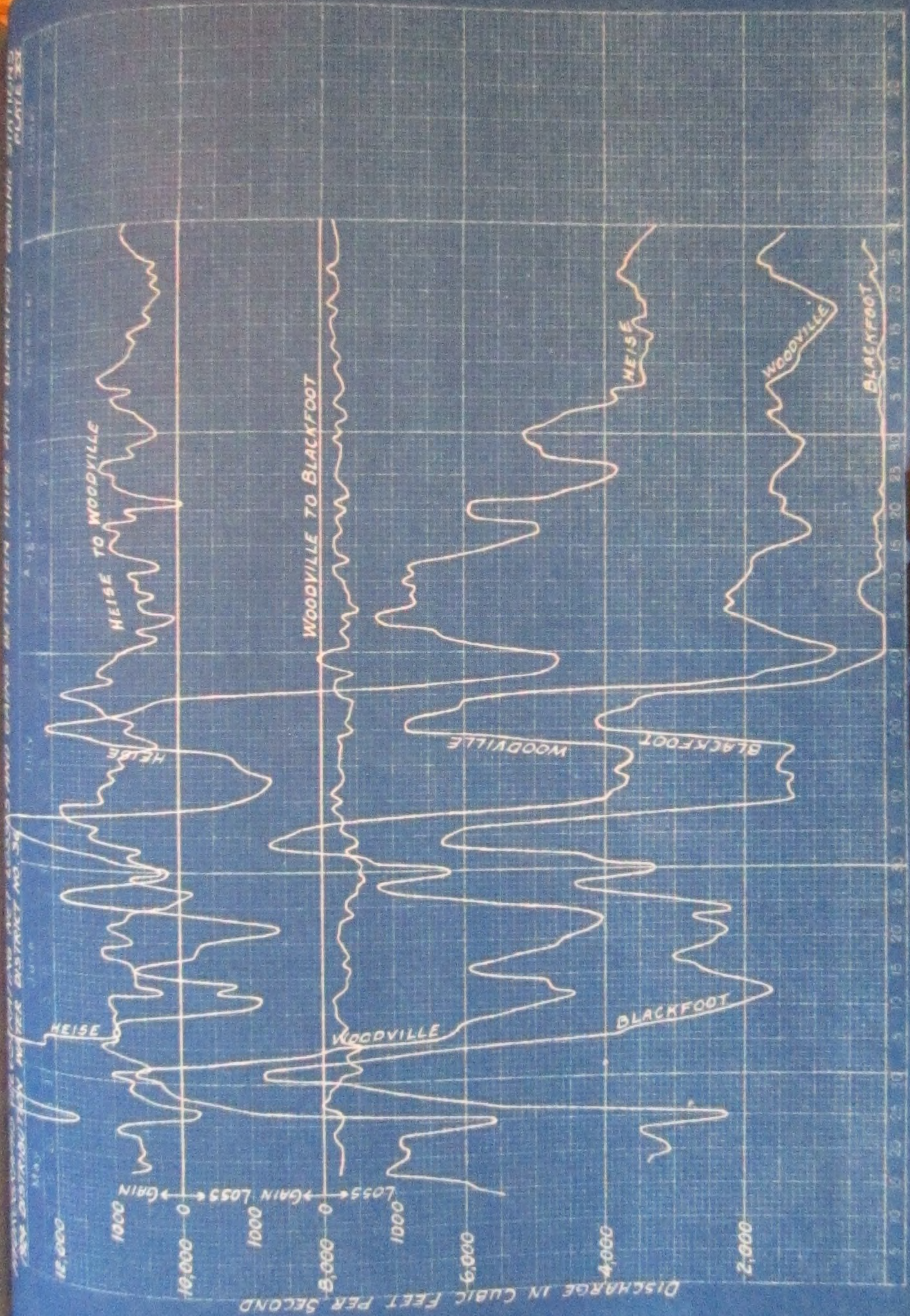
Water delivered to the Osgood canal of the Utah-Idaho Sugar Co. from the small Emma Matilda-Two Ocean or Twin Lakes Reservoirs is listed and summarized in the last table on Plate XIV. Transmission losses on this water were computed on the basis of the Jackson Lake storage losses to the Woodville river station.

A considerable amount of work was done early in the season in enlarging and straightening the Two Ocean Lake outlet and a little later the Emma Matilda outlet was also dredged out slightly and a new dam with gate section installed. Steady delivery from these reservoirs was frequently interfered with, however, by the building up of beaver dams, so the practice established in previous years of accumulating a storage credit whenever it was practicable to release more water than was required for immediate diversion was again adhered to. This, together with the occasional unexpected reinstatement of portions of the Osgood normal flow rights, accounts for the small excess of storage released over and above the amount actually used.

RIVER LOSSES AND GAINS

Losses and gains throughout different sections of Snake River are included in the data contained on Plates VIII, IX and X, but the changes in the quantities and the relation which these changes have to the discharge of the river at different points are much more readily noted when indicated graphically.

Plate XV contains hydrographs of the total flow passing the Heise, Woodville and Blackfoot Bridge gaging stations during the period from May 18 to



September 30, together with graphs showing the net losses and gains in the two intervening sections. All graphs are plotted to the same scale and with a time interval allowance to make them coincide with the Heise dates.

The tendency, which has been noted during previous seasons, toward increased losses coincident with sharp rises in river stage and the reverse of decreased losses or increased gains at the time of rapid drops in the river is again evidenced.

While the indicated gains between Heise and Woodville are somewhat less and the losses from Woodville to Blackfoot are slightly larger than those of the preceding year the differences are not as great as might be expected when comparing a year of nearly normal run-off with one where an extreme deficiency was noted. If the comparison is made with the low water year 1919 the ground water return is shown to be very much greater in 1924 throughout the entire section from Heise to Blackfoot, while the gains shown for the section from Heise to Woodville also average more than for either 1920 or 1921. This favorable condition can doubtless be largely attributed to the unusually heavy upper valley canal diversions during the months of April and May.

Variations in the quantity of water diverted by intervening canals, in the amount of return flow or loss and in the discharge of tributary streams account for the difference noted in the shape of the three hydrographs.

During 1921, 1922 and 1923 a total of seven sets of measurements were obtained covering all surface waste or return flow entering the river between the Woodville and Blackfoot gaging stations. These tests have been summarized and discussed in the reports for the respective seasons during which they were secured. The reasonableness of the storage transmission loss of 6 per cent which has been applied through this section of the river during the past three years can only be determined by investigations of this or a

more comprehensive character and in consequence one more similar test was completed during the 1924 low water period and is tabulated as follows:

<u>Right Bank River</u>				<u>Left Bank River</u>			
<u>Name</u>	<u>Date</u>	<u>Amt.</u>	<u>Name</u>	<u>Date</u>	<u>Amt.</u>		
Fugal Gulch	9/12	0.00					
Roadside	"	0.00					
Woodville Bridge							
#1	9/12	0.00	#1-2	9/12	0.00		
#2	"	0.10					
#3-5	"	0.00					
#6 (Woodville)	"	0.10					
Lower Shelley Bridge							
#10-25	9/12	0.00	#3-10	9/12	0.00		
Firth Bridge							
#25a-25b	9/13	0.00	#11	9/13	0.50		
#26 (New Sweden)	"	0.50	#12	"	0.10		
#26a	"	0.10	#13-21	"	0.00		
#27-30	"	0.00					
#31 (Waste below Rose)	"	0.40					
#31a	"	0.00					
#32 (New Lavaside)	"	1.00					
Porterville Bridge							
#33-43	9/14	0.00	#22-23	9/14	0.00		
#44 (Regular Wasteway)	"	7.76	#23b	"	0.05		
#45	"	0.00	#24 (Blackfoot)	"	23.50		
			#24a	"	0.00		
			#25 (Slough)	"	0.50		
Lower Blackfoot Bridge							
#46	9/14	0.05	#26-28	9/14	0.00		
#47-52	"	0.00	#29	"	0.50		
#53 (Parsons)	"	0.25	#30-31	"	0.00		
#54 (Watson)	"	4.00					
#55 (Combined wasteway)	"	5.00					
#56 (Peoples)	"	0.00					
#57-58	"	0.00					
Blackfoot Laging Station (Cloughs) on Snake River							
Total Right Bank		19.26	Total Left Bank		25.15		

Most of the larger quantities noted in this summary were actually measured with a current meter, while those not measured were estimated as closely as possible by the hydrographers who made the investigation.

Analysis of these results in the same manner as those of former years, by adding this surface waste as measured inflow, increases the net average loss between the Woodville and Clough river gaging stations for this three day period from 110.33 second-feet to 154.74 second-feet. At the extremely low river stages prevailing at that time, this represents 23.03 per cent of the mean river flow at the two ends of the section.

No Jackson Lake storage was being delivered to the lower valley during September and no appreciable amount would ever be delivered at such a low river stage, so this very high percentage can hardly be used as a measure of the loss to be applied in the transmission of storage through this section of the river. The test illustrates, however, the relatively heavy losses which may be expected at very low river stages and in conjunction with previous year determinations, shows that such losses have a closer relation to the wetted perimeter than to river discharge.

The slight differences in the diagrams introduced as a result of the use of the Blackfoot Bridge station as the lower terminal instead of the older Blackfoot or Clough Station may be studied with the aid of the extra graph included on Plate XVI which also contains similar curves to those shown on Plate XV covering the section between Clough's and Neeley.

The Neeley hydrograph is complete for the five months from May 1 to October 31, but the other records are limited to the period covered by the data on Plates VIII, IX and X.

Idaho Power Co. storage and release of water at American Falls accounts for the sudden decrease and increase in the net gain between Cloughs and

Neeley noted on May 19-20 and August 21-27, respectively. The average net gain in this section for the four months June to September, inclusive (Neeley dates), after eliminating the American Falls storage released in August and also the discharge of Portneuf River as measured at the Pocatello station, amounts to 2279 second-feet. This is more than four hundred second-feet less than the 1924 mean and is slightly less even than that for the low water year of 1919. Comparison with the latter shows the 1924 deficiency to have been confined to the early part of the irrigation season as the gains throughout this section during August and September were greater than those of 1919. No thoroughly satisfactory explanation of the variations in this ground water return can be made until more information becomes available concerning the source of supply of the Portneuf bottom springs which contribute the larger part of this water. If, as seems probable, these springs are fed chiefly from underground reservoirs of considerable size whose water originates at some distance from the surface outlets, the early season deficiency in comparison with 1919 might be attributed to the generally more severe water shortage, while the increase during August and September could perhaps be accounted for by the greater waste and return flow to be expected from adjacent irrigation systems in view of the heavier late season use of water by the latter in 1924.

Additional information on this subject will doubtless be afforded by the data concerning the flow of individual springs located in the Portneuf or American Falls bottoms which were collected in 1923-1924 by employees of the U. S. Bureau of Reclamation but which were not available for study when this report was prepared.

Beginning with the 1926 irrigation season, when it is anticipated that some irrigation storage will be obtained at the new American Falls Reservoir,

added importance will be attached to the inflow between Blackfoot and Neeley because of the necessity which will then exist for an equitable segregation between normal flow and stored water even at times when no Jackson Lake deliveries are in transit.

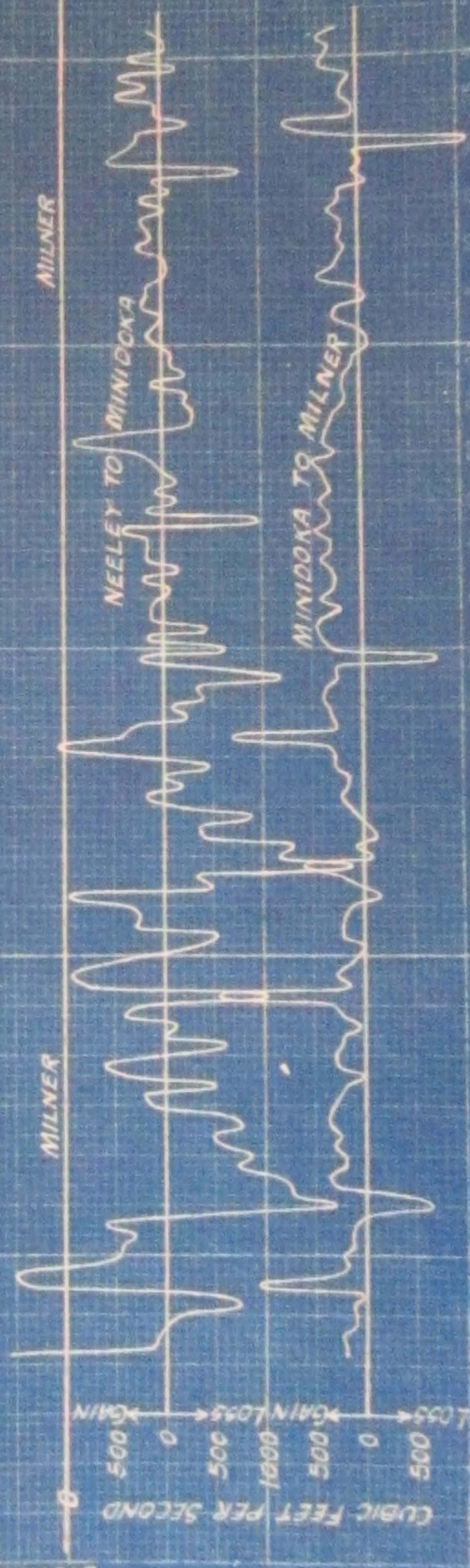
Plate XVII shows net gain or loss graphs for the two sections between the Neeley and Minidoka and the Minidoka and Milner gaging stations respectively. It also includes curves showing the fluctuations in water surface elevation at both Lake Walcott and Lake Milner, together with hydrographs for the river stations below the Minidoka and Milner dams. All these are plotted to coincide with Lake Walcott or Minidoka dates.

Because of the water shortage and also by reason of the added power made available by the construction of a transmission line from American Fall to connect with the Minidoka system, it was possible to utilize Lake Walcott as an equalizing reservoir to a greater extent than has been permissible for several years. This fact assisted materially in the river administration and not only facilitated more satisfactory deliveries (through normal flow-storage exchanges) to the canals diverting at Milner Dam, but also helped to avoid any waste of water such as sometimes occurs in an ordinary year when Lake Walcott must be maintained at nearly full capacity.

The general trend of the gain or loss curves, as well as the irregularities noted therein, differ but little from those of former years and can probably be similarly explained.

From May 21 to July 25 when Lake Walcott was either being built up or was maintained at nearly full capacity the average daily net loss in the section from Neeley to Minidoka was 95 second-feet while from July 26 to October 3 when the reservoir was either being drawn down or was maintained at a very low stage an average daily net gain of 1 second-foot is indicated for

DISCHARGE IN CUBIC FEET PER SECOND



the same section. Just why both these quantities should be so much smaller respectively than the losses and gains noted during other years under somewhat similar reservoir conditions, is not apparent, but the change from loss to gain with heavy draft upon the lake is still noticeable and is an indication of the benefit derived from bank storage. The fact that for the entire season the average daily loss in this section was only 46 second-feet as against amounts ranging from the former minimum of 145 in 1919 to the maximum of 501 in 1920 may perhaps be attributed to this bank storage return because the reservoir reached a lower stage in 1924 than at any time during the five previous irrigation seasons.

The average net gain for the season for the section from Minidoka to Milner amounted to 206 second-feet in comparison with similar quantities for other years ranging between the 1919 minimum of 249 and the 1923 maximum of 366. This is readily explained by the decreased waste or return water which entered the river from the Minidoka Project, where the 1924 shortage was even more noticeable than that of 1919.

From Neeley through to Milner, because of the small average loss at Lake Walcott, the mean daily gain for 1924 amounted to 160 second-feet or 4 second-feet more than the former maximum noted in 1923.

Most of the more pronounced irregularities in the two gain or loss graphs are probably due to (1) inapplicability at certain river stages of the single time interval used; (2) wind effect on the ponded water of Lakes Walcott and Milner; (3) increase or decrease of Lake Milner storage which was not taken into account in the computations.

NORMAL FLOW COMPARISON

The purpose of Plate XVIII is to afford a comparison of the normal flow water supply available during the respective irrigation seasons 1919-1924 for

SUMMARY BY MONTHS OF NORMAL FLOW CONDITIONS BETWEEN THE HEISE-REXBURG AND BLACKFOOT GAGING STATIONS IRRIGATION SEASONS 1919 1920 1921 1922 1923 & 1924

DISTRIBUTION WATER DISTRICT NO. 36

PLATE NO. XVIII

HEISE NOR. FLOW	REXBURG	BLACKFOOT RIVER	RETURN FLOW HEISE TO BLACKFOOT	NORMAL FLOW GAIN FROM STORED LOSS	TOTAL NORMAL FLOW SUPPLY	TOTAL DIVERSIONS HEISE TO BLACKFOOT	STORED DIVERSIONS HEISE TO BLACKFOOT	NORMAL FLOW DIVERSION HEISE TO BLACKFOOT	BALANCE AT BLACKFOOT STATION	NORMAL FLOW PASSING BLACKFOOT STATION
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JUNE

1919	241439	22477	400	-18994	16728	262050	264752	10433	254319	7731	7731
1920	552010	84910	3205	-14579	0	625546	310026	0	310026	315520	315520
1921	683677	153110	5039	-33854	0	807972	277462	0	277462	530510	530510
1922	395489	113110	8190	-2304	0	714485	331545	0	331545	382940	382940
1923	482579	90200	11597	23918	0	608294	262414	0	262414	345880	345880
1924	303207	15476	201	10631	4577	334092	233547	-66484	300031	34061	34061

JULY

1919	121226	21652	14	-4693	12321	150520	180218	35521	144697	5823	5823
1920	353997	31670	4810	8812	6048	405337	317285	7089	310196	95141	95141
1921	308767	30480	3213	5651	7803	355914	323826	11031	312795	43119	43119
1922	297375	31066	6471	25067	10796	370775	321988	4681	317307	53468	53468
1923	365108	28661	5864	22459	10881	432973	328971	4020	324951	108022	108022
1924	171278	17345	655	23098	9853	222229	255842	39689	216153	6076	6076

AUGUST

1919	98839	19894	78	3938	5123	127872	129034	2217	126837	1035	1035
1920	177244	24553	5266	34866	6390	248319	259201	25851	233350	14969	14969
1921	182975	35843	8209	29756	5620	262403	260670	10608	250062	12341	12341
1922	192659	34222	6897	37086	7071	277935	252849	15186	237693	40242	40242
1923	178904	28659	5979	35700	11008	260250	265384	23833	241551	18699	18699
1924	101953	25686	16	13484	6060	147199	210169	67074	143095	4104	4104

SEPTEMBER

1919	87115	22501	345	2234	0	112195	107517	0	107517	4678	4678
1920	66389	21130	2290	10585	521	100915	71638	0	71638	29277	29277
1921	129235	50960	4525	26655	184	211559	149132	0	149132	62427	62427
1922	183751	39758	1996	15950	0	191455	142769	0	142769	48686	48686
1923	120623	30825	3798	23299	5571	184116	194718	22851	171867	12249	12249
1924	87479	24983	503	15364	1890	130219	141596	15613	125983	4236	4236

THEORETICAL; SEE TEXT FOR EXPLANATION

ALL DISCHARGE QUANTITIES ARE LISTED IN SECOND FEET
INCLUDES EMMA MATILDA AND TWO OCEAN LAKE STORAGE
RECORDS FOR SEPTEMBER 1-15 (INCLUSIVE) ONLY

the so-called Idaho Falls area. It consists of a table showing by months the principal component parts which make up the normal flow of Snake River and the extent to which water of this character is used in the territory between the Heise and Rexburg gaging stations at the upper end and the Blackfoot or Clough station at the lower end of this section.

