

STATE OF IDAHO
DEPARTMENT OF RECLAMATION

W. G. SWENDSEN, COMMISSIONER

BOISE

April 26, 1923.

Re: District No. 36.

Hon. C. C. Moore,
Governor of Idaho,
Building.

My dear Governor Moore:

It is my pleasure to submit herewith for your consideration, a report covering the administration and distribution of the waters of Snake River in District No. 36 for the year 1922.

Supervision of the distribution work in this district has been in charge of Mr. G. Clyde Baldwin, acting as Special Deputy Commissioner of Reclamation, and cooperating with John Empey, the district watermaster. Great credit is due these gentlemen for the efficient and splendid manner in which this work has been carried on.


The original from which the data in this report were compiled, is retained in the office of the United States Geological Survey at Idaho Falls where the same is available for inspection by the public. Reports similar to the enclosed have been issued for the years 1919 to 1922 inclusive.

It is my firm belief that the time and expense incident to the compilation of these data is well justified and that the information that is being collected from year to year will be of unlimited value to the State in future years. It is my hope, therefore, that the policy of keeping accurate and dependable records of distribution and water deliveries in this district may be continued in the future.

I desire to direct your special attention to the recommendations contained on pages 47 and 48.

I should be ungrateful if I failed to express my appreciation for the support of the water users generally in this district, and especially for the splendid cooperation of the officers and members of the Protective Association.

Very truly yours,


Commissioner of Reclamation.

STATE OF IDAHO
DEPARTMENT OF RECLAMATION
W. G. SWENDSEN, COMMISSIONER
BOISE

Idaho Falls, Idaho.
April 16, 1923.

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

Dear Sir:-

I take pleasure in submitting herewith the technical report covering water distribution and hydrometric operations in Water District No. 36 for the irrigation season of 1922.

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 contained herein 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 three preceding years.

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

Money was again advanced by the Water Users' Protector Association of the North Fork of Snake River and Tributaries, the Farmers' Protective Irrigation Association, the Twin Falls Canal Company and the North Side Canal Company, Limited, to create the so-called Normal Flow Fund, through which the prompt payment of all expenses incident to the distribution of normal flow was made possible.

The advice and assistance given throughout the season by Messrs. H. G. Fuller, D. G. Martin and F. L. Banks, members of the Water Users' Advisory Committee, was very much appreciated.

Much credit should be given to John Empey, who completed his seventh successive term as Water Master, to each of the hydrographers and to the other members of the distribution personnel 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 Thomas R. Newell, to C. A. McClelland and to Mrs. Edith M. Cure.

Respectfully yours,

G. Clyde Baldwin
Special Deputy.

WATER DISTRIBUTION AND HYDROMETRIC WORK

In District No. 36

1922

by G. Clyde Baldwin

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INTRODUCTION.

Water distribution and hydrometric work in Water District No. 36 were carried on in 1922 under the same general plan of operation adopted for the three preceding years. 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 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. This plan has been outlined in greater detail in the 1919 and 1921 reports of the Special Deputy State Commissioner of Reclamation*; hence will not be repeated herein. 1922 variations or changes in the detailed methods of former years will be discussed in proper sequence in this report.

The annual water master election which is held on the first Monday in March of each year is the only regular meeting provided for in the Idaho statutes at which all adjudicated normal flow water rights within a water district are supposed to be represented. Consequently this meeting has become one of great importance to the water users and really marks the beginning of the irrigation season. The election held in Idaho Falls on March 6, 1922, was noteworthy, not only for the re-election of John Empey as Water Master of District No. 36 for the seventh successive year and for the

* Water Distribution and Hydrometric Work in District No. 36, 1919
by G. Clyde Baldwin.
Water Distribution and Hydrometric Work in District No. 36, 1921
By G. Clyde Baldwin.

election of H. G. Fuller, D. G. Martin and F. A. Banks as members of the Advisory Committee, but also for the sentiment favoring reduction of district expenditures which was generally expressed and which culminated in the adoption of a rather drastic proposal to reduce the salaries of most of the distribution personnel by 25 per cent.

Since most of the river riders and deputy water masters were unwilling to continue their service for another season on the new basis of compensation, bids were requested for each of six positions.

The following summaries or minutes of the second and third meetings of the Advisory Committee which were held during the year are self-explanatory and serve to outline the procedure agreed upon for the irrigation season of 1922.

Summary of Proceedings of Meeting of Water Users' Advisory Committee of District No. 36, held at Idaho Falls, Idaho, April 6, 1922.

Present, H. G. Fuller, D. G. Martin and F. A. Banks, members of committee; John Empey, Water Master and G. Clyde Baldwin, Special Deputy State Commissioner of Reclamation.

"The forenoon session was devoted to the consideration of bids for river rider and deputy water master positions for the 1922 irrigation season. The qualifications of the different applicants were carefully reviewed and discussed, with the result that the following selections were in each case unanimously agreed upon:

Name	Division	Compensation
Ernest Luetjen	Fall River	\$100.00 per month
W. M. Wayman	St. Anthony	7.25 per day
Ira Moore	Heise	7.50 per day
Wm. Sauer	Rigby-Sunnydell	7.00 per day
R. S. Wilson	Idaho Falls	7.12 per day
Ernest F. Hale	Blackfoot	6.75 per day

The proposal of the North Fork water users' association, on behalf of the canals under their jurisdiction, to guarantee the payment of not to exceed \$350.00 for the purpose of increasing the salary of C. A. McClelland from \$142.50 per month allowed by the resolution passed at the last annual water master's election to \$175 per month for the year ending April 30, 1923, was read and unanimously approved both as to the proposed increase and with respect to the method of payment suggested therein.

The salary of Mrs. Elith M. Cure as stenographer and clerk in the Idaho Falls office was unanimously ordered reduced from \$130 to \$120 per month, while a motion to offer H. R. Wallis a salary of \$45.00 per month as observed at the Neeley station during the 1922 irrigation season instead of \$50.00 per month heretofore received, was carried by a vote of 2 to 1. The character of service performed by these two employees and the probable impossibility of securing the same service for less money was considered in fixing the amount of these reductions.