The quantities listed are all summarized from the more extensive river data tables contained in District No. 36 water distribution reports. Time intervals have been adjusted to correspond as nearly as practicable to Heise dates.*

The following brief explanation which is almost identical with that contained in the 1923 report is included for the convenience of the reader:

Columns 1-4 Sufficiently described by headings.

Column 5 Net gain in the section. To be complete it should probably have added to it the quantities contained in the same lines in Column 6.

Column 6 If the storage transmission loss is correctly determined, any indicated normal flow gain from that source is really additional return flow. The quantities shown in this column reflect changes in transmission loss schedules which should be taken into account in comparing the data for different years.

Column 7 The algebraic sum of the quantities listed in the five preceding columns.

Columns 8-10 Headings afford sufficient explanation.

Column 11 "Total Normal Flow Supply" less "Normal Flow Diversion Heise to Blackfoot."

Column 12 Equivalent to column 11 on which it affords a check, as the results here given for all years except 1924 were taken direct from the river data sheets. Because of the use of the Blackfoot Bridge rather than the older Blackfoot or Clough station as an adjustment point, theoretical rather than actual totals must be used for the latter point in this one year if a check on column 11 is to be secured.

*1922 and 1923 reports erroneously state that these records have been adjusted to correspond with actual canal diversion dates.

The 1924 segregation of diversions as between stored water and normal flow is complicated by the large number of exchanges which were made. For example, the minus storage shown as being diverted during June represents the excess of the normal flow accepted for exchange over actual storage diversions while the normal flow shown as diverted in the same month very evidently is a theoretical rather than an actual quantity.

The analysis of 1924 conditions afforded by this comparative summary illustrates very plainly certain more or less pronounced peculiarities, some of which have already been mentioned.

- (1) With the exception of one year in each case, the return flow from Heise to Blackfoot during June and July is the largest shown for the six year period, while even in August and September this item is much larger than for 1919.
- (2) For each of the four months the total normal flow supply is materially less than that shown for any other year except 1919.
- (3) Total diversions during June were less than those for that month in any of the other five years, while for each of the other three months, only 1919 showed lower totals.
- (4) Total diversions for the four months exceeded those of 1919 by about 160,000 second-feet, but were less than the totals for the other years by from 160,000 to 210,000 second-feet. (From the incomplete data available total diversions in this section during May, 1924 are believed to have been materially greater than during the same month in any previous year—enough so in fact to bring a five months' total up to that of a year of nearly average water supply.)
- (5) Nearly thirty thousand second-feet more normal flow passed the Blackfoot station in the four months tabulated than in 1919, but from

more than four to almost six hundred thousand second-feet less went by than during the other four years.

From the data herein presented it is therefore readily apparent that central section canals fared comparatively well during 1924 in spite of the general deficiency in run-off. This was partially due to the well sustained normal flow and further to the benefits derived through the storage exchange practice. The normal flow available for the use of lower valley canals on the other hand was but little greater than in 1919, while their storage was much less. Hence, from the standpoint of irrigation water supply the year was the worst of record in the lower part of District No. 36.

GROUND WATER

In connection with the Meeker investigation, records were maintained during the 1923 irrigation season on 134 wells distributed over what was designated as the Snake River Cone—a triangular area extending in a general northwesterly direction from an apex at the Heise gaging station.

The ground water levels throughout this cone area are believed to have a material influence not only upon the river losses between the Heise and Lorenzo gaging stations, but also on the amount of return flow noted as entering between Lorenzo and Woodville. For this reason it seemed advisable to secure some observations during 1924, but because of limited personnel and the more intensive work required during a water shortage period, only one set of measurements was obtained.

The following table summarizes in groups the water surface elevations of the wells visited August 15 to 22 by comparison with those of the same dates during the preceding year:

Area	Number of wells*	Average 1923 minus 1924 water surface elevation	Range of difference noted	Notes
North side of Snake River Heise to Yellowstone Branch O. S. L. R. R.	21	3.3 feet	-1 to +11 ft.	1924 deficiency most noticeable close to foot hills. Only two wells show increase over 1923
Yellowstone Branch O.S.L.R.R. to Henrys Fork on north side of Snake River	9	0.1 foot	-3 to +1 ft.	Very small differences noted. Only two wells show increase over 1923
Between Snake River and Great Feeder from Heise to Yellowstone Branch O.S.L.R.R.	20	1.9 feet	0 to +5 ft.	No very marked trend in differences as to exact location
Between Snake River and Great Feeder west of Yellowstone Branch O.S.L.R.R.	14	0.3 foot	-1 to +1 ft.	Small differences. Only one well shows increase over 1923
South side of Great Feeder Heise to Yellowstone Branch O. S. L. R. R.	24	3.0 feet	-2 to +7 ft.	Greatest differences noted in southwest part of this section. Only one well shows increase over 1923
South side of Great Feeder west of Yellowstone Branch O. S. L. R. R.	26	1.9 feet	-1 to +8 ft.	Wells farthest from Great Feeder show greatest differences. Only two wells show increase over 1923

*5 wells found dry or caved in when visited and not included in the above summary. 3 observations showing erratic results omitted. No readings at 12 wells in 1924.

This tabulation shows clearly that, as might be expected, the water table was generally lower in 1924 and indicates the sections where the depletion in comparison with the former year was most noticeable. The smallest

differences, it should be noted, occur in portions of the area which are known to be largely sub-irrigated.

No very dependable conclusions can be drawn from such meager data, but study of other records shows that during the period covered by the observations river losses between Heise and Lorenzo were greater and gains between Lorenzo and Woodville were smaller, respectively, in 1924 than in 1923.

WATER DISTRIBUTION AND HYDROMETRIC WORK IN THE

HENRYS FORK-FALL RIVER-TETON AREA

C. A. McClelland again filled the position of hydrographer and deputy water master in direct charge of hydrometric work and water distribution in the so-called North Fork section and in addition acted as Special Deputy for the delivery of stored water from Henrys Lake Reservoir. All other deputies and assistants working in this section reported to and received their instructions from him, while he in turn worked under general supervision from the office in Idaho Falls.

An office was maintained during the summer in the St. Anthony Bank & Trust Co. building at St. Anthony and a part time clerk was employed from May 21 to September 15, inclusive, to look after this office and to assist with correspondence, checking of computations, etc.

The following abstract from a report prepared by Mr. McClelland affords a brief summary of the work in this part of District No. 36.

Canal and river measurements, gage readings and minor repairs to station equipment occupied most of Mr. McClelland's time prior to the beginning of regulation.

C. R. Black assisted with this work and filled the combined position of hydrographer and deputy water master for the Teton River division from May 19 to June 5, after which time he was replaced by W. F. Dawson whose services in this section continued throughout the balance of the season. Mr. Black was also again employed during part of July and August for work in the vicinity of Henrys Lake.

Regular daily gage readings and reports were initiated on May 20 and maintained until September 30.

Low water conditions existed from the beginning of the season, to such an extent that canals having young rights received only a very scanty supply.

By May 31 diversion dams had been tightened up and the entire available normal flow was being utilized. For several days thereafter it was necessary to cut off decreed rights beyond or in advance of the main Snake River regulation. The ground water in the sub-irrigated sections had been so raised by early application, however, that it was soon possible for a few of the older canals to reduce their diversions and render some assistance through temporary transfers. This partial relief, together with light rain on June 7 and 18-19, helped to defer beginning the draft upon Henrys Lake storage until about the last of June.

This stored water was of immense value to the owner canals, but was insufficient in amount to warrant the lease or sale of any appreciable quantity to other users.

Because of the very limited normal flow supply, temporary transfers, either direct or through the pooling committee, were not made to the extent which has been customary in former years. The tendency which has been heretofore noted for the canals having the valid rights to limit their donations to adjacent users, or at least to those diverting from the same side of Henrys Fork, was again evident and was the cause of a considerable amount of friction and dispute; all of which added to the difficulties of river administration.

No storage, other than the small amounts made available through donations and utilized by exchange, was available for the canals diverting from Fall River. In consequence, crop losses were generally greater in the territory served from this source than in other sections. Likewise much inconvenience, if not actual suffering, was here occasioned by the frequent lack of water for domestic or culinary use and for boiler use of threshing machine outfits.

Unusual water shortage was also experienced in the Teton River area where the supply proved insufficient to fill decreed rights after May 27. This drainage contributed no surface flow to the main river system so it was impracticable for the pooling committee to arrange any exchanges which would furnish relief and aside from a few local transfers little could be done to improve the situation.

Distribution to canals below the forks of the Teton was somewhat

DAILY DISCHARGE IN SECOND FEET OF CANALS DIVERGING FROM HENRY'S FORK AND TRIBUTARIES FOR MAY 1928

FALL RIVER CANALS

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	TOTAL		
YELLOWSTONE																			80	84	84	80	80	85	85	86	87	88	88	88	88	88	88	
THOMPSON																			0	0	0	14	16	25	25	25	25	25	25	25	25	25	25	
SHARPSVILLE																			102	129	147	159	166	172	170	184	177	176	175	182	183	187	187	
TOTAL DIV ABOVE SQUIRREL																			182	183	171	196	202	210	226	242	251	252	258	259	259	259	259	
FARMERS OWN																			36	45	39	41	39	40	40	41	40	40	40	40	40	40	40	
ENTERPRISE																			150	151	150	141	141	138	138	137	137	137	137	137	137	137	137	137
BELL																			13	13	13	5	5	6	5	12	5	5	5	5	5	5	5	5
FALL RIVER																			388	397	406	412	402	387	381	400	393	381	376	376	376	376	376	376
MOBILE																			13	14	14	14	13	10	10	13	15	5	7	3	3	3	3	3
CHESTER																			89	84	86	86	78	74	69	74	79	62	54	46	45	45	45	45
SILVER																			30	31	32	27	23	22	20	25	27	15	9	4	4	4	4	4
CURR																			40	41	41	45	30	28	29	30	32	27	24	24	24	24	24	24
WHITE																			6	6	6	7	6	5	4	5	5	4	3	2	2	2	2	2
TOTAL DIV SQUIRREL TO CHESTER																			765	782	787	778	737	710	696	736	740	696	664	629	629	629	629	629

HENRY'S FORK CANALS

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	TOTAL
DEWEY																			18	18	18	18	21	25	25	26	27	28	29	30	31	296
LAST CHANCE																			91	91	90	91	92	85	88	89	88	80	76	74	74	1109
ST ANTHONY UNION																			612	398	387	387	388	346	370	354	350	370	445	479	504	2635
FARMERS FRIEND																			278	276	265	235	245	224	238	233	242	224	221	221	221	221
TRIN GROVES																			161	162	166	151	147	144	147	151	152	148	148	148	148	148
SALEM UNION																			232	233	236	233	242	221	230	236	239	231	221	209	206	2964
TOTAL DIV. STANTON TO ST ANTHONY																			1392	1373	1362	1333	1319	1245	1293	1304	1332	1246	1208	1201	1201	1201
EGIN																			353	368	371	337	325	275	329	364	354	358	281	176	145	9081
ST ANTHONY UNION FEEDER																			104	107	108	104	92	99	100	102	87	85	79	96	50	1223
INDEPENDENT																			365	363	363	366	336	320	322	354	322	269	283	221	222	4177
CONSOLIDATED FARMERS																			287	289	289	262	231	262	244	251	262	222	244	168	127	3198
TOTAL DIV. STANTON TO REXBURG																			1144	1117	1136	1089	1034	956	995	1071	1035	904	887	461	1245	1245

TETON RIVER CANALS

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	TOTAL	
SIDDOWAY																			21	19	19	23	22	18	17	17	15	15	15	15	15	15	7974.1
WILFORD																			178	172	196	196	172	180	163	178	171	153	153	146	125	2173	
TETON IRRIGATION																			57	59	57	59	59	59	41	44	46	54	72	52	48	867	
GOOD LUCK																			7	7	7	7	7	6	6	6	6	5	5	5	5	5	
PIONEER																			32	31	31	31	30	25	25	27	24	20	18	17	14	316	
STEWART																			28	31	28	33	37	34	31	40	34	31	30	27	24	413	
PINCOCK BYINGTON																			47	43	41	39	39	29	27	37	30	20	25	17	14	393	
PINCOCK GARNER																			38	36	35	35	34	38	35	41	39	30	30	30	27	446	
TETON ISLAND FEEDER																			370	302	370	364	387	313	296	347	313	248	258	236	213	4118	
ROKANA																			22	22	20	25	27	26	26	26	25	21	19	15	17	296	
ISLAND WARD																			63	60	45	45	46	34	33	44	31	20	19	19	16	482	
WOODMANSEE JOHNSON																			20	19	19	19	30	26	26	27	24	21	21	19	18	299	
CITY OF REXBURG																			64	62	59	57	57	56	54	54	52	46	44	39	45	689	
REXBURG IRRIGATION																			267	267	261	258	262	231	219	230	230	185	185	145	120	2835	
TOTAL DIVERSIONS																			1244	1210	1189	1206	1089	1035	999	1124	1030	886	866	782	702	12458	

DAILY DISCHARGE IN SECOND FEET OF CANALS DIVERGING FROM HENRY'S FORK AND TRIBUTARIES FOR JUNE 1924

FALL RIVER CANALS

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	TOTAL
WELLS STONE	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24
NORTHFIELD	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
MARIONVILLE	151	156	164	173	180	183	183	183	183	183	183	183	183	183	183	183	183	183	183	183	183	183	183	183	183	183	183	183	183	183	183
TOTAL DIV ABOVE SQUIRREL	206	180	188	192	192	192	192	192	192	192	192	192	192	192	192	192	192	192	192	192	192	192	192	192	192	192	192	192	192	192	192
FARMERS OWN ENTERPRISE	34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BELL	79	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FALL RIVER	3	6	6	7	5	5	5	4	2	2	2	1	3	3	6	6	5	3	1	3	3	4	4	4	4	4	4	4	4	4	4
MCBEE	372	355	410	328	454	444	393	350	328	342	332	342	391	437	456	442	400	368	309	391	370	364	414	397	328	418	410	408	404	404	404
CHESTER	2	14	15	15	15	15	15	13	13	7	11	10	12	12	12	10	9	10	8	14	13	9	5	7	5	5	5	5	5	5	5
SILKEY	73	15	0	53	76	70	58	48	36	34	34	8	0	0	62	60	49	52	10	10	10	10	10	10	7	6	6	6	6	6	6
CURR	8	17	29	30	27	27	27	23	11	8	3	18	29	27	33	28	27	24	10	19	18	18	13	16	16	18	18	18	18	18	18
WHITE	24	47	40	30	34	34	32	28	26	27	26	34	36	34	41	34	32	31	28	32	31	30	28	32	29	32	30	30	29	30	30
TOTAL DIV SQUIRREL TO CHESTER	487	487	487	487	487	487	487	487	487	487	487	487	487	487	487	487	487	487	487	487	487	487	487	487	487	487	487	487	487	487	487

HENRY'S FORK CANALS

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	TOTAL
DEWEY	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24
LAST CHANCE	72	29	33	40	92	89	78	76	68	66	66	64	70	77	78	78	68	62	56	66	63	68	67	73	78	72	72	71	77	76	76
ST ANTHONY UNION	497	525	528	517	459	409	389	377	373	398	420	418	434	441	470	470	450	440	423	431	425	418	418	431	441	431	447	445	485	499	499
FARMERS FRIEND	149	99	84	52	65	216	221	209	188	184	107	68	0	45	62	61	39	0	40	40	44	42	28	11	95	17	25	18	15	19	19
TWIN GROVES	114	84	84	167	145	143	130	101	100	99	79	68	130	130	132	132	134	128	133	141	134	132	94	50	27	27	20	20	26	22	22
SALEM UNION	214	191	239	236	236	218	215	196	188	192	170	174	180	167	169	203	192	209	222	238	184	180	155	152	149	148	177	177	141	142	142
TOTAL DIV ASHTON TO ST ANTHONY	1072	928	968	1001	1019	1101	1056	980	945	966	867	815	830	875	933	965	907	862	892	931	867	855	777	707	800	735	706	765	765	765	765
EGIN	306	235	291	293	297	277	227	218	201	243	251	251	263	275	281	291	279	271	241	267	231	216	224	271	277	295	286	295	283	300	293
ST ANTHONY UNION FEEDER	60	68	79	86	72	63	59	37	37	32	47	54	65	66	72	74	68	52	36	57	58	53	50	48	50	32	37	34	31	31	31
INDEPENDENT	298	338	343	331	289	289	278	240	229	209	229	244	254	263	280	289	283	217	140	121	231	217	198	168	170	115	112	144	229	211	211
CONSOLIDATED FARMERS	89	220	255	103	319	262	255	268	251	184	193	140	283	246	304	268	193	116	123	293	220	190	220	172	156	142	106	93	86	85	85
TOTAL DIV STANTH TO REIBURG	753	861	928	813	977	891	819	763	718	648	720	689	865	870	937	922	823	656	560	738	740	681	493	609	683	587	535	569	632	632	632

TETON RIVER CANALS

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	TOTAL
JUDGWAY	11	11	24	19	21	19	19	18	12	11	9	9	9	10	19	18	18	17	16	13	11	11	13	12	11	11	10	10	9	8	405
WILFORD	131	129	118	88	88	101	101	94	99	102	93	88	88	97	102	91	91	90	88	84	80	81	87	92	90	83	81	83	76	76	779
TETON IRRIGATION	60	80	71	65	75	91	53	54	57	57	53	57	57	31	74	73	63	70	66	65	62	64	71	72	70	78	76	74	71	70	1925
GOOD LUCK	4	4	12	10	11	12	12	15	19	18	17	17	16	16	18	16	16	16	15	14	14	15	15	14	13	14	12	11	11	10	407
PIONEER	13	13	17	19	15	16	15	16	14	20	18	16	17	16	20	21	21	20	19	18	18	18	18	18	18	18	18	18	18	18	494
STEWART	21	18	14	13	13	13	12	12	12	7	9	14	14	14	14	17	30	29	28	27	26	25	26	26	26	26	26	26	26	26	586
PINCOCK BYINGTON	11	11	11	8	6	5	9	9	9	10	9	9	9	9	10	10	18	14	12	12	11	12	13	13	13	13	13	13	13	13	349
PINCOCK GARNER	28	18	11	16	8	6	7	5	5	17	7	13	11	11	19	21	15	16	16	14	13	10	13	13	13	13	13	13	13	13	733
TETON ISLAND FEEDER	180	185	236	283	307	302	277	269	247	205	180	170	185	185	234	261	280	280	266	242	226	234	242	239	238	228	228	228	228	228	733
ROXANA	16	14	17	18	18	17	25	25	21	23	23	15	15	10	11	12	15	16	16	16	16	16	16	17	16	16	16	16	16	16	495
ISLAND WARD	14	13	3	6	5	5	5	24	22	28	26	58	57	34	16	27	26	22	21	21	18	18	18	17	15	15	15	15	15	15	362
WOODMANSEE JOHNSON	6	7	10	28	24	25	22	21	21	20	19	15	20	21	23	23	23	22	22	22	21	19	20	20	20	20	20	20	20	20	528
CITY OF REIBURG	43	58	48	43	46	42	46	44	49	46	44	42	43	48	50	50	48	47	45	40	35	37	36	36	37	38	37	38	38	38	1252
REIBURG IRRIGATION	113	111	116	145	175	166	190	180	165	138	136	109	127	128	143	165	146	143	144	145	137	140	128	122	121	122	122	122	122	122	4122
TOTAL DIVERSIONS	631	652	708	763	812	763	793	785	752	702	653	632	668	732	783	826	810	799	771	730	682	703	714	707	643	693	642	646	615	597	21455

FALL RIVER CANALS

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	TOTAL	
YELLOWSTONE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
HARRIGFIELD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
MARYSVILLE	0	0	0	0	0	0	0	12	91	45	26	44	91	91	91	91	55	4	8	8	8	8	8	8	7	7	7	7	7	7	7	7	676
TOTAL DIV ABOVE SQUIR	0	0	0	0	0	0	0	12	91	45	26	44	100	99	99	64	4	8	8	8	8	8	8	8	7	7	7	7	7	7	7	7	630
FARMERS OWN	6	6	6	6	6	6	6	6	5	6	6	6	13	10	14	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	122
ENTERPRISE	0	0	0	0	0	0	0	0	63	113	117	115	68	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	478
BELL	2	2	5	4	4	5	5	4	1	1	1	4	4	4	4	4	4	1	0	0	0	0	0	4	4	4	4	4	4	4	4	0	0
FALL RIVER	372	370	370	370	368	374	376	376	246	246	282	272	280	284	280	276	284	372	348	360	548	328	324	360	316	314	310	312	310	322	341	1014	0
MCBEE	4	4	4	4	4	4	4	5	0	0	3	6	6	7	7	9	5	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	132
CHESTER	6	6	6	6	6	6	6	6	6	6	6	6	12	12	11	11	6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	130
SILKEY	20	22	22	21	20	21	23	24	0	5	20	9	12	12	10	12	17	4	0	0	0	0	14	15	17	17	16	15	15	23	0	0	406
CURR	31	31	30	30	30	31	32	30	22	5	19	17	19	21	17	16	21	20	24	26	24	21	25	23	24	24	24	30	26	26	26	26	744
WHITE	5	6	7	6	7	9	10	4	0	0	0	0	0	0	0	0	1	4	9	10	10	9	2	4	4	1	0	1	2	2	2	2	114
TOTAL DIV SQUIR TO CHESTER	446	447	450	447	445	456	460	455	343	382	459	435	415	350	345	338	339	408	381	396	402	358	375	404	372	365	360	362	356	376	376	12329	0

HENRY'S FORK CANALS

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	TOTAL	
DEWEY	14	20	19	19	20	20	21	20	20	20	19	20	20	20	20	16	20	21	21	23	24	24	21	21	21	21	21	21	21	21	21	21	2610
LAST CHANCE	56	38	38	38	39	40	54	54	54	51	50	46	46	47	35	44	42	9	0	58	72	70	70	70	68	66	64	64	62	61	60	1566	
STANTHONY UNION	494	429	414	416	422	427	425	398	384	384	398	395	427	425	436	431	429	407	422	432	400	398	395	395	395	387	411	411	447	461	461	12983	
FARMERS FRIEND	0	0	0	0	0	0	0	0	0	0	0	0	32	24	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	117	
TWIN GROVES	142	111	114	33	0	0	0	0	22	123	130	129	88	60	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1131	
SALEM UNION	171	180	180	45	0	0	0	0	109	227	222	232	226	239	236	152	152	136	117	119	123	124	124	124	123	123	121	141	155	140	137	4184	
TOTAL DIV ASH TO STANTH.	883	778	765	551	481	487	500	472	589	806	819	822	839	815	773	643	623	573	560	632	619	616	610	610	607	595	613	633	709	778	741	20542	
EGIN	343	287	285	295	291	291	295	277	205	208	199	192	241	299	287	279	397	208	201	295	299	301	295	291	303	291	308	297	278	259	269	8477	
STANTH UNION FEEDER	45	59	63	67	76	78	57	38	32	46	44	50	46	46	60	61	50	66	74	84	87	87	87	82	60	66	72	73	56	55	53	1394	
INDEPENDENT	170	162	162	160	170	160	162	159	148	146	133	131	115	112	121	168	179	144	127	112	148	157	201	197	197	187	132	138	115	108	138	4664	
CONSOLIDATED FARMERS	149	179	191	150	233	167	163	143	206	204	268	270	200	167	193	157	120	110	88	88	83	132	77	152	126	163	157	150	149	142	157	144	5029
TOTAL DIV STANTH TO REXB	647	687	701	672	770	690	671	637	591	604	649	643	602	614	661	665	636	523	490	579	606	622	735	716	723	701	661	657	692	579	604	2064	

TETON RIVER CANALS

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	TOTAL
SIDDOWAY	8	7	13	12	11	10	10	10	11	11	9	8	8	9	9	7	6	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WILFORD	78	80	72	71	69	71	69	73	70	68	63	63	63	78	71	62	61	63	74	69	80	74	69	67	66	64	69	53	51	49	46	2116
TETON IRRIGATION	76	73	72	70	72	70	72	70	67	63	65	61	17	0	42	51	53	63	63	63	55	67	62	63	63	60	64	57	56	60	58	1333
GOOD LUCK	12	12	11	11	11	11	11	11	12	10	9	9	9	9	9	9	9	8	8	8	9	11	10	9	8	8	9	8	8	7	7	394
PIONEER	12	12	12	12	12	13	13	13	13	13	12	11	12	11	10	10	8	8	8	8	10	12	10	10	10	10	10	17	13	9	9	347
STEWART	11	11	11	11	12	12	12	12	11	10	12	12	13	11	11	11	11	11	11	12	14	12	12	12	11	12	12	12	12	12	11	360
PINCOCK BYINGTON	7	7	7	7	6	7	7	7	7	7	8	7	7	7	7	8	8	7	7	7	9	8	7	7	7	7	5	5	4	4	4	209
PINCOCK GARNER	3	7	9	7	6	6	6	6	15	10	10	9	8	7	7	9	9	8	9	11	13	10	11	10	6	5	12	12	12	11	13	283
TETON ISLAND FEEDER	192	185	185	182	180	195	185	221	193	185	166	156	175	161	158	147	142	133	129	156	236	180	161	156	133	120	103	107	109	105	94	4933
ROXANA	14	16	16	16	16	16	16	16	16	16	13	13	11	12	11	11	11	11	11	13	13	13	2	2	1	1	9	9	6	6	6	339
ISLAND WARD	5	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10	10	10	10	10	10	10	10	10	10	10	10	281
WOODMANSEE JOHNSON	9	9	8	8	7	8	7	8	6	6	6	4	6	12	22	13	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CITY OF REXBURG	31	31	21	20	22	22	22	23	30	27	30	33	29	35	29	26	21	21	22	29	44	44	40	26	27	26	26	26	26	29	37	376
REXBURG IRRIGATION	184	119	132	132	182	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	3323
TOTAL DIVERSIONS	587	578	573	565	547	577	568	589	567	543	561	579	515	537	504	448	475	447	499	633	633	583	633	539	445	435	436	422	403	389	391	16048

DAILY DISCHARGE IN SECOND FEET OF CANALS DIVERGING FROM HENRY'S FORK AND TRIBUTARIES FOR AUGUST 1924

FALL RIVER CANALS

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	TOTAL
YELLOWSTONE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HARRISFIELD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MARTINSVILLE	0	0	0	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50	8	0	0	0	0	140
TOTAL ON ABOVE SQUIRREL	0	0	0	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50	8	0	0	0	0	190
FARMERS OWN	0	0	0	0	0	0	0	0	0	0	0	0	27	27	0	0	0	0	0	23	22	22	0	0	0	0	0	0	0	0	0	143
ENTERPRISE	0	0	0	0	0	0	71	0	0	12	12	12	87	74	75	0	0	0	0	0	0	0	0	0	0	0	0	0	24	24	0	412
BELL	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2	1	3	1	0	0	0	0	12
FALL RIVER	334	358	193	0	0	0	0	0	0	0	0	0	0	229	221	229	212	97	0	0	0	8	8	8	8	8	8	32	8	20	38	2026
MURDER	1	2	8	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18
CHESTER	0	0	0	0	0	0	0	0	0	0	0	0	5	5	5	5	0	0	0	0	0	10	10	0	0	0	0	6	6	0	0	32
SULKY	2	0	0	0	0	0	0	0	0	0	0	0	10	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17
CURR	24	24	12	18	19	20	24	24	24	23	23	23	18	12	16	24	24	24	24	24	24	24	24	24	24	22	26	23	22	22	22	683
WHITE	1	2	2	2	2	1	2	4	3	3	3	3	2	1	2	3	3	4	4	3	3	3	3	3	3	3	2	2	2	2	3	78
TOTAL ON SQUIRREL TO CHESTER	345	366	216	27	21	21	97	28	27	38	38	38	149	352	320	261	239	125	28	50	57	69	47	37	34	47	51	93	62	78	63	3443

HENRY'S FORK CANALS

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	TOTAL	
DEWEY	18	18	20	21	21	19	19	18	18	18	18	17	16	15	15	14	15	17	16	15	15	14	15	15	15	15	15	15	15	15	15	15	70746
LAST CHANCE	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	465	
STANTHONY UNION	458	414	414	431	436	429	432	422	416	416	395	387	380	377	366	351	337	353	393	354	380	382	380	345	399	310	305	299	281	273	280	11557	
FARMERS FRIEND	67	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	107	
TWIN GROVES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40	
SALEM UNION	140	145	146	144	150	145	145	144	144	144	144	133	131	127	121	126	124	126	126	120	120	123	122	111	111	111	109	109	111	117	117	3985	
TOTAL DIV ASHTON TO STANTHONY	685	677	640	670	683	667	680	662	666	654	633	611	601	590	565	537	572	573	605	539	539	537	525	466	478	440	449	435	437	440	17285		
EGIN	201	220	201	224	203	220	257	265	261	259	267	249	243	243	243	235	227	224	243	216	205	205	205	197	197	197	197	197	197	197	197	6919	
STANTHONY UNION FEEDER	50	70	77	90	82	70	63	69	69	63	100	98	94	102	99	89	99	84	97	99	98	104	104	100	94	106	104	102	97	95	97	2973	
INDEPENDENT	80	102	94	221	209	205	207	201	199	193	191	180	121	127	126	113	121	115	115	115	113	113	115	108	108	127	124	134	131	134	138	4352	
CONSOLIDATED FARMERS	144	132	143	166	140	157	139	152	145	145	144	130	130	132	106	89	83	83	100	139	140	148	150	96	50	52	46	42	37	36	36	3439	
TOTAL DIV STANTHONY TO REXBURG	475	524	521	701	654	652	671	687	674	665	702	687	608	624	598	526	530	506	545	569	556	573	543	514	540	482	471	473	464	460	49	17533	

TETON RIVER CANALS

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	TOTAL
SIDDONWAY	15	12	11	11	11	11	12	12	11	10	10	10	11	11	10	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	70746
WILFORD	38	40	40	32	22	22	23	22	22	22	21	19	24	22	22	22	21	16	16	16	17	18	9	9	7	3	3	3	3	3	3	246
TETON IRRIGATION	60	51	51	48	42	40	44	44	44	39	41	41	41	41	42	49	48	48	48	45	38	46	33	26	17	4	4	4	4	4	10945	
GOOD LUCK	7	7	7	6	4	4	4	4	3	3	3	3	3	3	3	3	4	3	3	3	3	3	3	3	3	3	3	3	3	3	1745	
PIONEER	9	10	7	7	7	8	10	12	11	11	11	11	13	13	13	13	12	11	10	10	10	10	10	11	11	11	11	11	11	11	3219	
STEWART	11	13	10	7	7	7	6	6	7	7	7	7	7	7	7	7	7	7	6	6	6	6	6	6	6	6	6	6	6	6	715	
PINCOCK BYINGTON	4	4	4	4	4	4	4	4	3	3	3	3	5	5	5	5	4	4	4	4	4	4	4	4	4	4	4	4	4	4	128	
PINCOCK GARNER	12	12	12	12	12	12	12	9	4	5	8	3	7	6	7	7	7	6	7	7	7	7	7	7	7	7	7	7	7	7	200	
TETON ISLAND FEEDER	96	90	92	82	90	90	100	86	90	88	86	86	86	86	84	75	75	68	68	71	76	80	79	79	79	75	80	80	80	82	84	2561
FOXANA	6	4	6	6	4	4	5	5	7	7	7	7	7	7	7	7	7	6	5	5	5	5	5	5	5	5	5	5	5	5	177	
ISLAND WARD	2	2	2	2	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	
WOODMANSEE JOHNSON	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	
CITY OF REXBURG	34	19	19	24	31	30	30	30	30	31	33	32	33	36	35	34	32	32	32	32	32	30	30	29	28	30	30	32	32	32	32	506
REXBURG IRRIGATION	107	109	111	100	129	120	120	116	111	114	118	118	122	111	104	105	99	105	94	94	113	104	114	114	114	114	114	114	114	114	114	5357
TOTAL DIVERSIONS	401	375	372	341	364	354	371	351	343	340	348	344	359	349	340	337	326	315	304	302	308	322	307	308	296	271	265	287	289	281	280	1077

DAILY DISCHARGE IN SECOND FEET OF CANALS DIVERTING FROM HENRYS FORK AND TRIBUTARIES FOR SEPT. 1924

FALL RIVER CANALS

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	TOTAL	
WELLSSTONE	0	5	5	5	5	5	5	5	5	5	5	4	4	4	4	4	4	4	4	5	5	5	6	5	5	5	5	5	5	5	178	
HARRISFIELD	0	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	4	4	4	4	4	4	4	4	92	
MARYSVILLE	0	8	8	8	8	8	7	8	13	13	14	15	17	24	24	24	24	24	24	24	11	10	9	11	11	11	11	11	11	11	651	
TOTAL DIV ABOVE SQUIRREL	0	15	15	15	15	15	14	15	20	20	21	21	21	24	24	24	24	24	24	21	20	20	18	20	20	27	27	27	27	74	918	
FARMERS OWN	0	7	7	7	7	7	7	7	9	9	9	13	13	13	13	13	13	13	13	9	8	9	9	9	9	9	9	9	9	9	306	
ENTERPRISE	0	64	87	87	88	88	0	0	0	29	29	28	28	29	29	40	64	65	65	45	0	0	0	0	0	94	64	71	73	74	74	121
BELL RIVER	0	0	0	0	0	2	1	1	1	1	1	2	4	4	4	4	4	4	4	4	2	2	2	2	2	2	2	1	1	2	1	56
FALL RIVER	30	8	20	38	48	52	8	154	231	227	223	216	216	214	214	204	204	212	208	10	10	10	10	10	10	189	182	185	180	178	195	2205
MURPHY	0	0	0	0	0	7	8	2	1	1	1	1	0	0	0	1	0	0	1	4	10	4	1	1	1	1	0	0	0	0	42	
CHESTER	0	0	0	0	13	15	15	13	11	12	11	10	10	10	10	10	11	12	12	18	9	9	9	9	9	9	11	11	10	10	283	
SILKEY	0	0	0	0	0	22	20	15	8	7	6	4	4	4	2	2	1	1	1	6	6	5	4	4	4	2	1	1	1	0	0	181
CURR	22	22	20	19	24	25	25	23	21	20	18	18	18	11	10	9	8	8	7	10	21	20	20	17	14	9	7	6	4	4	4	463
WHITE	4	4	3	3	4	6	5	4	1	1	0	0	0	0	0	0	0	0	0	6	4	5	4	4	4	4	1	1	0	0	0	64
TOTAL DIV SQUIRREL TO CHESTER	56	95	137	154	184	193	189	221	283	307	302	292	293	285	282	283	304	315	310	116	70	64	59	56	268	277	290	285	281	276	276	276