A copy of a letter from the Commissioner of Reclamation to Judge Cowen and other correspondence relating to a plan which has been proposed to divide Water District No. 36 and make other changes which would affect present distribution methods was read and discussed briefly.

Immediately thereafter Mr. Empey asked to be excused in order to catch a train for Salt Lake City, Utah.

The complaint which has been filed in the case of the Independent Irrigation Company, Limited, and others vs. the Long Island Irrigation Company, John Empey and W. G. Swendsen was read and discussed. O. A. Johannesen, attorney for the plaintiffs, was interviewed by the committee and at their suggestion promised to amend his complaint. Mr. Baldwin was requested to write to Mr. Swendsen for a copy of the demurrer filed by Attorney General Black on behalf of Messrs. Empey and Swendsen and also for a copy of the contract between the Long Island Irrigation Company and the Milner Low Lift Irrigation District.

Mr. Baldwin then read an extract from his 1921 distribution report describing the results of surface return flow investigations between the Woodville and Blackfoot gaging stations on Snake River. This led to a discussion of the methods to be followed in computing stored water transmission losses during the 1922 season, but the meeting adjourned without agreeing upon any changes in distribution methods.

Plans for financing the Normal Flow portion of the 1922 distribution expense were also discussed briefly, but no action was taken."

Summary of Meeting of the Water Users' Advisory Committee
of District No. 36, held at Idaho Falls, Idaho,

May 2, 1922.

Present: Messrs. H. G. Fuller, D. G. Martin and F. A. Banks, members of Advisory Committee, and G. Clyde Baldwin, Special Deputy State Commissioner of Reclamation.

"Consideration was first given to the financing of the normal flow portion of the 1922 water distribution. Estimates presented by Mr. Baldwin indicated that because of salary reductions the work for the season could be financed with advances to the Normal Flow Fund of approximately \$1,700 less than was required for the 1921 season. The committee therefore drafted and signed the following letter or statement:

We, the Advisory Committee of the water users of District No. 36, State of Idaho, in session in Mr. Baldwin's office at Idaho Falls, Idaho, have given consideration to the amount of money which will be required to finance the distribution of natural flow in this district during the coming irrigation season, and in our opinion it will be necessary to raise the sum of \$10,320.00.

We therefore recommend that this amount be advanced as follows:

Water Users' Protector Assn. of No. Fork of Snake R. & Tributaries	\$2,150
Farmers' Protective Irrigation Association	3,870
North Side Canal Company, Limited	2,150
Twin Falls Canal Company	2,150

These proposed advances represent a net reduction in each case of 14 per cent from the amounts advanced for the 1921 season.

It is respectfully requested that these amounts be forwarded to G. Clyde Baldwin, the bonded treasurer of the Normal Flow Fund, in sufficient time to reach him at Idaho Falls, Idaho, not later than June 1, 1922.'

The employment of river riders and deputy water masters beginning June 1, 1922, was approved.

The matter of revising the method of computing stored water transmission losses was discussed in some detail, after which the following plan was adopted for use during the 1922 season, subject to possible revision at a later meeting of the committee after additional opportunity has been afforded for study of changes which have been proposed by W. O. Cotton and others:

Between the outlet of Jackson Lake reservoir and the Woodville gaging station on Snake River use exactly the same method which has been in effect for the last three years, viz. 2½ per cent deduction from Moran, Wyoming, to the Heise gaging station and computed losses between the Heise and Woodville stations with the proviso that the latter loss shall never be less than one-half of one per cent.

Between the Woodville and Blackfoot gaging stations a flat deduction of 6 per cent is to be applied to the storage passing the upper or Woodville station. This change is based upon the results indicated by 1921 investigations and it was suggested that as many additional surface inflow or waste determinations be carried on during the 1922 season as may be practicable. With the application of this new percentage all inflow from Blackfoot River is to be considered as natural flow available to appropriators below the mouth of Blackfoot River."

On May 2, 1922, an opportunity was also given to the newly organized Upper Snake River Union of Water Users to present to the Commissioner of Reclamation, his assistants and the members of the Advisory Committee of Water District No. 36, such matters pertaining to water distribution within

the district as in their judgment warranted changes in the existing plan of operation.

The Union was represented by its President, Secretary, Directors, Engineer and Counsel.

The contentions of the Union were presented under five principal headings and may be briefly summarized as follows:

(1) Diversions throughout the Upper Snake Valley should be in no way restricted while water is being stored in Jackson Lake Reservoir.

(2) Storage transmission loss from Moran, Wyoming, to the Heise gaging station should be increased from $2\frac{1}{2}$ to 10 per cent pending the acquisition of additional data.

(3) Storage transmission loss from the Heise to the Blackfoot gaging stations should either be increased or a larger allowance for return flow should be made.

(4) Cumulative normal flow credit with later repayment in water or cash should be allowed for all underdelivery of decreed rights during the irrigation season.

(5) Normal flow rights should be credited with about 8000 acre-feet of Jackson Lake storage to offset evaporation loss from that portion of the lake area attributable to the construction of the dam at the outlet.

Each of these points, together with a proposal to divide Water District No. 36 at American Falls, which had been advanced by the Union at an earlier date, was discussed at some length during the meeting. Both the Commissioner of Reclamation and the members of the Advisory Committee were opposed to the latter plan for dividing the district but careful consideration of all the other matters was promised.

Early in July a reply, signed by the Commissioner of Reclamation and approved by each member of the Advisory Committee, was made public.

Space in this report will not warrant the repetition of either the complete account of the hearing on May 2 or of the Commissioner's reply thereto, but the following paragraph quoted from the conclusion of the latter summarizes the matter in so far as it affected the 1922 distribution:

"After carefully considering all of the matters outlined in the foregoing (the five propositions submitted by the Union), it is my conclusion that changes in the present method of distribution are at this time unwarranted and not advisable. It appears that the present method is giving results as nearly in harmony with fairness and equity as can be given with the use of available data and funds."

Work during the months of April and May consisted principally of minor construction and repairs to gaging stations, reestablishment of river gaging stations which had been discontinued for the winter and the securing of meter measurements at both canal and river stations.

River riders and deputy water masters again began work on June 1, and coincident with their employment daily records were initiated at all regular canal stations.

PERSONNEL.