HENRYS FORK CANALS

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	TOTAL
DEWEY	9	9	8	8	15	2	2	0	0	1	3	3	4	3	6	4	5	5	6	6	5	5	4	4	9	12	12	11	11	10	182
LAST CHANCE	21	25	22	21	20	19	18	16	16	17	17	17	16	17	17	18	19	20	22	18	15	13	19	14	12	12	9	11	12	506	
STANTHONY UNION	274	276	271	269	217	215	215	206	203	206	206	205	188	188	188	190	190	190	192	188	185	200	196	193	183	183	208	206	206	206	6202
FARMERS FRIEND	28	30	29	29	4	4	4	4	4	20	33	33	40	40	40	40	40	45	38	5	5	5	5	5	5	5	37	32	22	22	615
TWIN GROVES	30	27	27	27	4	4	4	4	4	4	4	15	27	26	27	27	27	28	26	5	5	5	5	5	5	5	23	21	21	21	440
SALEM UNION	31	50	46	44	41	42	41	40	36	49	56	56	56	56	50	50	50	50	50	44	34	32	32	32	32	32	32	32	32	31	1279
TOTAL DIV ASHTON TO STANTHONY	410	417	403	350	301	286	284	270	263	297	319	329	331	330	328	329	330	337	332	270	250	262	255	263	258	254	304	303	303	304	9272
EGIN	195	190	176	176	183	177	177	174	174	117	117	117	117	117	134	135	147	145	143	150	155	148	140	126	126	126	126	126	126	126	4402
STANTHONY UNION FEEDER	90	100	96	98	94	88	87	83	82	77	77	78	64	60	58	58	66	72	67	84	79	75	64	73	62	54	50	43	47	46	2172
INDEPENDENT	131	106	60	60	63	60	60	100	97	98	85	84	88	78	72	72	70	97	88	115	127	115	148	153	151	146	144	136	141	141	3081
CONSOLIDATED FARMERS	62	96	98	86	74	52	29	28	59	101	101	101	101	101	101	101	101	101	101	68	36	36	36	36	36	36	36	36	36	36	2149
TOTAL DIV STANTHONY TO REAR	478	492	430	420	414	377	353	335	325	412	393	350	365	356	365	366	384	415	399	417	397	374	388	388	377	362	373	374	390	395	11804

TETON RIVER CANALS

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	TOTAL
SIDDOWAY	0	0	0	0	8	8	8	8	8	8	8	8	8	8	8	7	7	7	6	7	7	7	6	6	6	6	6	11	11	11	784
WILFORD	7	10	10	10	10	10	11	10	10	10	10	10	10	10	10	10	9	9	10	10	10	10	10	38	39	40	42	44	44	45	323
TETON IRRIGATION	4	4	7	44	42	44	44	36	35	36	23	14	14	13	13	10	17	24	28	28	28	28	27	28	26	34	35	32	35	779	
GOOD LUCK	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	5	
PIONEER	12	12	12	11	12	13	13	12	13	11	11	11	11	11	7	7	6	6	6	6	6	6	4	4	11	11	11	11	11	9	227
STEWART	6	6	6	6	6	7	7	6	6	6	6	6	6	6	7	7	7	7	7	6	6	6	3	3	9	9	9	9	9	9	199
PINCOCK BYINGTON	0	0	0	0	0	0	0	0	0	4	4	3	5	5	5	1	1	1	1	1	1	1	1	1	1	1	1	1	6	5	32
PINCOCK GARNER	6	6	6	6	6	6	6	6	5	5	6	6	6	6	6	5	3	4	3	3	4	1	13	11	10	13	14	13	13	13	311
TETON ISLAND FEEDER	79	75	79	79	82	94	98	80	86	90	133	138	142	142	138	163	147	149	173	170	168	144	188	182	180	159	133	100	113	118	564
ROKANA	4	4	3	3	3	4	4	4	4	4	4	4	4	4	4	5	5	5	6	6	6	7	7	6	6	5	5	4	4	139	
ISLAND WARD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WOODMANSEE JOHNSON	20	20	18	20	18	20	20	7	9	12	9	4	5	4	4	4	3	3	3	3	3	3	4	6	6	6	6	6	11	11	26
CITY OF REKIBURG	6	6	7	7	22	22	16	22	22	23	23	21	21	21	22	15	17	18	18	18	20	18	16	18	12	13	13	13	13	11	48
REKIBURG IRRIGATION	134	136	104	105	105	102	107	104	111	118	118	111	109	109	105	93	98	96	91	90	90	86	86	84	73	71	73	70	74	75	29
TOTAL DIVERSIONS	281	280	253	292	315	331	335	296	310	328	361	339	342	340	350	328	321	330	353	348	350	318	326	311	320	323	320	351	357	360	977

unsatisfactory because of the crude facilities afforded for division of the water between the north and south channels. Regulation at this point could only be secured by the expensive and laborious process of adding or removing rock and brush at different points on a sort of makeshift community dam. When one group of users succeeded in diverting a larger proportion of the flow into their channel it necessarily reduced the supply in the other branch. Canals having their headings in the latter were then apt to retaliate by further work at the dam. Since the water is not decreed at this point of division but rather at the heads of the individual canals, regulation by deputy water master Dawson was limited to the latter, although advice as to the control at the forks was frequently given. The obvious remedy for this situation would be the construction of a permanent dam and easily operated controlling works; in which case, equitable division between the two channels might be added to the regular duties of the river deputy.

While the 1924 season was one of light crop production for the area supervised from the St. Anthony office when taken in its entirety, the available water supply is believed to have been distributed and applied more efficiently than for several years. The early season warnings of the impending shortage were generally heeded and where even small amounts of water were obtainable during the latter part of the summer, good crops were usually secured. The vital necessity of attempting to secure storage for the use of both Fall and Teton River canals was again most forcibly emphasized.

Actual deliveries to the canals diverting from Henrys Fork, Fall and Teton Rivers are shown on Plates XIX, XX, XXI, XXII and XXIII. On May 19 and 20 daily readings were not secured for some of the canals, but discharges have in all such cases been completed by interpolation. In the matter of recomputation of data as well as in other respects, the records here presented correspond and are consistent with those contained on Plates III, IV, V, VI and VII.

Plates XXIV and XXV summarize data in regard to the flow of the three principal streams, diversions therefrom, losses and gains throughout different sections, in so far as it is practicable to show all these facts from the existing records.

The time interval basis used for the computation of records from the river gaging stations as presented in these tables is as follows:

DAILY SUMMARY OF DATA AT AND BETWEEN GAGING STATIONS ON HENRY'S

NO. DISTRIBUTION WATER DISTRICT NO. 36

HENRY'S LAKE RESERVOIR										LAKE STATION										WARM RIVER STA.										ASHTON STATION										FALL RIVER										ASHTON																																																																																																																																																																																																																																																																																																																																																																																																																																				
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HENRY'S FORK

THEO. BAL. AT ST. ANTH.	ST. ANTHONY STA.				GAIN ASH. TO ST. ANTH.	DIVERS BELOW ST. ANTH.		THEO. BAL. BELOW DIVERS	EST. BAL. BELOW DIVERS
	GAGE	DISCH	STOR.	NOR.		STOR.	NOR.		
1387	379	1540		1540	153		1117	423	
1288	372	1430		1430	142		1136	294	
1157	365	1320		1320	163		1069	251	
1381	379	1540		1540	159		1084	456	
1215	367	1350		1350	135		956	394	
937	354	1160		1160	223		995	165	
1076	363	1290		1290	214		1071	219	
1228	366	1330		1330	102		1035	295	
944	347	1060		1060	116		934	126	
862	343	1010		1010	148		887	123	
576	328	834		834	258		661	173	
400	320	750		750	350		560	190	
561	314	693		693	132		753	-60	0
753	325	802		802	49		861	-59	0
858	342	996		996	138		988	8	0
1079	356	1170		1170	91		813	357	
1281	370	1400		1400	119		977	423	
1159	369	1380		1380	221		891	489	
937	349	1090		1090	153		819	271	
711	331	866		866	155		763	103	
591	319	740		740	149		718	22	0
504	310	655		655	151		668	-13	0
606	314	693		693	87		720	-27	0
575	315	702		702	127		689	13	0
710	328	834		834	124		865	-31	0
859	340	970		970	111		870	100	0
885	342	996		996	111		937	59	0
835	343	1010		1010	175		922	88	0
723	330	855		855	132		823	32	0
576	315	702		702	126		656	46	0
402	303	596		596	194		560	36	0
578	314	693		693	115		738	-45	0
551	316	712		712	161		740	-28	0
509	313	684		684	175		681	3	0
525	311	664		664	139		693	-29	0
523	312	674		674	151		659	15	0
398	311	664		664	266		683	-19	0
397	296	540		540	143		587	-47	0
327	293	518		518	191		535	-17	0
366	290	495		495	129		569	-74	0
495	304	604	26	518	109	64	568	-28	0
565	313	684	198	486	119	67	693	-76	0
427	309	646	227	419	219	15	652	-21	0
527	307	630	168	462	103	56	631	-57	0
563	311	664	199	465	101	45	656	-37	0
777	323	782	190	592	5	219	453	110	
867	332	878	261	617	11	321	449	108	
906	338	947	289	658	41	241	449	257	
931	342	996	245	751	65	227	444	325	
1081	350	1100	259	841	19	184	453	463	
821	325	802	315	487	-19	6	585	211	
589	316	712	375	337	153	4	600	108	
524	306	621	200	421	97	68	581	-28	
496	302	587	217	370	91	70	573	-56	
456	296	540	216	324	84	0	602	-62	
574	301	578	133	445	4	166	448	-36	
664	309	646	-136	782	-18	234	427	-15	
752	310	655	-48	703	-97	243	422	-10	
725	309	646	-57	703	-79	84	602	-40	
786	312	674	70	604	-112	133	395	146	
733	318	731	59	672	-2	117	373	241	
713	326	813	81	732	100	122	457	234	
985	340	970	220	750	-15	173	493	304	
1005	344	1020	220	800	15	125	497	398	
1048	342	996	255	741	-47	161	574	261	
1020	342	996	169	827	-24	116	600	280	
1000	341	983	118	865	-17	141	582	260	
987	335	912	23	889	-45	123	578	211	
874	327	824	17	807	-50	91	571	162	

PLATE NO. XXIV

TETON RIVER				THEO. BAL. HENRY'S STATION + TETON RIVER	HEN. FK. NR. REXBO	GAIN BELOW ST. ANTH.	
ST. ANTH. STA.			THEO. BAL. BELOW DIVERS	EST. BAL. BELOW DIVERS			
GAGE	DISCH.	DIVERS					
202	1410	1210	200		623	663	40
195	1370	1189	181		475	645	170
195	1370	1206	164		415	574	159
191	1340	1189	151		607	711	104
154	1110	1033	75		469	697	223
138	1020	999	21		186	591	405
162	1160	1124	36		256	583	328
154	1110	1038	72	*	367	650	283
122	923	886	37		163	587	424
117	894	866	28		151	661	410
105	825	792	33		206	536	330
088	729	708	21		211	511	300
082	696	661	45		-15	466	481
078	674	652	22		-37	526	563
070	740	708	32		40	586	546
110	853	763	90		447	646	199
120	911	812	99		522	706	184
116	888	769	119		608	816	208
114	877	793	84		355	765	410
107	836	785	51		154	663	509
096	773	752	21		43	609	566
087	723	702	21		8	569	561
077	668	653	15		-12	536	548
075	657	632	25		38	507	469
081	690	668	22		-9	482	491
096	773	732	41		141	482	341
110	853	783	70		129	519	390
114	877	826	51		139	587	448
114	877	810	67		99	552	453
109	848	799	49		95	511	416
102	808	771	37		73	494	421
093	757	730	27		-18	507	525
086	718	682	36		8	498	490
085	712	703	9		12	490	478
089	734	716	18		-11	470	481
094	762	707	55		70	462	392
089	734	663	71		52	451	399
087	723	693	30		-17	439	456
086	718	642	76		59	413	354
083	701	646	55		-19	394	413
080	684	615	69		41	405	364
076	663	597	66		-10	391	401
074	652	587	65		44	398	354
070	630	573	57		0	401	401
069	625	573	52		15	398	383
069	625	565	60		170	409	239
069	625	547	78		186	478	292
075	657	577	80		337	600	263
075	657	568	89		414	663	249
086	718	639	79		542	826	284
080	684	589	95		306	668	367
071	636	567	69		177	557	380
065	604	542	62		34	494	460
061	583	561	22		-34	478	512
064	598	519	79		17	459	442
065	604	515	89		53	435	382
060	578	537	41		26	470	444
055	552	504	48		38	482	444
053	542	448	94		54	462	408
046	507	475	32		178	443	265
045	502	447	55		296	578	282
051	532	499	33		267	687	420
074	652	633	19		323	721	338
078	674	563	111		309	765	256
065	604	533	71		332	721	389
057	562	506	56		336	726	390
053	542	468	74		334	716	382
049	522	438	84		295	678	383
048	517	436	81		243	618	375

* TETON RIVER PRACTICALLY DRY BELOW ALL DIVERSIONS AFTER MAY 27.

CONVENTION WATER DISTRICT NO.36

HENRYS FORK

FALL RIVER

[illegible]

HENRYS FORK

TETON RIVER

HENRYS FORK											TETON RIVER					THEO BAL. HENRYS STANTH + TETON RIVER	HEN. FK. NR. REYBAG	GAIN BELOW ST. ANTH.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
DIVERS ABOVE STANTH	DIVER NO.	THEO BAL AT STANTH	ST ANTHONY STA.				GAIN ASH TO STANTH	DIVERS BELOW STANTH		THEO BAL BELOW DIVERS	EST BAL BELOW DIVERS	ST ANTH. STA.			THEO BAL BELOW DIVERS				EST BAL BELOW DIVERS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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Time from Henrys Lake in hours	Gaging Station	Period used for comparable daily means
0	Henrys Lake Outlet near Lake	Day ending at 2 p.m.
40	Henrys Fork at Warm River	Day ending at 6 a.m. 2nd day following
50	Henrys Fork near Ashton	Day ending at 4 p.m. 2nd day following
	Fall River near Squirrel	*Day ending at 10 a.m. 2nd day following
	Fall River near Chester	Day ending at 5 p.m. 2nd day following
54	Henrys Fork at St. Anthony	Day ending at 8 p.m. 2nd day following
	Teton River near St. Anthony	Day ending at 6 p.m. 2nd day following
66	Henrys Fork near Rexburg	Day ending at 8 a.m. 3rd day following

*Approximate means used. No recording gage records available.

This schedule is so arranged as to make the data correspond to the river records on Plates VIII, IX and X. The dates indicated on the tables are for the nearest midnight to midnight or calendar days.

In the column headed "Est. Bal. Below Divers." zero discharge is indicated for Henrys Fork on 27 days in June and July when the dam of the Consolidated Farmers Canal is known to have been tightened up to divert all the water possible. In addition to this period the stream is believed to have been practically dry from July 11 to 17 and perhaps also on one or two other days. Actual continuous measurement of the water wasting past the last dam is not considered practicable and for this reason estimates have only been included for days when either personal inspection was made or other reliable information secured.

A somewhat similar situation exists with respect to the measurement of water passing the last diversion dams on Teton River but here waste, other than small amounts of return flow entering too near the mouth to be again

used in that section, was practically nil after May 27. The fact that a theoretical balance averaging slightly more than eighty second-feet is shown for this period is an indication of comparatively heavy channel transmission losses. A considerable portion of the lower Teton lands are known to sub-irrigate, hence at least part of these losses doubtless represent water beneficially applied for irrigation in this way.

In order to avoid complication of records, all Jackson Lake storage transferred upstream, by exchange, to canals in the Henrys Fork area is included with the normal flow diversions as listed. Therefore the stored diversions refer only to water from Henrys Lake Reservoir.

Plate XXVI contains a curve showing the way in which storage was drawn from Henrys Lake Reservoir together with actual total and computed normal flow hydrographs for Henrys Fork at the Lake, Warm River and Ashton gaging stations. These graphs are all plotted with time interval adjusted to coincide with the nearest calendar day at the Ashton station.

At low reservoir stages the gage at the dam became an unsatisfactory index of capacity—presumably because of the water surface slope in the comparatively narrow outlet between the lake and the dam. For this reason considerable uncertainty exists as to the exact amount of storage drawn off each day during the latter part of the season and the reservoir graph is consequently shown as a broken line after August 7.

Comparison of the graphs for the three river stations shows that while the Warm River records are fairly consistent with those for the Lake station, many irregularities appear at Ashton. Without doubt these can be attributed to interference with stream flow at the Ashton power plant, where a sufficient storage capacity exists to easily account for these discrepancies through failure of the operators to always release the same amount entering the



impounding basin.

The computed normal flow graphs appear to be somewhat more reasonable than those of 1923 but they still show a slight tendency to diminish as the amount of storage released increases. The opposite trend is also noted quite generally, coincident with decreases in total stream flow. Prior to the 1924 release of stored water a new and more direct outlet channel was constructed through a large portion of the Henrys Lake bottom land and this eliminated much, but not all, of the former lag attributable to the flooding of meadows and other low ground.

HENRYS LAKE STORAGE DELIVERIES

That the 1923-24 Henrys Lake storable run-off was exceptionally small is at once evident from the fact that the amount impounded between the time the outlet gates were shut down late in September and the following May when they were again opened to allow the passage of normal flow totalled only about 16,000 acre-feet. It was therefore particularly fortunate that an unused surplus or hold-over of about 32,000 acre-feet remained at the close of the 1923 irrigation season.

The reservoir was operated in practically the same manner as during the preceding year until about the middle of August, after which the amount of stored water released was limited by the carrying capacity of the outlet channel between the lake and the dam. Difficulty was also experienced with floating islands of sod and brush which drifted into this outlet and caused partial stoppage of the flow until they were removed. Beginning August 12 or 13 the gates were raised and kept clear of the water surface until about 8:00 P.M. on September 8 when, with a little more than 5000 acre-feet of supposedly usable storage still remaining in the reservoir, they were shut down to the extent necessary to allow only normal flow to pass the dam. Orders

to begin storing water for the 1925 season were forwarded on October 3.

Plate XXVII contains the final summary account of all stored water released from Henrys Lake. Head-gate deliveries to the respective canals are shown for actual diversion dates.

Where a minus quantity is given on the "Unused Storage" line an excess storage delivery is indicated, or, in other words, normal flow was actually delivered to the canals instead of storage. This line shows at a glance the irregularities of delivery, together with the compensating character of the individual day errors. The algebraic total of unused storage for the entire period indicates encroachment upon normal flow rights to the extent of only 337 acre-feet—an amount well within the limits of error to be expected in river operation. During July 8-10 a part of the storage in transit was purposely held back at the Ashton power dam and this was turned down in addition to the regular flow July 14-16. This transaction accounts for the largest variations between the available and delivered storage.

The small amount charged against the Marysville Canal was handled through an exchange of water in the manner previously described in this report. No storage was required by the St. Anthony Union system.

The maximum indicated daily delivery amounted to 651 second-feet but more than 600 second-feet was actually used on seven different days. The amount available at the Ashton station, on the other hand, exceeded 600 second-feet on only two days although the maximum was almost the same as the greatest daily draft. It would seem therefore, that if future requirements are to be filled from this source, the channel between the lake and the dam should be deepened and enlarged to the extent necessary to permit heavier storage withdrawals at medium and low stages.

HENRYS LAKE STORAGE DELIVERIES - 1924.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total						
MARYSVILLE																																	1096					
DEWEY		5	4	4	20	20	16	15	5	6	4	5	5	15	16	11	15	16	16	16	19	19	16	16	16	14	12	12	13	13	13	13	13					
LAST CHANCE		25	23	33	30	31	49	31					46	22	23					53	71	71	65	70	68	67	64	61	40	50	29	21						
SALEM UNION																				119	123	124	124	123	123	121	141	135	140	137	140	145	146	144	150			
EGIN																																	24	3				
INDEPENDENT	64	67	15	56	45	149	160	144	101				89	121	166	44	23	29	34	41	48	39	40	58	46	21	28	24	30	53	80	98	91	221	209			
CONSOL FARM.										4	68	70	77	113	77	40	110	88	88	132	77	72	76	83	77	70	69	62	77	64	144	132	149	146	140			
TOTAL DELIVERIES	64	67	15	86	72	256	371	292	292	230	23	101	117	25	5	227	508	429	251	285	380	312	386	334	366	326	348	317	288	311	295	280	291	385	287	421	610	599
UNUSED STORAGE	122	131	121	112	154	29	60	140	118	135	130	137	1132	1147	1216	33	370	291	191	63	58	41	147	195	194	153	23	100	74	46	55	68	34	64	114	65	174	290
AVAIL AT ASHTON	36	38	227	198	226	227	311	340	310	305	232	472	249	222	221	194	138	132	110	222	192	271	433	433	460	379	325	217	214	265	238	212	264	316	396	396	476	509

	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42			
MARYSVILLE																																								
DEWEY	19	19	13	13	13	13	12	11	10	2	9	10	12	11	10	10	9	10	10	5	8	6	3	0	5	5	4	4	3	3	10						149	293		
LAST CHANCE	74	84	78	78	76	76	74	74	71	61	66	76	77	70	60	52	50	44	43	35	33	26	71	45	46	52	41	15									738	1414		
SALEM UNION	145	145	144	144	144	144	133	131	127	131	126	124	126	114	110	103	95	96	83	78	71	62	64	68	71	77											2942	5637		
EGIN	20	57	65	61	59	67	49	63	63	63	35	27	24	43	16	5	5	14	12																		5930	11762		
INDEPENDENT	205	207	198	190	183	191	141	101	111	97	99	121	58	111	104	97	107	105	62	37	79	67	71	45	46	22	11										775	1537		
CONSOL FARM	157	139	152	145	145	144	130	130	132	106	89	83	83	51	65	60	54	48	96	50	52	46	47	37	36	17	2	46	11								5314	10213		
TOTAL DELIVERIES	620	651	650	631	620	635	539	510	514	460	424	441	380	400	365	327	320	317	306	205	243	207	253	195	204	173	58	65	14	3	13						21096	41843		
UNUSED STORAGE	179	183	176	179	172	171	158	141	131	111	97	99	121	58	111	104	97	107	105	62	37	79	67	71	45	46	22	11									-170	-337		
AVAIL AT ASHTON	491	568	624	650	568	524	491	473	456	427	399	445	427	396	362	317	292	273	264	239	220	204	182	162	143	127	111	93	86	72	69	62	44	41	39	33	27	4	20926	41506

The exact method used in the final segregation and summary of Henrys Lake storage is described as follows:

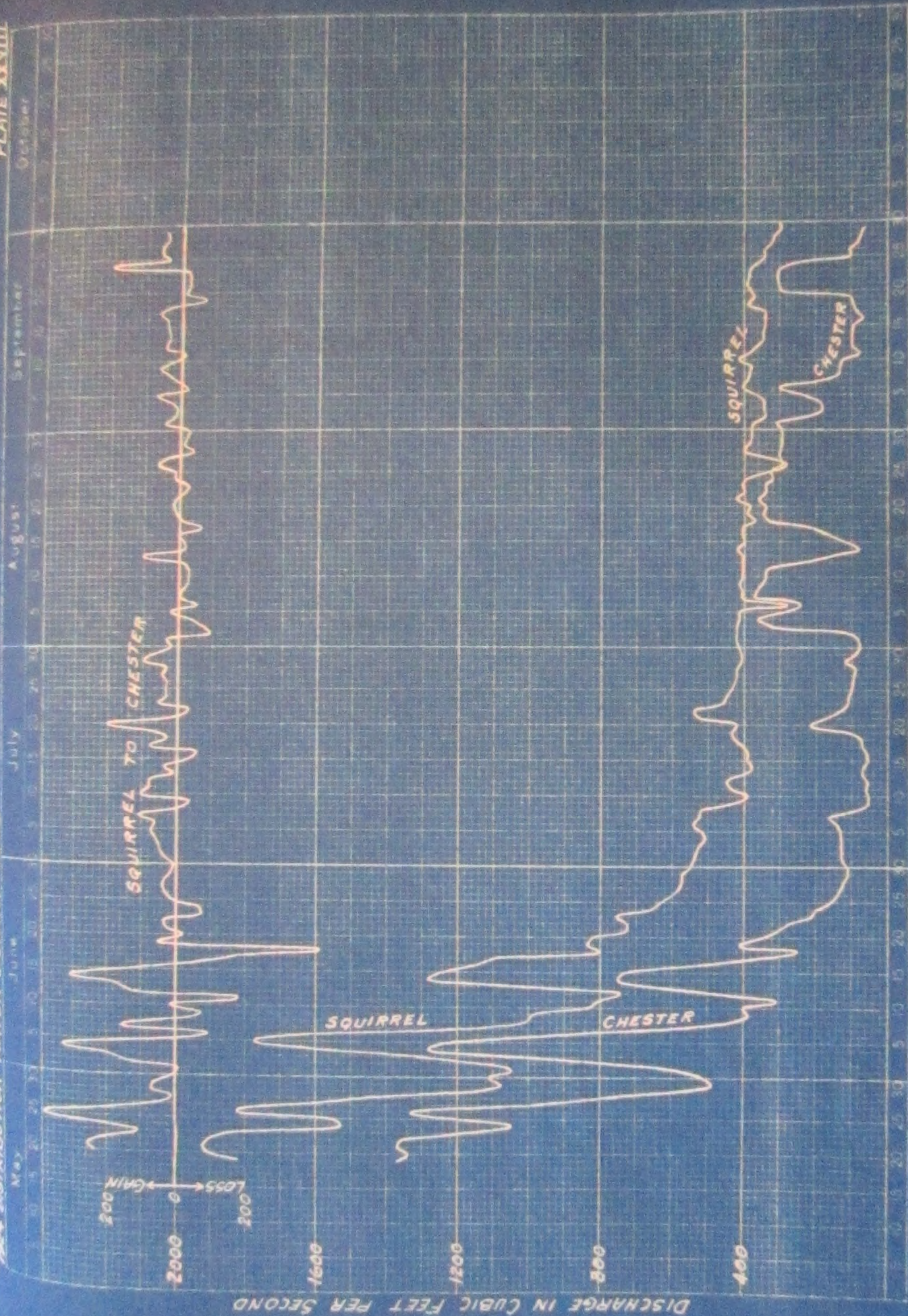
(1) The amount of stored water released from the reservoir each day prior to August 6 (Lake date) was determined from the capacity tables by noting the quantity corresponding to the daily decrease in stage indicated by the lake gage readings. Short period interpolations or adjustments were sometimes required in order to eliminate irregularities presumably attributable to wind effect. (This is the Jackson Lake method). Beginning August 6 the normal flow at the Lake gaging station was estimated—chiefly upon the basis of tributary inflow measurements made just before that date by Mr. Black and upon changes in weather conditions. The difference between this amount and the total flow past the station was then assumed to represent storage.

(2) 1.5 per cent was deducted between the lake and the Warm River gaging station and an additional 0.5 per cent between the latter point and the Ashton station, for transmission loss. While these losses correspond with the recommendations submitted by Consulting Engineer R. I. Meeker on August 14, 1923, they are almost purely arbitrary in character since no data have as yet been secured to afford a basis for any scientific determination.

Plate XXVIII contains hydrographs for the two gaging stations on Fall River and a graph showing indicated net gains or losses above the lower or Chester station. These are plotted to coincide with the dates at the upper station.

The average net gain between these two stations is much smaller than that noted in former years, a fact directly attributable to the marked deficiency in the water supply to which the Fall River canals were entitled.

Some of the irregularities in these curves are rather hard to explain, but it seems probable that most of them are due to the inaccurate daily mean



discharges computed for the Squirrel station which is not equipped with a recording gage.

The hydrograph for the Rexburg station and graphs showing gains and losses on Henrys Fork above and below St. Anthony are included on Plate XXIX. These curves are all plotted to agree with the Rexburg dates.

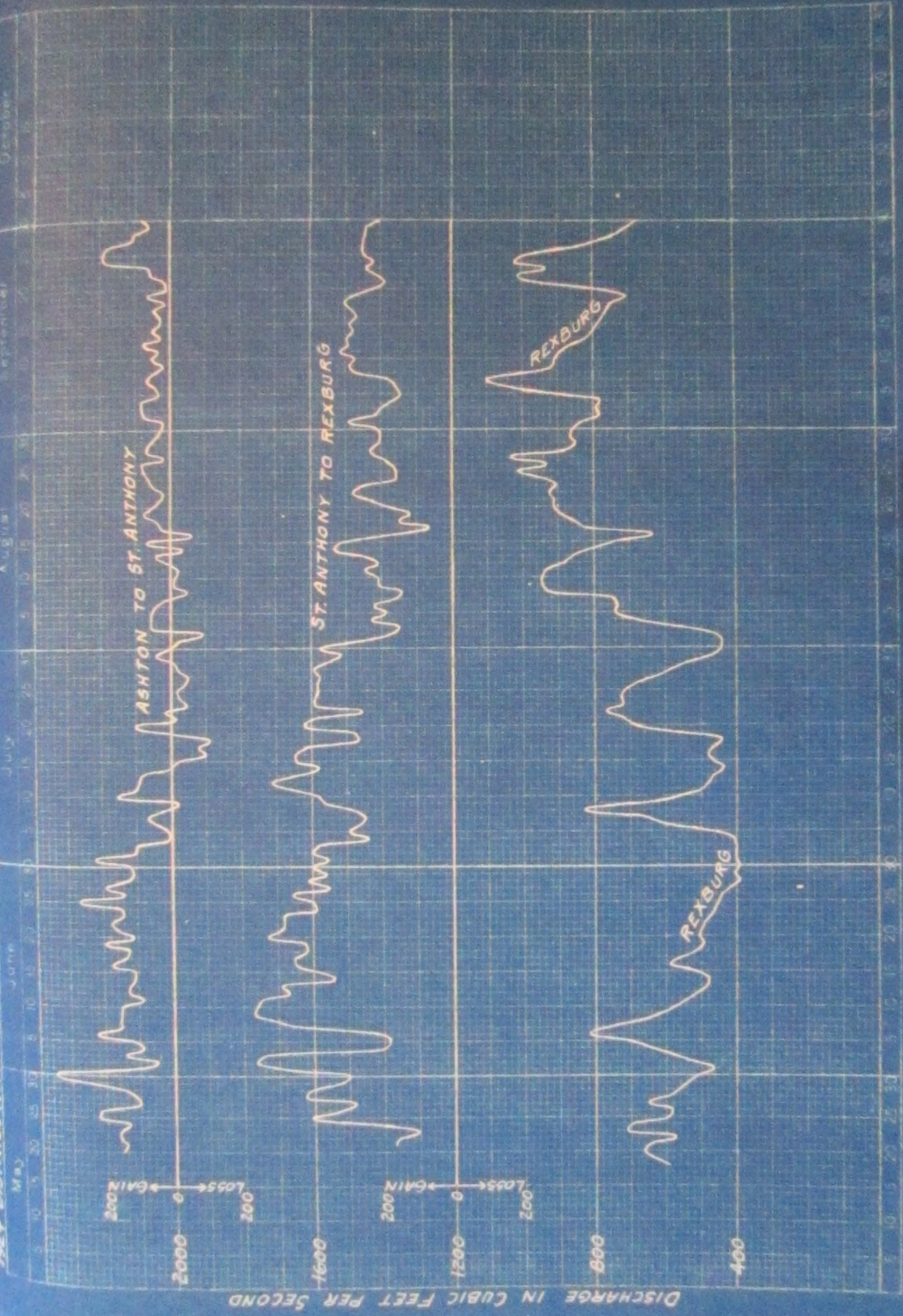
The relatively well sustained return flow shown throughout the month of June is probably the result of unusually heavy use of water during April and May, while the material decrease in this item indicated later in the season reflects the smaller canal diversions then necessitated by the general shortage.

Attention is directed to the uniformly low discharge at the Rexburg station throughout the ordinary May and June high water period.

DISTRIBUTION IN SWAN VALLEY

Swan Valley water distribution was handled in practically the same manner as during the four previous years. A deputy water master was appointed for this section, but his salary and other expenses incident to the work were paid directly by the local water users; hence, no charges against the canals in this area were included in the annual water master's bill. Copies of instructions regarding cuts and reinstatements were forwarded to this deputy, who was directed to regulate diversions in accordance with these orders.

By the early part of August rights had been cut to such an extent that most of those on Rainy Creek were invalid. The question then arose as to whether, because of supposedly very heavy channel losses, between the lower end of the canyon and the mouth of the stream, the river would receive any material benefit if the canals which diverted at the upper point were actually deprived of what little water they could get out of the stream at that



time. Most of the local residents were of the opinion that the losses would be sufficient to absorb the entire available flow, but since this was not conclusively proven, arrangements were made for an actual test which was carried on August 11-13 under the supervision of Deputy Water Master Burton and one of the hydrographers detailed from the Idaho Falls office. This test showed that over 50 per cent of the water turned back into the stream at the canal headings reached Snake River in about 24 hours, in consequence of which the cuts were continued in effect.

Thereafter water was contributed through the pooling committee to both Rainy and Palisade Creek canals in sufficient amount to protect orchard trees and small garden patches from serious loss.

DISTRIBUTION ON SAND CREEK, FREMONT COUNTY

Distribution of Sand Creek water in Fremont County was provided for in the manner followed for the Swan Valley section. Hysum E. Bowman, who was appointed as Deputy Water Master, apparently succeeded in making the necessary apportionments and cost adjustments locally since no request for other assistance was received. As explained in previous reports, this stream is not a surface tributary to Henrys Fork during periods when the use of water for irrigation is in any way limited.

CLIMATOLOGICAL DATA

Study of the U. S. Weather Bureau monthly and annual climatological summaries covering the twelve months ending September 30, 1924 affords much information of interest and serves to explain many phases of the water supply deficiency which might otherwise be difficult to understand.

The following notes from the Idaho and Wyoming section reports will

serve to emphasize the principal monthly peculiarities:

- October 1923. Precipitation above normal except extreme upper portion of Snake River drainage where slight deficiencies were recorded.
- November 1923. Average temperatures above normal. Precipitation short over entire area.
- December 1923. Both temperature and precipitation nearly normal.
- January 1924. Dry and cold. The Idaho report says,—"It was the driest January since 1902" and "Only four times in the thirty-one years of record for January has a lower mean temperature for the State been recorded."
- February 1924. The warmest February for many years but deficient in precipitation.
- March 1924. Cold and dry. For Idaho "the driest March since 1914."
- April 1924. Mean temperature nearly normal. The Idaho report shows "It was the driest April the State has experienced in the 31 years for which records are available."
- May 1924. "This was with but one exception, May, 1897, the warmest May of record for Idaho, and without exception, by a considerable margin, the driest May. It was the seventh consecutive month with less than normal precipitation and as a consequence drought prevailed generally in all the dry land areas. The demand for irrigation water was heavy while the level of water in storage reservoirs was generally far below normal for the season. Many water courses were already dry and the run-off in the larger streams was the least in many years. It was entirely too dry for the best crop progress. Germination was slow and very irregular, due to dry soil. In the irrigated districts late sown seed had to be irrigated up, never a satisfactory process."
- June 1924. Practically normal as to temperature. The Wyoming report says "June, 1924 was unusually dry." In Idaho "It was another dry month, the eighth consecutive month with less than normal precipitation. Drought conditions were acute over practically the entire State."
- July 1924. Conditions more nearly normal both as to temperature and precipitation.
- August 1924. Another month of subnormal precipitation. About average temperature.
- September 1924. The eleventh consecutive month with less than normal precipitation for the State of Idaho as a whole. Weather conditions were in the main favorable for the maturing of crops.