The personnel engaged in the work of distribution during the season of 1922 was as follows:

G. Clyde Baldwin,	Special Deputy State Commissioner of Reclamation
John Empey,	Water Master
Thomas R. Newell,	Hydrographer
C. L. McClelland,	Hydrographer and Deputy Water Master
Frank A. Backman,	Hydrographer
D. G. Martin,	Hydrographer
Mrs. Edith M. Cure,	Clerk and Office Assistant, Idaho Falls office
Mrs. Mae McClelland,	" " " " St. Anthony "
Mrs. DeEsta L. Sims,	Temporary Stenographer, Idaho Falls "
Ernest Luetjen,	Deputy Water Master, Upper Fall River division
W. R. Wayman,	" " " Henrys Fork division
W. F. Dawson,	" " " & Hydrographer, Teton River division
Ira Moore,	" " " Heise division
Wm. Sauer,	" " " Rigby division
R. S. Wilson,	" " " Idaho Falls division
E. F. Hale,	" " " Blackfoot division
Wm. Burton,	" " " Swan Valley canals
Fred J. Anderson,	" " " Minidoka Dam
W. N. McConnel,	" " " & Hydrographer, Milner Dam
Joseph Markham,	Superintendent, Jackson Lake Dam
Miss Frances Woodburn,	Forwarding Agent, Ashton, Idaho

E. Luetjen, Harold Fuqua, John Kukas, Ira Moore, O. L. Kefoed, Louis Thorne, E. L. Jennings, J. A. Clough, A. J. Myers, Mrs. J. F. Johnson, Miss Lena Byington, Gage Readers.

MAP SHOWING PRINCIPAL STREAMS AND GAGING STATIONS

SCALE 1" = 24 STATUTE MILES

- STATION**
- 1 JACKSON LAKE AT MORAN WYOMING
 - 2 WAKE RIVER NEAR MORAN WYOMING
 - 3 WAKE RIVER NEAR HEISE IDAHO
 - 4 WAKE RIVER NEAR SHELLEY IDAHO
 - 5 WAKE RIVER AT PORTERVILLE BRIDGE IDA
 - 6 SNAKE RIVER NEAR BLACKFOOT IDAHO
 - 7 SNAKE RIVER AT NEELEY IDAHO
 - 8 LAKE W ALCOTT NEAR MINIDOKA IDA
 - 9 SNAKE RIVER NEAR MINIDOKA IDA
 - 10 LAKE MILNER AT MILNER IDA
 - 11 SNAKE RIVER AT MILNER IDAHO
 - 12 HENRYS FORK NEAR ASHTON IDAHO
 - 13 HENRYS FORK AT STANTHONY IDA
 - 14 HENRYS FORK NEAR RIXBURG IDA
 - 15 FALL RIVER NEAR SCUIRREL IDA
 - 16 FALL RIVER NEAR CHESTER IDA
 - 17 TETON RIVER NEAR ST ANTHONY IDA
 - 18 BLACKFOOT RIVER NEAR BLACKFOOT IDA
 - 19 PORT NEUF RIVER AT POCATELLO IDA
 - 20 NORTH SIDE MINIDOKA CANAL NEAR MINIDOKA IDA
 - 21 SOUTH SIDE MINIDOKA CANAL NEAR MINIDOKA IDA
 - 22 SOUTH SIDE TWIN FALLS CANAL AT MILNER IDA
 - 23 NORTH SIDE TWIN FALLS CANAL AT MILNER IDA
- AUXILIARY STATIONS**
- A SNAKE RIVER AT SOUTH BOUND, YELLOWSTONE PARK
 - B HENRYS FORK AT WARM RIVER IDA
 - C WARM RIVER AT WARM RIVER IDA
 - D ROBINSON CREEK AT WARM RIVER IDA
 - E HENRYS FORK AT LAKE IDA



IDAHO
WYOMING

DESCRIPTIVE OUTLINE OF 1922 DISTRIBUTION.

The winter of 1921-22 was one of unusually low temperatures. Reports for the latter part of April indicated that the accumulated snow supply did not differ materially from the amount available at that time in either of the two preceding years.

April was a cold month, and in consequence run-off was largely retarded. Climatic conditions were more nearly normal during May, while June was both warmer and drier than usual. Stream flow during these two months was fairly well sustained and few extremes were noted.

When the outlet gates of Jackson Lake Reservoir were closed on September 12, 1921, to begin storage for the 1922 irrigation season, about 152,000 acre-feet of unused storage were carried over. The gates remained closed until the reservoir was again filled to capacity on June 21, 1922. From June 22 to July 2 inclusive the reservoir was maintained practically at its full capacity of 847,000 acre-feet, while the entire normal flow of the river was allowed to pass the dam.

At the Heise gaging station Snake River reached its maximum discharge for the year (25,500 second-feet mean for the day) on May 26. This maximum would undoubtedly have been greatly exceeded had it not been for the long continued storage period. Because of the latter, in this one year, at least, the reservoir aided materially in flood prevention. From a discharge of 24,500 second-feet for the regular midnight to midnight day on June 23, the stage at Heise dropped steadily to one of 14,700 second-feet on July 2, on which date canals drawing in excess of their record rights were cut half-way down to those rights.

On July 3 the first storage was released from Jackson Lake Reservoir and on the following day all canals were cut to record rights.

All permit and license rights were cut off on July 9, and thereafter decreed rights were ordered cut as follows:

July 14	Rights having a priority date subsequent to March 26, 1903
" 19	" " " " " " " Oct. 11, 1900
" 21	" " " " " " " June 1, 1900

Unusually heavy summer rains occurred on July 20 and 21 which so increased the flow of the river that on July 22 rights were reinstated back to October 11, 1900, and on July 25 reinstatements were extended back to March 26, 1903.