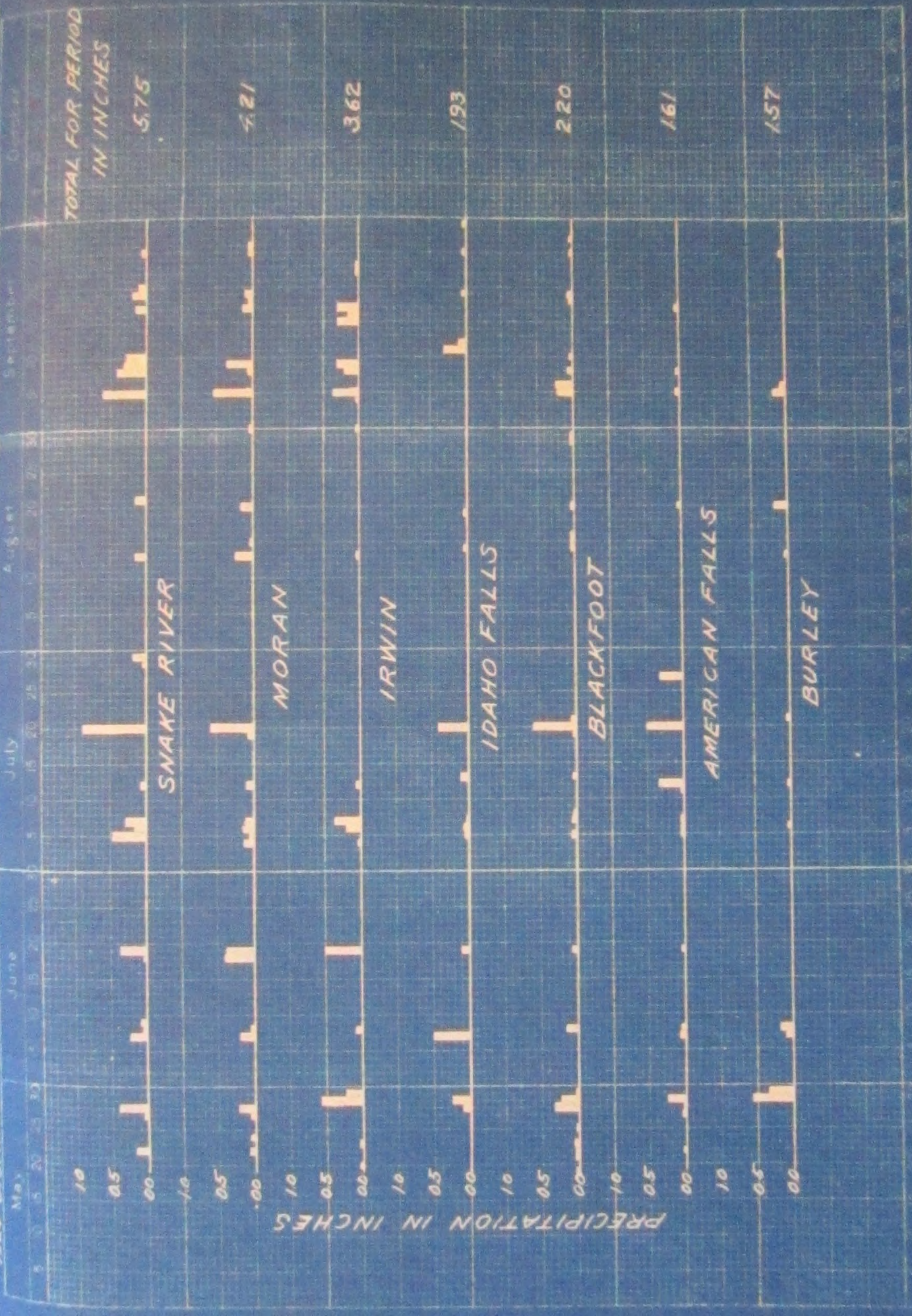
The amount and distribution of precipitation at the principal observation points throughout District No. 36 territory is shown graphically for the 1924 water regulation period on Plates XXX and XXXI.

The record at the Riverside station near the west entrance to Yellowstone National Park is not altogether consistent with those for the other stations and probably should be eliminated from comparative studies since it is the only one shown for a location outside the Snake River drainage area.

The following table summarizes precipitation data for Snake River, Moran, Irwin, Ashton, Idaho Falls, Blackfoot, Pocatello, American Falls and Twin Falls by months for the year ending September 30, 1924:

Month	Total Number of Stations	Number Above Normal	Number Below Normal	Monthly Aver. Precip. in inches for all Years of Record	Average Precip. in inches for specific month	Mean Departure from Average Amount in inches
1923						
October	9	5	4	1.315	1.952	+0.637
November	9	0	9	1.258	0.551	-0.707
December	9	4	5	1.324	1.430	+0.106
1924						
January	9	0	9	1.875	0.632	-1.243
February	9	1	8	1.402	0.833	-0.569
March	9	0	9	1.673	0.792	-0.881
April	9	0	9	1.351	0.708	-0.643
May	9	0	9	1.824	0.438	-1.386
June	9	0	9	1.302	0.465	-0.837
July	9	4	5	0.910	1.044	+0.134
August	9	1	8	0.763	0.120	-0.643
September	9	3	6	<u>1.084</u>	<u>0.924</u>	<u>-0.160</u>
			Total	16.081	9.889	-6.192

It is interesting to note that this representative group of nine widely scattered observation stations, at which records have been obtained over a period ranging from 13 to 29 years each, show a total precipitation for this twelve month period amounting to 61.5 per cent of the normal amount in comparison with an indicated run-off for the same period totalling 59 per cent of a 21 year average (see pages 13-14).



SECTION 11 - SNAKE RIVER AREA
WATER DISTRICT NO. 36

NEW DISTRIBUTION WATER DISTRICT NO. 36

PLATE NO. XXX

Records at Moran, Wyo. which are considered especially important because of their direct applicability to conditions at Jackson Lake Reservoir, show that, with the single exception of December 1923, the precipitation was less than the average during every month from July 1923 to September 1924, inclusive. Precipitation at this station alone for the twelve months previously listed amounts to 63.5 per cent of a 13 year average.

The very general drought experienced during the spring months accounts to a large degree for the 1924 crop shortage through the resultant poor seed germination and increase in destructive insect pests.

EVAPORATION

The evaporation records available for stations within or close to District No. 36 territory have been tabulated for 1924 and are presented on Plate XXXIII in substantially the same form used in the 1922 and 1923 reports.

No attempt has been made on this plate to apply any coefficients to reduce the records to a comparable basis; hence, the following information concerning the different stations is listed for the benefit of those who may desire to make practical application of the data.

Arrowrock, Deer Flat and Jerome

Class "A" stations of the U. S. Weather Bureau, equipped with a galvanized iron evaporation pan 48 inches in diameter and 10 inches deep, placed with the bottom level with the ground. The depth of water in the pan is maintained at 6 to 8 inches and the evaporation is measured with a Marvin hook gage and still-well. A Robinson cup anemometer, maximum and minimum thermometers and standard 8 inch rain gage complete the station equipment.

Jackson Lake

ROUND PAN. This pan corresponds in size and mounting to the U. S. Weather Bureau standard above described. Observations were made by the cup method.

SQUARE PAN. Equipped with a pan constructed by lining a box with zinc and soldering all breaks or holes. Size, 3 feet square by 14 inches deep. Set slightly into the ground with earth banked around sides to water level which was maintained at a depth of 12 inches. Measurements were made daily by adding or removing enough water to bring the level up to the top of

EVAPORATION
SUMMARY BY MONTHS FOR STATIONS
MAINTAINED IN SNAKE RIVER DRAINAGE
IRRIGATION SEASON OF 1924.

1924 DISTRIBUTION WATER DISTRICT NO 36

PLATE NO XXXII

NAME OF STATION AND KIND OF EVAPORATION PAN	ALTITUDE IN FEET	MEAN TEMP. DEGREES FAHRENHEIT	TOTAL PRE- CIPITATION INCHES	TOTAL EVAP INCHES	MEAN DAILY EVAP INCHES	RECORD FURNISHED BY
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JUNE

ARROW ROCK LAND PAN	3230	65.4	0.14	9.519	0.317	USBR.
DEER FLAT " "	2510	66.1	0.55	7.851	0.262	USBR.
JEROME " "	3893	65.8	0.20	^a /1.684	0.337	NSCC.
JACKSON LAKE ROUND PN.	6770	51.2	1.02	^b /4.606	0.256	NEWELL
JACKSON LAKE SQ. PN.	6770	51.2	1.02	5.155	0.172	NEWELL

JULY

ARROW ROCK LAND PAN	3230	74.9	0.03	11.699	0.377	USBR
DEER FLAT " "	2510	72.2	TRACE	8.632	0.278	USBR
JEROME " "	3893	73.8	TRACE	9.539	0.308	NSCC
JACKSON LAKE ROUND PN.	6770	56.8	1.13	7.558	0.244	NEWELL
JACKSON LAKE SQ. PN.	6770	56.8	1.13	5.666	0.183	NEWELL

AUGUST

ARROW ROCK LAND PAN	3230	71.9	TRACE	10.549	0.340	USBR
DEER FLAT " "	2510	70.8	0.25	7.018	0.226	USBR
JEROME " "	3893	71.0	0.00	8.284	0.267	NSCC
JACKSON LAKE ROUND PN.	6770	54.1	0.40	8.594	0.277	NEWELL
JACKSON LAKE SQ. PN.	6770	54.1	0.40	6.098	0.197	NEWELL

SEPTEMBER

ARROW ROCK LAND PAN	3230	63.4	0.14	6.382	0.213	USBR
DEER FLAT " "	2510	NO RECORD	NO RECORD	NO RECORD	NO RECORD	USBR
JEROME " "	3893	63.5	0.02	4.978	0.166	NSCC
JACKSON LAKE ROUND PN.	6770	47.2	1.25	4.895	0.163	NEWELL
JACKSON LAKE SQ. PN.	6770	47.2	1.25	3.428	0.114	NEWELL

^a/ TOTAL FOR JUNE 26-30.

^b/ TOTAL FOR JUNE 13-30.

NO EVAPORATION RECORDS SECURED AT MUD LAKE DURING 1924.

a sharp point set in the center of the pan. The temperature of the water varied through a range of 10 or 15 degrees Fahrenheit above and below mean air temperature, and on several occasions, early in June and late in September, the pan was frozen during the early part of the day.

Some difference in exposure, due to the location of the respective stations, also exists, but is not believed to be of sufficient importance to warrant including more detailed descriptions herein.

NEW CONSTRUCTION AND REPAIRS

New gaging stations were installed early in the season on Snake River at Lorenzo and below the Blackfoot Bridge.

At the former the installation consisted of a recording gage above the railroad bridge and cable measuring equipment across the main channel below the adjacent highway bridge. A second cable will probably be required across an auxiliary channel if complete records are to be secured at this station during a normal or high water year.

Below the Blackfoot Bridge the river flows at medium and high stages in three different and well defined channels and on this account two recording gage and three cable installations were required to adequately equip the station.

EXPENDITURES

A complete statement of expenditures covering the year ending March 31, 1925 follows. This statement includes all items which appeared in the annual water master's bill for the season of 1924, as well as everything pertaining to the work of the Idaho Falls office. No attempt has been made, however, to segregate expense for strictly hydrometric work from that for water distribution, as in many respects these phases are too closely related to warrant more than an arbitrary separation.

The items shown in the column headed "Regular Work" correspond to the

total expenditures for what may be termed ordinary work, i.e., those items covered in the pre-season budget. All water user charges coming under this heading were prorated on the basis of 60 per cent against normal flow and 40 per cent against stored water. Stored water totals were in turn segregated between the three principal reservoirs in the district in proportion to their approximate available capacities. The 1923 capacity ratio was used for this purpose during April and May, following which 482 for Jackson Lake, 47 for Henrys Lake and 4 for Twin Lakes were applied.

The "Special Work" column covers the cost of installing the two new river gaging stations, the entire field and office expense of the work carried on by T. R. Newell in the vicinity of Jackson Lake, the Committee of Five investigation and a few other less important items, none of which were included in the year's budget. Most of these expenditures were also prorated between normal flow and stored water users in the manner above outlined.

EXPENDITURES FOR WATER DISTRIBUTION AND HYDROMETRIC WORK

April 1, 1924 to March 31, 1925

		Regular Work	Special Work
<u>Water Master, Special Deputy and Deputy</u>			
G. Clyde Baldwin,	Salary Apr. 2-8, Apr. 11-Mar. 31, 11 27/30 mo. at \$400	\$4760.00	
	Expenses do	155.57	
	Auto hire do	245.32	
	Salary Apr. 9-10, 2/30 mo. at \$400		\$26.67
	Expenses do		0.75
	Auto hire do		14.17
<u>Special Engineer</u>			
T. R. Newell	Salary May 21-31, 10/30 mo. at \$250		83.33
	Salary June 1-Feb. 8, 8 8/30 mo. at \$325		2686.57
	Expenses May 21-Feb. 8		657.96
	Boat & Auto hire do		1162.43

Hydrographers

		Regular Work	Special Work
O. A. McClelland,	Salary Apr. 1-9, 18-22 & Apr. 30-Mar. 31, 11 15/30 mo. at \$200	\$2300.00	
	Expenses do	99.89	
	Auto hire do	724.88	
	Salary Apr. 10-17 & 23-29, 15/30 mo. at \$200		\$100.00
	Expenses do		8.20
	Auto hire do		88.92
Lester L. Bryan	Salary Apr. 1-9 & Apr. 27-Mar. 31, 11 13/30 mo. at \$200	2286.67	
	Expenses do	92.33	
	Auto hire do	801.58	
	Salary Apr. 10-26, 17/30 mo. at \$200		113.33
	Expenses do		30.85
	Auto hire do		52.65
Kans H. Coffin	Salary, May 1-Oct. 15, 5 15/30 mo. at \$150	825.00	
	Expenses do	70.80	
	Auto hire do	914.68	
	Salary Apr. 14-30, 17/30 mo. at \$150		85.00
	Expenses do		6.50
	Auto hire do		17.81
F. A. Backman	Salary June 17-Sept. 28, 3 12/30 mo. at \$150	510.00	
	Expenses do	60.65	
	Auto hire do	649.35	
C. R. Black	Salary May 19-June 5; July 7-Aug. 6, 1 17/30 mo. at \$150	235.00	
	Expenses do	137.82	
	Auto hire do	243.94	
W. F. Dawson	Salary June 6-9, 11-Sept. 30, 3 24/30 mo. at \$145	551.00	
	Expenses do	79.89	
	Auto hire do	778.18	

Deputy Water Masters

T. W. Luetjen	Salary May 21-Sept. 30, 4 10/30 mo. at \$50	216.67	
	Auto hire do	216.67	
	Expenses do		2.75
Ernest Luetjen	Salary May 20-Sept. 30, 134 days at \$4	536.00	
	Auto hire do 3	402.00	
	Expenses do		15.15
Ira Moore	Salary May 19-Sept. 30, 135 days at \$4	540.00	
	Auto hire do 3.50	472.50	
Wm. Sauer	Salary do 4	540.00	
	Auto hire do 3.25	438.75	
C. A. McCurdy	Salary do 4	540.00	
	Auto hire do 3.50	472.50	
D. G. Taylor	Salary do 4	540.00	
	Auto hire do 2.75	371.25	
W. H. McConnel	Salary do, 4 12/30 mo. at \$40	176.00	
	Expenses do do	4.41	
	Auto hire do do	10.14	

Stenographers

		Regular Work	Special Work
Mrs. Bessie M. Rees	Salary Apr. 1-June 30, 3 mo. at \$110	\$ 330.00	
	Salary July 1-Feb. 1 & Feb. 7 to Mar. 31, 8 25/30 mo. at \$125	1104.17	
	Salary Feb. 2-6, 5/30 mo. at \$125		\$20.83
Mrs. Wilma Adams	Salary June 1-Sept. 15, 3 15/30 mo. at \$40	140.00	

Page Readers

Ira Moore	Salary, Miscellaneous dates. Job basis	126.73	
E. L. Jennings	Salary May 23-Sept. 30, 131 days at \$1	131.00	
J. A. Clough	Salary May 17-Sept. 30, 137 days at 1	137.00	
	Salary Apr. 1-May 16 & Oct. 1-Mar. 31, 7 16/30 mo. at \$10	75.33	
Eva Davis	Salary May 24-Sept. 30, 130 days at \$1	130.00	
Mrs. Irvin Siepert	Salary May 17-Oct. 4, 141 days at \$0.75	105.75	
	Salary Apr. 8-May 16 & Oct. 5-Nov. 4, 2 9/30 mo. at \$5	11.50	
Harold Fuqua	Salary May 20-Sept. 30, 4 11/30 mo. at \$12	52.40	
	Salary May 1-19, 19/30 mo. at \$5	3.17	
A. J. Cheney	Salary May 7-Sept. 30, 4 24/30 mo. at \$8	38.40	
H. E. Sheppard	Salary Apr. 1-May 10 & Nov. 8-Mar. 31, 6 3/30 mo. at \$15	91.50	
	Salary May 11-Nov. 7, 5 27/30 mo. at \$10	59.00	
E. Luetjen	Salary Apr. 1-May 19, 1 19/30 mo. at 9	14.70	
J. D. Luetjen	Salary Oct. 1-Mar 31, 6 mo. at \$9	54.00	
A. M. Anderson	Salary Apr. 16-May 31, 1 15/30 mo. at \$4	6.00	
Mrs. J. F. Johnson	Salary May 2-19 & Oct. 1-31, 1 18/30 mo. at \$5	8.00	
B. F. Smith	Salary Nov. 30-Mar. 6, 97 days at \$0.60	58.20	
	Salary Mar. 7-31, 7 trips at \$1	7.00	
C. N. Kemper	Salary Apr. 4-Nov. 30, Mar. 18-31, 8 10/30 mo. at \$4	33.33	
P. W. Wernette	Salary Apr. 1-June 30, 3 mo. at \$5	15.00	
R. E. Reid	Salary Apr. 1-Mar. 31, 12 mo. at \$10	120.00	

Secretary, Water Users Committee of Nine

John Lee	Salary 13 days during period May 13-Mar. 2 at \$5	65.00
	Expenses do	36.05
	Auto hire do	31.85

Special Investigation Committee

W. O. Cotton	Salary July 16-19, 20($\frac{1}{4}$ day), 21-22, 6 $\frac{1}{4}$ days at \$10	62.50
F. A. Miller	Salary July 16-19, 21-22, 6 days at \$10	60.00
	Expenses do	17.98
F. A. Banks	Salary July 16-17, 19, 21-22, 5 days at \$10	50.00
	Expenses do	22.60
D. G. Martin	Salary July 16-17, 19, 21-22, do	50.00
C. J. Miller	Salary July 17-22, 6 days at \$10	60.00
	Expenses do	43.90

Special Investigation Committee

Court Reporter

	Regular Work	Special Work
R. W. Jones		
Salary July 22, 1 day at \$25		\$25.00
Expenses		5.00
Materials, labor and equipment for gaging stations	\$384.17	1549.78
Rent, St. Anthony office, May 21-Sept. 30, 4 10/30 mo. at \$20	86.67	
Telephone and telegraph	628.34	4.95
Premium and filing fees on official bonds	43.00	
Field and office supplies	439.63	
Interest on borrowed money	312.54	

SOURCES OF REVENUE

Normal Flow Fund	\$13394.67	\$4385.57
Stored Water Users (through State) Jackson Lake	7989.10	2752.54
U. S. Geological Survey	398.92	
U. S. Indian Service	1163.76	
U. S. Treasury (Federal Salary Bonus)	30.00	
State of Idaho (Cooperative Stream Measurement Fund)	2552.44	
State of Idaho (State Commissioner of Reclamation)	232.96	
North Fork Reservoir Co. (through State)	864.74	74.70
North Fork Canals (Headgate expense)		17.90
Utah-Idaho Sugar Company (through State)	75.96	7.86
Swan Valley Water Users	<u>43.42</u>	<u> </u>
	\$26745.97	\$7238.57

*FUNDS AVAILABLE APRIL 1, 1925

Normal Flow Fund (a)	\$1660.11
U. S. Geological Survey (b)	759.14
U. S. Indian Service (b)	
Actual expenditures not exceeding	322.12
State of Idaho (c)	
Cooperative Stream Measurement Fund	738.36
Jackson Lake Stored Water Users (a)	14.18
North Fork Reservoir Co. (d)	<u>49.01</u>
	\$3542.92

*Amounts given in this table represent funds in bank or definitely known to be available after all accounts have been settled and adjusted to and including March 31, 1925.

- (a) Additional funds probably available on or before June 1, 1925.
- (b) Represents amount available for expenditure prior to July 1, 1925.
- (c) Amount allotted for expenditure prior to July 1, 1925.
(Subject to slight change)
- (d) Represents unexpended portion of money advanced.

Two important items are not included in these summaries for the reason that their exact value is not definitely known. These are:

(1) The rent equivalent of the office quarters and furniture in the Federal Building at Idaho Falls. Because of the cooperation with the U. S. Geological Survey this very desirable office space and equipment is made available without charge.

(2) The cost of securing the necessary prints for and the binding of 55 copies of the 1923 report which was paid direct by the State Commissioner of Reclamation.

The total cost of all work is shown to be larger than that of the preceding year by \$4774.76, of which \$1745.61 represents the added cost of special work, while the balance is largely due to the longer regulation period and consequent extra expenditures of a water shortage year.

RECOMMENDATIONS

Continued support of the Committee of Nine in their attempts to provide for the solution of the many complicated water distribution problems of the district and hearty cooperation on the part of all in their efforts to promote a spirit of fairness and harmony between different canals and sections as well as between stored and normal flow water users is again urged. The personnel of this committee represents practically all factions and interests and if adequately supported should be able eventually to adjust most of the difficulties encountered in an equitable manner without resort to expensive litigation.

WATER RIGHTS

While changes in the decreed rights of District No. 36 during the last two years are few in number and are limited to permanent transfers, annulments and supplemental decrees; it has seemed advisable, in order to make this report as complete as practicable, to again include a tabulation of all rights which have been granted to users located in the principal regulation zones.

This information has therefore been prepared in the form of diagrams and tabular summaries and is presented on Plates XXXIII, XXXIV and XXXV.

On the diagrams, the longer vertical line at the right hand side of each triangular block represents approximately the priority date, and the horizontal length of the block the size of the right. Very small rights appear simply as vertical lines. Exact dates and amounts are given in the adjacent tabular summary. Wherever two names appear in the latter for a single decreed right, the larger letters refer to the canal through which the water is now diverted and the smaller to the source from which the right was obtained. Under the "Decree" heading the amount of the individual right is

listed; under "Total" the total of all decreed rights to which the canal is entitled; and under "Older" the total of all older valid rights is given.

What may be termed permanent storage rights in Jackson Lake Reservoir are shown in the column headed "Storage" on Plate XXXV.

PARTY OR CANAL	TOTAL SF	1885	1886	1887	1888	1889	1890	1891	1892	1893	1894	1895	1896	1897	1898	1899	1900
ISLAND PARK L&CCO	50																
YELLOWSTONE	125																
HARRIGFELD	140																
MARYSVILLE	305																
FARMERS OWN	54																
CF ALVERY	36																
ENTERPRISE	1402																
BELL	52																
FALL RIVER	460																
MCBEE	166																
CHESTER	112																
SILKEY	267																
CURR	345																
WHITE	136																
CRABB-MAURER	74																
Z. SUNDBERG	12																
DEWEY	372																
LAST CHANCE	225																
STANTHONY UNION	700																
FARMERS FRIEND	240																
TWIN GROVES	150																
SALEM UNION	300																
HOFF	10																
CITY OF STANTHONY	100																
EGIN																	
INDEPENDENT	400																
CONSOLD FARMERS	255																
ANNUAL TOTALS SF	43442	300	0	209	607.2	479.2	211.5	38.4	600.8	10	7.2	790	159	225	372	0	63

SCALE 300 SEC FT = 1 IN

DECREES AND PRIORITY OF WATER RIGHTS

1924 DISTRIBUTION WATER DISTRICT NO 36

PARTY OR CANAL	TOTALS	1879	1880	1881	1882	1883	1884	1885	1886	1887	1888	1889	1890	1891	1892	1893
PEACEFUL VALLEY	20															
CANYON CREEK	70															
HAGUE	2															
SIDDOWAY	29															
MCCORMICK-ROWE	13															
WILFORD	200															
TETON IRRIGATION	130															
GOOD LUCK	36															
PIONEER	28.56															
STEWART	31.00															
PINCOCK-BYINGTON	2112															
PINCOCK-GARNER	2800															
N.P. HANSEN	32															
TETON ISLAND FEED.	60356															
ROXANA	16															
ISLAND WARD	100															
WOODMANSEE-JOHN.	494															
CITY OF REXBURG	60															
STEWART-WALTERS	10															
REXBURG-IRRIG.	300															
ANNUAL TOTALS SFT	175032	440	0	0	0	181.12	325.10	26464	0.50	0	336	2464	0	920	768	0

SCALE - 300 SEC FT. = 1 INCH

1895	1896	1897	1898	1899	1900	1901	1902	1909	DATE	DEGREE	PARTY OR CANAL	TOTAL	OLDER
									1900 JUN 7	20	PEACEFUL VALLEY	20	0
									1900 JUN 1	54	CANYON CREEK	70	16
									1902 JUN 1	2	HAGUE	2	0
									1901 MAR 25	100	ISLAND WARD	100	0
									1901 JAN 23	16	CANYON CREEK	70	0
									1900 JUN 1	32	PINCOCK-GARNER	28.08	24.88
									1898 MAY 15		(H.J. CLARK)		
									APR 1	15.32	SIDDOWAY	29.00	13.68
									APR 1	8.6	MCCORMICK-ROWE	13.00	4.40
									APR 1	132.16	WILFORD	200	67.84
									APR 1	26	GOOD LUCK	36	10
									APR 1	18	PIONEER	28.56	10.56
									APR 1	18	STEWART	31.00	13.00
									APR 1	16	PINCOCK-GARNER	20.08	8.88
									APR 1	32.6	WOODMANSEE-JOHNS.	49.4	16.80
											(JOHN S. EAMES, CLARK & HOUGH)		
									APR. 1	33	CITY OF REXBURG	60	27
									APR. 1	6.64	STEWART-WALTERS	10	3.36
									APR 1	170	REXBURG IRRIGATION	300	130
									APR 1	14	PINCOCK-BYINGTON	21.12	7.12
									APR 1	24006	TETON ISLAND FEED	603.56	363.50
											(HILL, TETON ISLAND, WOLF, DAVID NELSON, CHRISTIAN MORTENSEN, WINDMILL, WITHERS & YOUNG)		
									1896 JUL 15	05	WOODMANSEE - JOHNS.	494	16.3
									1894 JUN 1	02	WOODMANSEE - JOHNS (JOHN S. EAMES)	494	16.1
									1892 JUN 1	7.68	SIDDOWAY (ALFRED RICKS)	29.0	6.0
									1891 JULY 1	6.0	SIDDOWAY (AFTER JULY 1)	29.0	0
									1889 OCT 1	32	WOODMANSEE-JOHNS. (CLARK & HOUGHTON)	494	12.9
									OCT 2	12.4	WOODMANSEE - JOHNS	494	0.50
									1889 MAY 1	10	TETON IRRIGATION	130	12.0
									1888 JUN 1	224	TETON ISLAND FEED. (C. MORTENSEN)	603.56	361.26
									1886 JUN 1	3.36	STEWART-WALTERS	10	0
									1885 JUN 1	0.50	WOODMANSEE - JOHNS (MARTIN L. NAVE)	494	0
									1885 JUN 1	16	ROXANA	16	0
										240	TETON ISLAND FEED	603.56	361.26

1885

1884

1883

1879

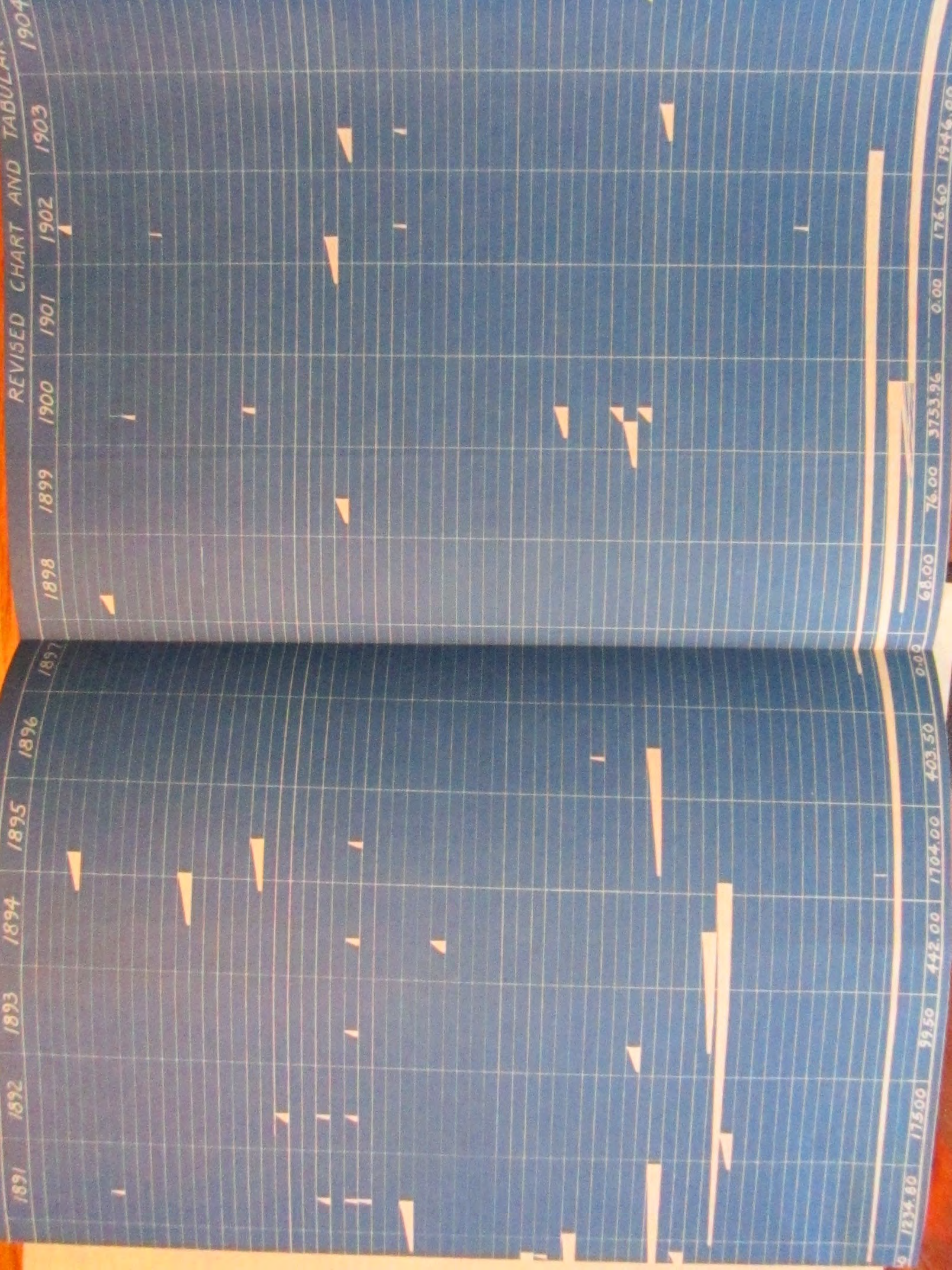
DATE	DEGREE	PARTY OR CANAL	TOTAL	OLDER
MAY 31	4.32	TETON ISLAND FEED. (WINDMILL WITHERS-YOUNG)	603.56	116.94
MAY 1	4.32	TETON ISLAND FEED. (DAVID NELSON)	603.56	112.62
JUN 1	67.84	WILFORD	200	0
JUN 1	10	GOOD LUCK	36	0
JUN 1	120	TETON IRRIGATION	130	0
JUN 1	9	STEWART	31	4
JUN 1	25.3	TETON ISLAND FEED. (WOLF)	603.56	87.32
MAY 22	70	TETON ISLAND FEED. (TETON ISLAND)	603.56	17.32
MAY 1	6.96	TETON ISLAND FEED. (HILL)	603.56	10.36
MAR 1	7.12	PINCOCK-BYINGTON	21.12	0
MAR 1	8.88	PINCOCK-GARNER	28.08	0
JUN 10	130	REXBURG IRRIGATION	300	0
JUN 10	27	CITY OF REXBURG	60	0
MAY 15	32	N.P. HANSEN	3.2	0
MAY 1	10.56	PIONEER	28.56	0
MAY 1	4.00	STEWART	31.00	0
MAR 1	10.36	TETON ISLAND FEED.	603.56	0
JUN 1	14.0	MCCORMICK-ROWE	13.0	0

NOTE

ALL DECREES LISTED IN SEC. FT.

1924 DISTRIBUTION WATER DISTRICT NO 36

PARTY OR CANAL	TOTAL SF.	1880	1881	1882	1883	1884	1885	1886	1887	1888	1889	1890
RILEY	24											
ANDERSON & E.R. AND N.CREEK	800											
PARTNERS FRIEND	342.83											
ENTERPRISE	188											
NELSON	1											
MATTSON CRAIG	20.16											
ARNESBERGER	6											
HEISE	36											
BUTLER ISLAND	57.78											
ROSS & RAND	334											
STEELE	38											
HARRISON	460.48											
CHENEY	6											
BOOMER & IDAHO	1000											
RUDY	191.26											
KITE & NORD	88											
BURGESS	800											
CLARK & EDWARDS	70											
LOWDER & JENNINGS	52											
EAST LA BELLE	140											
CONSOLIDATED FEEDER	184											
LENROOT	220											
REID	150											
TEXAS FEEDER	280											
NELSON COREY	168											
HILL PETTINGER	13											
LONG ISLAND	458.63											
ISLAND	290											
RIGBY	160											
DILTS	28											
WEST LA BELLE	109.32											
PARKS & LEWISVILLE	351.12											
NORTH RIGBY	50											
WHITE	6.98											
BRAMWELL & ELLIS	6.8											
INDEPENDENT	34											
BUTTE & MARKET LAKE	366.4											
OSGOND	132.45											
KENNEDY	2481											
PORTER GR. WESTERN & MARTIN	561.08											
BEAR ISLAND	3.5											
TAYLOR & GOSHEN	46											
CITY OF IDAHO FALLS	188											
WOODVILLE	125.5											
SHAKE RIVER VALLEY	710											
RESERVATION	600											
BLACKFOOT	366.8											
NEW LAVASIDE	152											
PEOPLES	4242											
ADERDEEN SPRINGFIELD	1250											
CORBETT SLOUGH	239.43											
NIELSEN HANSEN	15											
RIVERSIDE	100											
DANSKIN	180											
TREGO	69.41											
WEARYRICK	412											
WATSON SLOUGH	57.4											
PARSONS	22											
SMITH MAXWELL	17.8											
USRS MINIDOKA CANALS	2726											
SCHODDE	2											
TWIN FALLS SOUTH SIDE	3000											
TWIN FALLS NORTH SIDE	3000											
WILNER LOW LIFT CAN. CO												
ANNUAL TOTALS IN SEC. FT.	21000.70	200.00	60.00	60.00	160.00	483.00	680.40	454.20	264.80	1781.54	2041.00	1052.40