Thereafter cuts were again effective as follows:

July 29	Rights having a priority date subsequent to October 11, 1900
" 30	" " " " " " " June 1, 1899
" 31	" " " " " " " July 8, 1896
Aug. 1	" " " " " " " March 21, 1895
" 2	" " " " " " " February 5, 1895

Beginning about this time the demand for water began to decrease, due partially to the maturing of crops and partially to the frequency of August rains so that on August 4 it was possible to reinstate a part and on August 5 the whole of the large right of the Aberdeen-Springfield Canal Co. dated February 6, 1895. Reinstatements and cuts throughout the balance of the month of August fluctuated in accordance with the following table which shows those rights which were invalid on the respective dates:

August 6	Rights having a priority date subsequent to June 1, 1895
" 9	" " " " " " " Mar. 22, 1895
" 11	" " " " " " " June 1, 1895
" 12	" " " " " " " July 9, 1896
" 14	" " " " " " " Apr. 15, 1898
" 15	" " " " " " " Apr. 20, 1900
" 16	" " " " " " " Oct. 11, 1900
" 17	" " " " " " " July 9, 1896
" 18	" " " " " " " June 1, 1895
" 19	" " " " " " " Feb. 6, 1895
" 21	" " " " " " " Mar. 23, 1895
" 22	" " " " " " " Apr. 14, 1902

Beginning about August 21 the demand for water throughout the upper valley decreased very rapidly and to such an extent that from and after

August 23 regulation of diversions became unnecessary.

Following the practice of preceding years, both cuts and reinstatements were somewhat deferred as to time, but a plus and minus account of storage passing the Blackfoot gaging station was maintained in order to insure a correct balance at the end of the storage delivery period. This method is justified largely upon the theory that such benefit as would have been received from the natural storage or regulatory effect of Jackson Lake under conditions existing prior to the construction of the dam at the outlet would be most beneficial to normal flow rights during the early part of the regulation period, while the maximum benefit to be derived by storage rights from reservoir bank storage would be noted later, following periods of heaviest draft. The principal objection to the plan would seem to be the greater latitude given the administrative officer in fixing the exact time of both cuts and reinstatements, and the consequent danger of not maintaining the regulation in close enough accord with observed river conditions. Furthermore, if the theory upon which the plan is based is unsound, this practice will favor the younger decreed rights to the detriment of those having an earlier priority.

On August 26 the withdrawal of storage from Jackson Lake Reservoir terminated for the season.

The following letter from the Special Deputy to the Commissioner of Reclamation, dated August 30, 1922, summarizes conditions for that date and outlines the program of work for September:

"Due to the fact that Mr. D. G. Martin has been absent from Idaho Falls for some time and will probably not return much before the middle of September, and further, because of difficulty in arranging any mutually satisfactory date for a meeting of the other members, we have been unable to have the regular meeting of the Advisory Committee for Water District No. 36 which is customarily held at this season of the year. I have talked with each of the three members of the committee, however, either in person or by telephone, and have reviewed the river situation pretty thoroughly with Mr. Empey, the water master. Mr. Empey and I feel that the future demands for water within

the district for the balance of this season will probably not exceed the available supply, and since no storage has been released from Jackson Lake since Saturday, August 26, there should be little need for regulation during the balance of the irrigation season. We therefore propose to reduce the distribution personnel at the end of this month, in the same manner as during 1921, by discontinuing the services of river riders and deputy water masters, except those at Minidoka and Milner dams and those in the upper valley who are acting also in the capacity of hydrographers. This plan was discussed, as above mentioned, individually with members of the Advisory Committee and met with their approval.

It is proposed to supply any deficiencies in normal flow available for the Minidoka and Twin Falls canals by drawing upon Lake Walcott for the balance of the season, in this way conserving a somewhat larger amount of storage than would otherwise be possible in Jackson Lake Reservoir.

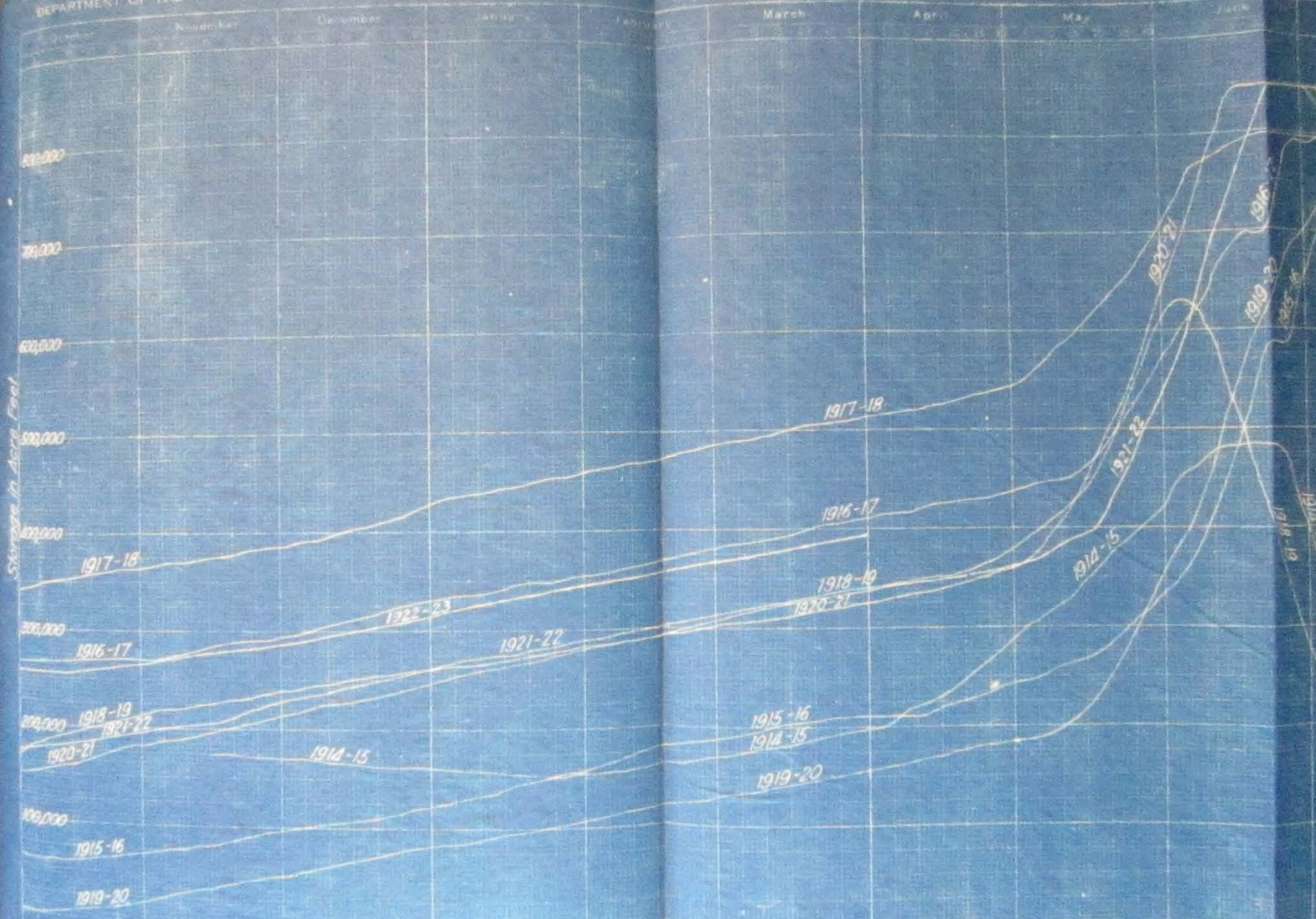
Following the plan adopted in preceding years, we expect to construct a concrete float well and recording gage house at the Heise gaging station, thus adding one more to what might be termed the permanent gaging station installations on Snake River. In addition, minor repairs for maintenance work will be made at a number of other river stations, both on the South Fork and main river and also in the North Fork area.