ARY OF PRINCIPAL SOUTH FORK AND SNAKE RIVER WATER RIGHTS				DATE DECREE PARTY OR CANAL		TOTAL OLDER		DATE DECREE PARTY OR CANAL		TOTAL OLDER		DATE DECREE PARTY OR CANAL		TOTAL OLDER		
1905	1906	1907	1908	STORAGE	DATE DECREE PARTY OR CANAL	TOTAL OLDER	DATE DECREE PARTY OR CANAL	TOTAL OLDER	DATE DECREE PARTY OR CANAL	TOTAL OLDER	DATE DECREE PARTY OR CANAL	TOTAL OLDER	DATE DECREE PARTY OR CANAL	TOTAL OLDER	DATE DECREE PARTY OR CANAL	TOTAL OLDER
				1200	1908 AUG 6 1000	2126	1908 AUG 6 1000	2126	1893 APR 30 85.5 WOODVILLE	125.5	1889 JUN 1	1893 APR 30 85.5 WOODVILLE	125.5	1889 JUN 1	1893 APR 30 85.5 WOODVILLE	125.5
				2000	" JUN 16 350	3000	" JUN 16 350	3000	1892 JUN 1 5. LENROOT	220	"	1892 JUN 1 5. LENROOT	220	"	"	"
				6100	1905 OCT 7 2250	3000	1905 OCT 7 2250	3000	" 6-1-03 Amended	280	"	" 6-1-03 Amended	280	"	"	"
				0	" JUN 1 36	19126	" JUN 1 36	19126	TEXAS FEEDER	226	"	TEXAS FEEDER	226	"	"	"
				0	1904 OCT 22 48	188	1904 OCT 22 48	188	Texas Slough Co.	52	"	Texas Slough Co.	52	"	"	"
				0	1903 SEP 1 110	710	1903 SEP 1 110	710	" MAY 1 130. CORBETT SLOUGH	239.43	"	" MAY 1 130. CORBETT SLOUGH	239.43	"	"	"
				0	" JUN 1 100	220	" JUN 1 100	220	1891 DEC 14 600. RESERVATION	600	"	1891 DEC 14 600. RESERVATION	600	"	"	"
				0	" 1 10	13	" 1 10	13	Idaho Canal & Imp Co	0	"	Idaho Canal & Imp Co	0	"	"	"
				5000	HILL PETTINGER	2726	HILL PETTINGER	2726	" JUN 1 4.8 NELSON-COREY	16.8	"	" JUN 1 4.8 NELSON-COREY	16.8	"	"	"
				0	1902 JUN 1 3	13	1902 JUN 1 3	13	P.O. Carlsen	4	"	P.O. Carlsen	4	"	"	"
				2000	Carlson-Fagerstrom	24	Carlson-Fagerstrom	24	" 6. ARNSBERGER	220	"	" 6. ARNSBERGER	220	"	"	"
				5120	USRS FOSTER	69.41	USRS FOSTER	69.41	Supplemental	290	"	Supplemental	290	"	"	"
				1040	HILL-PETTINGER	56	HILL-PETTINGER	56	6-1-03 & 99 Amended	95	"	6-1-03 & 99 Amended	95	"	"	"
				4000	" 1 24	184	" 1 24	184	" 1 195. ISLAND	280	"	" 1 195. ISLAND	280	"	"	"
				3000	Reese-King	3000	Reese-King	3000	105 Supplemental	212	"	105 Supplemental	212	"	"	"
				0	MAY 1 56 HEISE	3000	MAY 1 56 HEISE	3000	TEXAS FEEDER	212	"	TEXAS FEEDER	212	"	"	"
				0	APR 14 140	46	APR 14 140	46	Texas Slough Co.	161.08	"	Texas Slough Co.	161.08	"	"	"
				0	1900 OCT 11 400	132.45	1900 OCT 11 400	132.45	" JAN 24 400. GR. WESTERN & PORTER	152	"	" JAN 24 400. GR. WESTERN & PORTER	152	"	"	"
				0	" 11 3000	125.5	" 11 3000	125.5	New Sweden Dist.	80	"	New Sweden Dist.	80	"	"	"
				0	" JUN 16 46	72	" JUN 16 46	72	" OCT 16 17. BUTTE & MARKET LAKE	349.4	"	" OCT 16 17. BUTTE & MARKET LAKE	349.4	"	"	"
				0	" 16 100	19126	" 16 100	19126	Lavina Cutshaw	0	"	Lavina Cutshaw	0	"	"	"
				0	Taylor & Goshen	1	Taylor & Goshen	1	" 16 349.4 BUTTE & MARKET LAKE	132.45	"	" 16 349.4 BUTTE & MARKET LAKE	132.45	"	"	"
				0	WOODVILLE	7.2	WOODVILLE	7.2	" 16 10.6 056000	460.48	"	" 16 10.6 056000	460.48	"	"	"
				0	" 1 14	20.16	" 1 14	20.16	Butte & Market Lake	800	"	Butte & Market Lake	800	"	"	"
				0	APR 30 1. NELSON	188	APR 30 1. NELSON	188	" JUL 12 240. HARRISON	8.8	"	" JUL 12 240. HARRISON	8.8	"	"	"
				0	BC & C.G. Mattson	220	BC & C.G. Mattson	220	" JUN 10 240. BURGESS	3.8	"	" JUN 10 240. BURGESS	3.8	"	"	"
				355	12.9% MATTSON-CRAIG	188	12.9% MATTSON-CRAIG	188	" 8.8 KITE & NORD	69.41	"	" 8.8 KITE & NORD	69.41	"	"	"
				19000	CITY OF IDAHO FALLS	710	CITY OF IDAHO FALLS	710	Hatfield-Nord-Parsons	24.81	"	Hatfield-Nord-Parsons	24.81	"	"	"
				0	1899 JUN 1 76	3.5	1899 JUN 1 76	3.5	" Hatfield	0	"	" Hatfield	0	"	"	"
				0	LENROOT	280	LENROOT	280	" 1 65.41 TREGO	20.22	"	" 1 65.41 TREGO	20.22	"	"	"
				0	ENTERPRISE	800	ENTERPRISE	800	" 4.59 KENNEDY & BURGESS	52	"	" 4.59 KENNEDY & BURGESS	52	"	"	"
				25000	1896 JUL 9 400	2	1896 JUL 9 400	2	Trego	0	"	Trego	0	"	"	"
				0	" JUN 1 3.5 BEAR ISLAND (Weir)	188	" JUN 1 3.5 BEAR ISLAND (Weir)	188	" 26. LOWDER & JENNINGS	17.8	"	" 26. LOWDER & JENNINGS	17.8	"	"	"
				0	TEXAS FEEDER	460.48	TEXAS FEEDER	460.48	6-1-00 Error	0	"	6-1-00 Error	0	"	"	"
				8000	" 1 160	424.2	" 1 160	424.2	" 17.8 SMITH-MAXWELL	366.8	"	" 17.8 SMITH-MAXWELL	366.8	"	"	"
				42685	BURGESS	28	BURGESS	28	Smith-Jarvis-Drennan	132.45	"	Smith-Jarvis-Drennan	132.45	"	"	"
				0	APR 1 2	0	APR 1 2	0	1889 JUL 10 366.8 BLACKFOOT	561.08	"	1889 JUL 10 366.8 BLACKFOOT	561.08	"	"	"
				0	Supplemental	188	Supplemental	188	" 10 10.4 056000	11.45	"	" 10 10.4 056000	11.45	"	"	"
				0	ENTERPRISE	460.48	ENTERPRISE	460.48	Blackfoot	24.81	"	Blackfoot	24.81	"	"	"
				0	1894 AUG 18 400	280	1894 AUG 18 400	280	" 14. GR. WESTERN & PORTER	11.42	"	" 14. GR. WESTERN & PORTER	11.42	"	"	"
				0	ADERDEEN SPRINGFIELD 1250	280	ADERDEEN SPRINGFIELD 1250	280	Blackfoot	6	"	Blackfoot	6	"	"	"
				0	American Falls Co	240	American Falls Co	240	" 8.8 KENNEDY & BURGESS	0	"	" 8.8 KENNEDY & BURGESS	0	"	"	"
				0	HARRISON	280	HARRISON	280	" 6. CHENEY	0	"	" 6. CHENEY	0	"	"	"
				0	PEOPLES	280	PEOPLES	280	" 2. RUDY	0	"	" 2. RUDY	0	"	"	"
				0	DILTS	280	DILTS	280	" 334. ROSS & C.E. R	0	"	" 334. ROSS & C.E. R	0	"	"	"
				0	DILTS & Le Belle Co.	280	DILTS & Le Belle Co.	280	" 2. STEELE	0	"	" 2. STEELE	0	"	"	"
				0	TEXAS FEEDER	280	TEXAS FEEDER	280	" 3.9 LONG 15	0	"	" 3.9 LONG 15	0	"	"	"
				97185	" 1 14	280	" 1 14	280	" 30. ISLAND	0	"	" 30. ISLAND	0	"	"	"
				15000	TEXAS FEEDER	280	TEXAS FEEDER	280	" 1. RUDY	0	"	" 1. RUDY	0	"	"	"
				847000	1893 JUN 1 14	280	1893 JUN 1 14	280	" 2. STEELE	0	"	" 2. STEELE	0	"	"	"
				0	TEXAS FEEDER	280	TEXAS FEEDER	280	" 3.9 LONG 15	0	"	" 3.9 LONG 15	0	"	"	"
				0	TEXAS FEEDER	280	TEXAS FEEDER	280	" 30. ISLAND	0	"	" 30. ISLAND	0	"	"	"
				0	TEXAS FEEDER	280	TEXAS FEEDER	280	" 1. RUDY	0	"	" 1. RUDY	0	"	"	"
				0	TEXAS FEEDER	280	TEXAS FEEDER	280	" 2. STEELE	0	"	" 2. STEELE	0	"	"	"
				0	TEXAS FEEDER	280	TEXAS FEEDER	280	" 3.9 LONG 15	0	"	" 3.9 LONG 15	0	"	"	"
				0	TEXAS FEEDER	280	TEXAS FEEDER	280	" 30. ISLAND	0	"	" 30. ISLAND	0	"	"	"
				0	TEXAS FEEDER	280	TEXAS FEEDER	280	" 1. RUDY	0	"	" 1. RUDY	0	"	"	"
				0	TEXAS FEEDER	280	TEXAS FEEDER	280	" 2. STEELE	0	"	" 2. STEELE	0	"	"	"
				0	TEXAS FEEDER	280	TEXAS FEEDER	280	" 3.9 LONG 15	0	"	" 3.9 LONG 15	0	"	"	"
				0	TEXAS FEEDER	280	TEXAS FEEDER	280	" 30. ISLAND	0	"	" 30. ISLAND	0	"	"	"
				0	TEXAS FEEDER	280	TEXAS FEEDER	280	" 1. RUDY	0	"	" 1. RUDY	0	"	"	"
				0	TEXAS FEEDER	280	TEXAS FEEDER	280	" 2. STEELE	0	"	" 2. STEELE	0	"	"	"
				0	TEXAS FEEDER	280	TEXAS FEEDER	280	" 3.9 LONG 15	0	"	" 3.9 LONG 15	0	"	"	"
				0	TEXAS FEEDER	280	TEXAS FEEDER	280	" 30. ISLAND	0	"	" 30. ISLAND	0	"	"	"
				0	TEXAS FEEDER	280	TEXAS FEEDER	280	" 1. RUDY	0	"	" 1. RUDY	0	"	"	"
				0	TEXAS FEEDER	280	TEXAS FEEDER	280	" 2. STEELE	0	"	" 2. STEELE	0	"	"	"
				0	TEXAS FEEDER	280	TEXAS FEEDER	280	" 3.9 LONG 15	0	"	" 3.9 LONG 15	0	"	"	"
				0	TEXAS FEEDER	280	TEXAS FEEDER	280	" 30. ISLAND	0	"	" 30. ISLAND	0	"	"	"
				0	TEXAS FEEDER	280	TEXAS FEEDER	280	" 1. RUDY	0	"	" 1. RUDY	0	"	"	"
				0	TEXAS FEEDER	280	TEXAS FEEDER	280	" 2. STEELE	0	"	" 2. STEELE	0	"	"	"
				0	TEXAS FEEDER	280	TEXAS FEEDER	280	" 3.9 LONG 15	0	"	" 3.9 LONG 15	0	"	"	"
				0	TEXAS FEEDER	280	TEXAS FEEDER	280	" 30. ISLAND	0	"	" 30. ISLAND	0	"	"	"
				0	TEXAS FEEDER	280	TEXAS FEEDER	280	" 1. RUDY	0	"	" 1. RUDY	0	"	"	"
				0	TEXAS FEEDER	280	TEXAS FEEDER	280	" 2. STEELE	0	"	" 2. STEELE	0	"	"	"
				0	TEXAS FEEDER	280	TEXAS FEEDER	280	" 3.9 LONG 15	0	"	" 3.9 LONG 15	0	"	"	"
				0	TEXAS FEEDER	280	TEXAS FEEDER	280	" 30. ISLAND	0	"	" 30. ISLAND	0	"	"	"
				0	TEXAS FEEDER	280	TEXAS FEEDER	280	" 1. RUDY	0	"	" 1. RUDY	0	"	"	"
				0	TEXAS FEEDER	280	TEXAS FEEDER	280	" 2. STEELE	0	"	" 2. STEELE	0	"	"	"
				0	TEXAS FEEDER	280	TEXAS FEEDER	280	" 3.9 LONG 15	0	"	" 3.9 LONG 15	0	"	"	"
				0	TEXAS FEEDER	280	TEXAS FEEDER	280	" 30. ISLAND	0	"	" 30. ISLAND	0	"	"	"
				0	TEXAS FEEDER	280	TEXAS FEEDER	280	" 1. RUDY	0	"	" 1. RUDY	0	"	"	"
				0	TEXAS FEEDER	280	TEXAS FEEDER	280	" 2. STEELE	0	"	" 2. STEELE	0	"	"	"
				0	TEXAS FEEDER	280	TEXAS FEEDER	280	" 3.9 LONG 15	0	"	" 3.9 LONG 15	0	"	"	"
				0	TEXAS FEEDER	280	TEXAS FEEDER	280	" 30. ISLAND	0	"	" 30. ISLAND	0	"	"	"
				0	TEXAS FEEDER	280	TEXAS FEEDER	280	" 1. RUDY	0	"	" 1. RUDY	0	"	"	"
				0	TEXAS FEEDER	280	TEXAS FEEDER	280	" 2. STEELE	0	"	" 2. STEELE	0	"	"	"
				0	TEXAS FEEDER	280	TEXAS FEEDER	280	" 3.9 LONG 15	0	"	" 3.9 LONG 15	0	"	"	"
				0	TEXAS FEEDER	280	TEXAS FEEDER	280	" 30. ISLAND	0	"	" 30. ISLAND	0	"	"	"
				0	TEXAS FEEDER	280	TEXAS FEEDER	280	" 1. RUDY	0	"	" 1. RUDY	0	"	"	"
				0	TEXAS FEEDER	280	TEXAS FEEDER	280	" 2. STEELE	0	"	" 2. STEELE	0	"	"	"
				0	TEXAS FEEDER	280	TEXAS FEEDER	280	" 3.9 LONG 15	0	"	" 3.9 LONG 15	0	"	"	"
				0	TEXAS FEEDER	280	TEXAS FEEDER	280	" 30. ISLAND	0	"	" 30. ISLAND	0	"	"	"
				0	TEXAS FEEDER	280	TEXAS FEEDER	280	" 1. RUDY	0	"	" 1. RUDY	0	"	"	"
				0	TEXAS FEEDER	280	TEXAS FEEDER	280	" 2. STEELE	0	"	" 2. STEELE	0	"	"	"
				0	TEXAS											

DATE	DEED	PARTY OR CANAL	TOTAL OLDER	DATE	DEED	PARTY OR CANAL	TOTAL OLDER	DATE	DEED	PARTY OR CANAL	TOTAL OLDER	DATE	DEED	PARTY OR CANAL	TOTAL OLDER
1883 JUN 1	064	HARRISON	460.48	1883 JUN 1	064	HARRISON	460.48	1883 JUN 1	064	HARRISON	460.48	1883 JUN 1	064	HARRISON	460.48
1883 JUN 1	039	KENNEDY & BURGRAFF	24.81	1883 JUN 1	039	KENNEDY & BURGRAFF	24.81	1883 JUN 1	039	KENNEDY & BURGRAFF	24.81	1883 JUN 1	039	KENNEDY & BURGRAFF	24.81
1882 JUN 1	58.98	LONG ISLAND	458.65	1882 JUN 1	58.98	LONG ISLAND	458.65	1882 JUN 1	58.98	LONG ISLAND	458.65	1882 JUN 1	58.98	LONG ISLAND	458.65
1881 JUN 1	064	HARRISON	460.48	1881 JUN 1	064	HARRISON	460.48	1881 JUN 1	064	HARRISON	460.48	1881 JUN 1	064	HARRISON	460.48
1881 JUN 1	038	KENNEDY & BURGRAFF	24.81	1881 JUN 1	038	KENNEDY & BURGRAFF	24.81	1881 JUN 1	038	KENNEDY & BURGRAFF	24.81	1881 JUN 1	038	KENNEDY & BURGRAFF	24.81
1881 JUN 1	58.96	LONG ISLAND	458.65	1881 JUN 1	58.96	LONG ISLAND	458.65	1881 JUN 1	58.96	LONG ISLAND	458.65	1881 JUN 1	58.96	LONG ISLAND	458.65
1880 AUG 1	160.	ANDERSON & E. R. ANDWIG	800.	1880 AUG 1	160.	ANDERSON & E. R. ANDWIG	800.	1880 AUG 1	160.	ANDERSON & E. R. ANDWIG	800.	1880 AUG 1	160.	ANDERSON & E. R. ANDWIG	800.
JUN 11	39.31	LONG ISLAND	458.65	JUN 11	39.31	LONG ISLAND	458.65	JUN 11	39.31	LONG ISLAND	458.65	JUN 11	39.31	LONG ISLAND	458.65
JUN 11	0.43	HARRISON	460.48	JUN 11	0.43	HARRISON	460.48	JUN 11	0.43	HARRISON	460.48	JUN 11	0.43	HARRISON	460.48
JUN 11	0.26	KENNEDY & BURGRAFF	24.81	JUN 11	0.26	KENNEDY & BURGRAFF	24.81	JUN 11	0.26	KENNEDY & BURGRAFF	24.81	JUN 11	0.26	KENNEDY & BURGRAFF	24.81

NOTE:-- ALL DECREES ARE LISTED IN SECOND FEET IN ABOVE SUMMARY.

STORAGE IS LISTED IN ACRE FEET.

056000 HAS STORAGE IN TWIN LAKES.

USRS HAS ADDITIONAL STORAGE IN LAKE WALCOTT.

LICENSE AND PERMIT RIGHTS DO NOT APPEAR.

SCALE OF DIAGRAM:-- 300 SEC FT - 1 INCH