During September daily records of canal diversions will not be secured, but each station will be visited at least once each week or oftener, if practicable, by either Mr. Empey or one of the hydrographers, thus making it possible, by means of short interpolations, to include diversion records for this month in our final report. It is planned to terminate the services of Mr. Empey and Messrs. Dawson and Backman at or shortly before the end of September. So far as I can determine from individual conversations, these plans will all meet the approval of the Advisory Committee. At the first practicable date, however, when all the committee members can be brought together, a regular meeting will be held and formal confirmation of these plans requested.

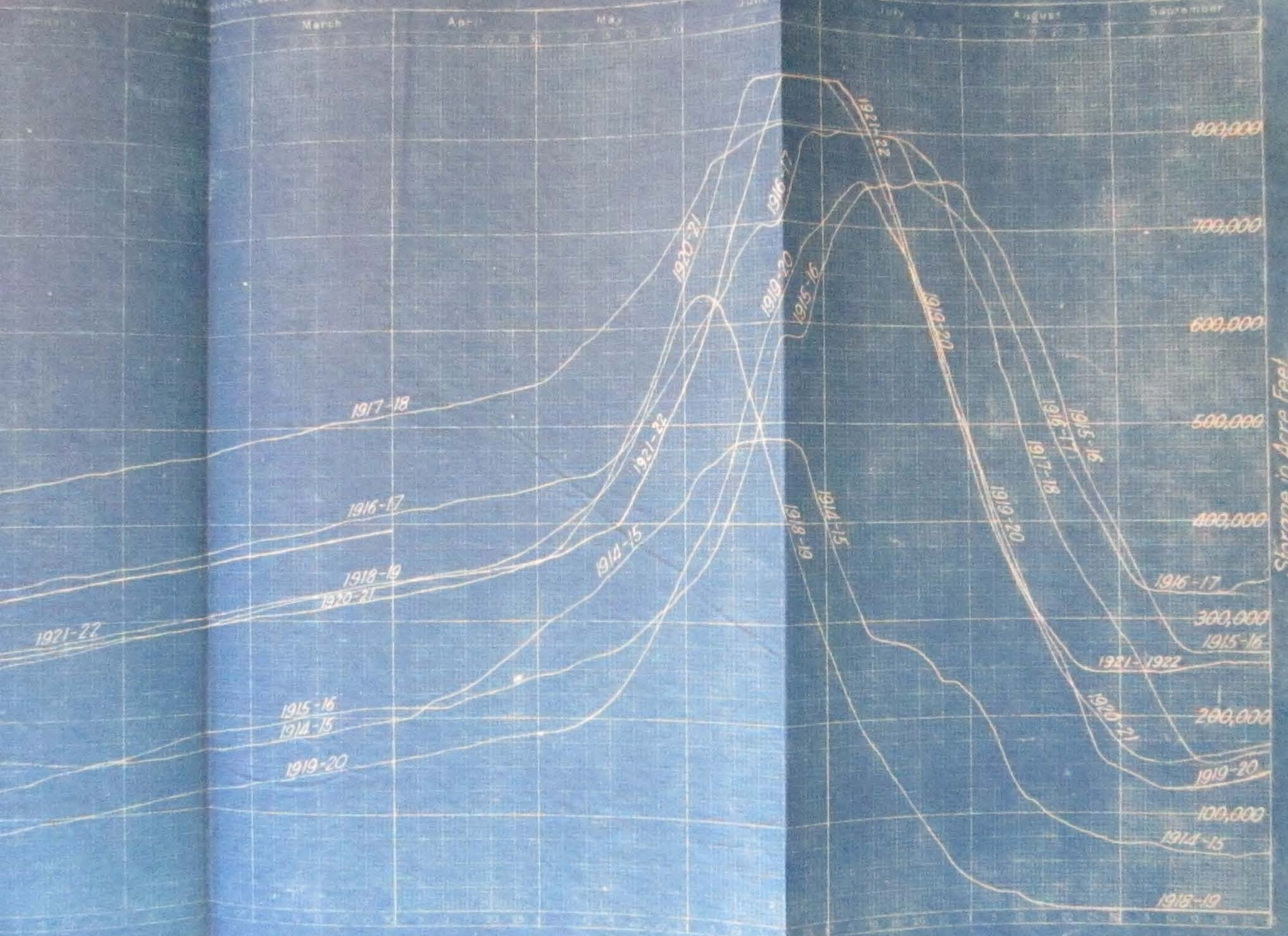
Daily reports, beginning September first, will be in more abbreviated form and will consist only of reports from those river and canal stations for which daily readings are still available."

This program was approved by the Commissioner of Reclamation and was executed substantially as outlined during the latter part of the season.

In spite of the fact that diversions were no longer restricted, so much normal flow continued to pass the last canal in the vicinity of Blackfoot throughout the latter part of August and the early part of September that the gates at the outlet of Jackson Lake were ordered closed on September 8 to begin storage for the next irrigation season. Due to a break in the telephone line between Ashton, Idaho and Moran, Wyoming, this



Storage in Acre Feet



Storage in Acre Feet

order was not executed until the following day. Storage continued from September 9 to 20 inclusive, during which time the amount stored in the reservoir was increased by about 10,000 acre-feet. Meanwhile, however, unseasonably warm, dry weather was experienced, accompanied by an increased demand for water on the part of upper valley canals and a consequent material decrease in the flow of the river in the vicinity of Blackfoot. In fact, had the need for water been great enough to warrant the expense of repairing diversion dams, the river might easily have been dried up at the latter point for perhaps most of the month following the middle of September. In view of this situation the continued storage of water at Jackson Lake was considered unwarranted and the gates were opened on September 21 sufficiently to allow the normal flow to pass on down the stream and storage was not again resumed until October 14. The hold-over in the reservoir on that date amounted to 255,650 acre-feet.

Plate II illustrates graphically the rate at which Jackson Lake Reservoir was filled or drawn down during the period from November 15, 1914, to March 31, 1923 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 two preceding reports is extended to include the year ending September 30, 1922, the data may be summarized as follows:

Station	Mean annual run-off for 19 yrs. ending Sept. 30, 1922	Run-off for year ending Sept. 30, 1922	% of mean
Moran	1,130,000	1,006,850	89.1
Neeley	6,814,000	6,020,000	88.3

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, 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. In the report for 1930 an attempt was made to apply approximate storage and diversion corrections to the Neeley records in order to make them more truly comparable with the data for the Moran station. Application of such corrections to 1922 results would increase the percentage for the year from 86.3 to something slightly in excess of 90, but so many uncertainties exist that the wisdom of attempting such corrected comparisons, seems doubtful, especially since annual run-off comparisons are not necessarily applicable and hence can not be used to show the relation between the water supply available during the respective irrigation seasons.

While it seems evident that the total annual run-off for the climatic year ending September 30, 1922, was slightly below normal, yet the normal flow water supply available during the 1922 irrigation season was better sustained during the July and August period of peak demand than in any other year since 1918, at least. (See Plate XV of this report.)

STORAGE VERSUS FLOOD WATER DIVERSIONS.

During 1922 Jackson Lake was filled to capacity about ten days before any regulation in Idaho became necessary; hence the right to store water did not conflict in any way with the use of normal flow during the early part of the irrigation season. Possible conflict which might have occurred during the latter part of the season was avoided by allowing normal

flow to pass the reservoir from September 21 to October 13, as previously explained.

DOMESTIC WATER.

No domestic water allowances were granted during the 1922 irrigation season.

Surplus storage at Jackson Lake Reservoir to the amount of about 50,000 acre-feet was again available and about 9,905 acre-feet were sold by the U. S. Reclamation Service at the rate of \$1.00 per acre-foot.

MUNICIPAL WATER RIGHTS.

The cities of St. Anthony and Idaho Falls again were supplied, during the periods when their respective decreed rights were invalid, through the purchase of surplus Jackson Lake storage in the same manner as during the season of 1921, except that no legal action was this year required in either case.

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 continued. Likewise the so-called pooling system modification of this principle was again used to advantage in the North or Henrys Fork area.

In order to facilitate survey and construction work, water was voluntarily shut out of the Reservation Canal on July 8, and an order was presented which permitted the Water Master and Special Deputy to transfer this right temporarily to other canals when in their judgment such a transfer was needed to prevent crop loss. This order was given upon the express understanding that it should in no way jeopardize the Snake River rights of the Reservation Canal. A similar order from the Lenroot Canal was also ef-

rective for a short time.

Due to the favorable season, however, and to the belief that any unused water should, under ordinary conditions, revert to other rights in accordance with their priorities, these blanket transfers were not utilized very extensively.

EXCHANGE OF NORMAL FLOW FOR STORAGE.

No requests to exchange normal flow for storage were received during 1922; hence no such direct exchanges were made.

Stored water sold to the Utah Power & Light Company for delivery to the City of St. Anthony, Idaho, involved an exchange of this character, since actual delivery was made from normal flow, while storage was given to other canals in lieu of the normal flow so deducted.

LITIGATION.

Early in the year a complaint was filed in the District Court of the Ninth Judicial District of the State of Idaho on behalf of the Independent Irrigation Company and against the Long Island Irrigation Company, John Empey, Water Master and W. G. Swendsen, Commissioner of Reclamation, in which the plaintiff Independent Irrigation Company sought to secure an adjudicated right or supplementary decree as of date June 1, 1884, to water flowing in Scott Slough, a tributary of Snake River.

The matter was called to the attention of the members of the Advisory Committee, who after due investigation approved the employment of counsel by the Water Master to appear in his behalf and that of other water users to oppose the granting of this new decree. This action was taken under authority granted at the water master election of March 7, 1921, and upon the understanding that only formal appearance would be made by the State on behalf of its officers.

difficulty was experienced in fixing a mutually satisfactory date for the hearing on this case, and as a result a temporary order was issued by the court early in July, 1922, restraining both the Commissioner of Reclamation and the Water Master from in any way interfering with the headgates of the Independent Irrigation Company during the irrigation season.

Judgment was entered by the court on October 9, 1922, granting the plaintiff company a right of 44 second-feet as of date June 1, 1884. This was in effect a default judgment, since, through some misunderstanding, counsel had failed to appear to represent the Water Master.

Suit was then brought to set aside this judgment and after argument by respective counsel on November 29, 1922, an order was finally entered by the court declaring the judgment of October 9, 1922, vacated and set aside as to the defendants, W. G. Swendsen, Commissioner of Reclamation and John Empey, Water Master.

CANAL DELIVERIES.

The total amount diverted daily through each canal heading either in the South Fork or main river for the four months ending September 30, 1922, is shown on Plates III, IV, V and VI.

Following the practice inaugurated in the 1919 report, except for a few of the smaller canals where estimates were used, all data were re-computed 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

DAILY DISCHARGE IN SECOND FEET OF CANALS DIVERTING FROM SNAKE RIVER FOR AUGUST 1922

Table with columns for canal names and 31 days of discharge data. Rows include various canal systems such as Consolidated Feeder, Texas Feeder, and Snake River Valley.

DALEY DISCHARGE IN SECOND FEET OF CANALS DIVERTING FROM SNAKE RIVER FOR SEPTEMBER 1922

FIELD NO. 22

NAME OF CANAL	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
ALBANY	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	
ALBANY & BENTLEY	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	
ALBANY	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	
ALBANY	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	
ALBANY	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	
ALBANY	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	
ALBANY	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	
ALBANY	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	
ALBANY	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	
ALBANY	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	
ALBANY	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	
ALBANY	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	
ALBANY	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	
ALBANY	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	
ALBANY	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	
ALBANY	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	
ALBANY	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	
ALBANY	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	
ALBANY	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	
ALBANY	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	
ALBANY	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	
ALBANY	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	
ALBANY	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	
ALBANY	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	
ALBANY	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	
ALBANY	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	
ALBANY	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	
ALBANY	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000	1001	

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.

Since no river riders were employed during the month of September, data for this month are based upon the smaller number of gage readings which it was possible for the remainder of the organization to secure in connection with other work, and for this reason the September canal records are probably less reliable than those for the three preceding months. Discharges listed for days for which no gage readings are available have, with few exceptions, been interpolated.

Beginning July 3, after a dike to exclude river water had been constructed across the slough from which the Morgan and Rostan canals divert, records of the flow through these canals were discontinued. Thereafter they were supplied from other adjacent canal systems.

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 downstream order.

RIVER DATA.

The extensive tables found on Plates VII and VIII 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. Plate IX contains similar tables covering the October low water period for that portion of the river from Neeley to Milner.

These tables are prepared upon the following time interval basis:

Miles from Jackson Lake 12 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	Rexburg	Day ending at 8 a.m. 1st day following
42	Woodville	Day ending at 10 p.m. 1st day following
46	Porterville	Day ending at 4 a.m. 2nd day following
54	Blackfoot	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

This schedule for time of transmission is the same as the one adopted for the three 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.

The river stations were maintained continuously but, as previously explained, records of the upper valley diversions were not secured every day in September; hence canal discharges for this month have been partially interpolated.

No storage from the small Emma Matilda and Two Ocean Lake Reservoirs was released for delivery during the season of 1922.

1922 DISTRIBUTION WATER DISTRICT NO 36

JACKSON LAKE				MORAN				HEISE					MORAN-HEISE				REXBURG		HEISE RILEY		DATE	DIY HEISE W			
DATE	GAGE	CAP ACFT	DRIFT	GAGE	DISCH	STD	NAT	1922	GAGE	DISCH	+RILEY	STD	NAT	TOT GAIN	LOSS	ST GAIN	NAT	GAGE	DISCH	*RILEY	*REXBB	1922	TOTAL	STD	NAT
MAY 30	5622	534940		041	34			MAY 31	4.88	20000	20020			19986				631	3600	23620		JUN 1	6377		
31	5628	545700		041	34			JUN 1	4.73	19240	19263			19229				619	3480	22743		2	6841		
JUN 1	5714	556480		040	32			2	4.63	18690	18713			18681				599	3280	21993		3	7473		
2	5763	568030		044	38			3	4.68	18940	18966			18928				594	3230	22196		4	7718		
3	5819	581260		047	43			4	4.91	20050	20076			20033				591	3230	23306		5	7969		
4	5881	595960		051	49			5	5.24	21750	21776			21727				613	3480	25256		6	8079		
5	5950	612410		055	56			6	5.45	22790	22817			22761				653	3910	26727		7	7660		
6	6027	630850		062	69			7	5.41	22580	22612			22543				705	4460	27072		8	7861		
7	6106	649260		062	69			8	5.52	23110	23139			23070				751	4970	28109		9	8019		
8	6152	668260		062	69			9	5.65	23800	23832			23763				764	5110	28942		10	7943		
9	6252	685300		059	63			10	5.64	23690	23722			23659				754	5000	28722		11	7876		
10	6316	700930		059	63			11	5.35	22170	22196			22133				726	4710	26906		12	8068		
11	6373	714930		058	61			12	5.02	20410	20436			20375				653	3970	24406		13	7978		
12	6428	728430		060	65			13	4.96	20100	20128			20063				609	3530	23658		14	8371		
13	6479	741090		060	65			14	4.91	19850	19874			19809				610	3540	23414		15	8072		
14	6545	757490		061	67			15	5.14	21020	21050			20983				671	4150	25200		16	7746		
15	6608	773190		070	84			16	5.03	20460	20467			20383				763	5100	25567		17	7358		
16	6663	786980		059	63			17	4.81	19340	19350			19287				780	5250	24600		18	7564		
17	6716	800310		057	60			18	4.88	19700	19710			19650				762	5020	24730		19	7931		
18	6770	813950		055	56			19	4.95	20050	20079			20023				756	4930	25009		20	8393		
19	6822	827120		054	54			20	4.95	20050	20079			20025				757	4910	24989		21	8826		
20	6872	839840		053	53			21	4.89	19750	19780			19727				735	4630	24410		22	9051		
21	6898	846460		H.D.	3020			22	5.24	21540	21570			18550				716	4410	25980		23	9764		
22	6898	846460		638	6200			23	5.77	24320	24353			18153				715	4370	28723		24	9678		
23	6900	847000		566	4930			24	5.31	21910	21942			17012				670	3890	25832		25	9476		
24	6900	847000		552	4690			25	4.97	20160	20188			15498				575	2940	23128		26	9603		
25	6900	847000		530	4660			26	4.83	19440	19468			14808				542	2620	22088		27	9818		
26	6902	847480		508	3990			27	4.61	18340	18370			14380				508	2320	20690		28	9738		
27	6900	847000		525	4260			28	4.53	17940	17968			13708				499	2240	20208		29	9791		
28	6898	846460		521	4200			29	4.38	17200	17230			13030				468	1970	19200		30	9412		
29	6903	847740		405	2580			30	4.04	15570	15598			13018				465	1940	17538		JUL 1	9105		
30	6902	847480		469	3420			JUL 1	3.91	14960	14990			11760				442	1760	16750		2	8592		
JUL 1	6898	846460		397	2480			2	3.83	14600	14628			11208				419	1580	16208		3	8128		
2	6900	847000		790	428	2860	398	2462	3	3.52	13210	13236			10756			405	1470	14706		4	7724		
3	6897	846210	790	428	2860	398	2462	4	3.39	12650	12676	388	12288	9816	10	9826	396	1410	14086		5	7832	0		
4	6880	841880	4330	540	4500	2183	2317	5	3.73	14140	14165	2128	12037	9665	55	9720	399	1430	15595		6	7809	0		
5	6862	837300	4580	559	4810	2309	2501	6	3.69	13960	13984	2251	11733	9174	58	9232	404	1470	15454		7	7815	0		
6	6842	832210	5090	572	5030	2566	2464	7	3.65	13780	13804	2502	11302	8774	64	8838	395	1400	15204		8	7840	0		
7	6817	825850	6360	592	5380	3207	2173	8	3.58	13470	13494	3127	10367	8114	80	8194	377	1270	14764		9	7663	0		
8	6782	816980	8870	651	6450	4472	1978	9	3.73	14140	14164	4360	9804	7714	112	7826	348	1090	15254		10	7713	0		
9	6742	806870	10110	680	7000	5097	1903	10	3.84	14640	14664	4970	9694	7664	127	7791	349	1090	15754		11	7737	0		
10	6696	795260	11610	736	8110	5853	2257	11	3.95	15150	15174	5707	9467	7064	146	7210	350	1090	16264		12	7856	0		
11	6644	782220	13040	776	8950	6574	2376	12	4.10	15860	15884	6410	9474	6934	164	7098	346	1070	16954		13	7741	1		
12	6588	768200	14020	789	9220	7068	2152	13	4.11	15900	15923	6891	9032	6703	177	6880	335	997	16920		14	7810	16		
13	6531	754000	14200	790	9240	7159	2081	14	4.11	15900	15924	6980	8944	6684	179	6863	315	884	16808		15	7730	26		
14	6472	739360	14640	803	9330	7381	2149	15	4.13	16000	16024	7196	8828	6494	185	6679	287	740	16764		16	7830	33		
15	6410	724030	15330	815	9790	7729	2061	16	4.21	16380	16405	7536	8869	6615	193	6808	280	701	17106		17	7850	68		
16	6348	708790	15240	814	9770	7684	2086	17	4.16	16140	16164	7492	8672	6394	192	6586	268	645	16807		18	7840	56		
17	6285	693350	15440	816	9810	7784	2026	18	4.14	16050	16074	7589	8485	6264	195	6459	257	596	16670		19	7735	131		
18	6218	677010	16340	834	10210	8238	1972	19	4.19	16290	16314	8032	8282	6104	206	6310	247	552	16866		20	7838	145		
19	6151	660750	16260	856	10690	8198	2492	20	4.41	17350	17373	7993	9380	6683	205	6888	250	565	17938		21	7963	241		
20	6084	644560	16190	866	10920	8163	2757	21	4.59	18240	18264	7959	10305	7344	204	7548	295	775	19039		22	7719	145		
21	6021	629480	15160	835	10230	7643	2587	22	4.39	17250	17276	7452	9824	7046	191	7237	350	1030	18356		23	7512	125		
22	5967	616470	12930	765	8720	6519	2201	23	4.00	15390	15416	6356	9060	6696	163	6859	342	1030	16446		24	7347	113		
23	5912	603340	13130	759																					

MINT DUKA				N-M-W				PALAT NSTFCAN				PA-NSTFCAN				SSTFCANAL				MURTAUGH				MIL		MILNER		M-M	
GAUG	DISCH	STD	NAT	LOSS	1927	GAUG	DISC	GAUG	DISC	GAUG	DISCH	TOTAL	STD	NAT	GAUG	DISCH	STD	NAT	GAUG	DISC	STD	NAT	IN BAL	GAUG	DISCH	STD	NAT	GAIN	
883	12600			1420	JUN 4	1099	201	59	826	2810	2869				1033	3530			188	50			6151	971	5240			-911	
849	11330			2234	5	1090	202	59	822	2790	2849				1029	3500			HD	42			4939	1632	6120			1181	
870	12110			659	6	1090	203	60	833	2850	2909				1030	3510			HD	53			5638	1039	5987			342	
873	12220			-6	7	1089	203	60	860	2980	3040				1031	3510			2.00	70			5600	1089	6530			930	
906	13500			-506	8	1089	203	60	862	2990	3050				1031	3510			201	70			6870	1254	8350			1480	
964	15880			-674	9	1089	203	60	864	3000	3060				1031	3510			201	70			9240	1351	9550			310	
986	16820			-930	10	1093	203	60	870	3030	3090				1030	3510			203	72			10148	1384	10010			-138	
987	16870			-749	11	1096	202	59	872	3040	3099				1030	3510			227	84			10177	1412	10420			243	
995	17220			-578	12	1096	201	59	871	3040	3099				1031	3510			230	85			10526	1457	11140			614	
1014	18060			90	13	1096	201	59	869	3020	3079				1031	3510			230	85			11366	1438	10830			-536	
996	17260			704	14	1092	202	59	867	3020	3079				997	3300			230	85			10796	1340	9410			-1386	
941	14920			1249	15	1094	203	60	867	3020	3080				1016	3420			230	85			8335	1130	6980			-1355	
892	13230			937	16	1095	204	60	HD	2540	2600				1028	3490			HD	50			7055	1123	7560			505	
908	13580			-506	17	1095	204	60	871	3040	3100				1027	3490			DRY	0			6940	1206	7820			880	
939	14830			-1524	18	1096	203	60	871	3060	3120				1026	3480			HD	29			8230	1383	9990			1760	
1003	17570			-877	19	1096	203	60	870	3080	3140				1025	3480			133	38			10921	1404	10300			-621	
993	17130			289	20	1094	203	60	869	3100	3160				1024	3470			093	21			10452	1360	9670			-782	
980	16560			196	21	1094	203	60	869	3100	3160				1028	3490			093	21			9909	1277	8620			-1289	
953	15420			990	22	1095	203	60	868	3090	3150				1028	3490			230	85			8759	1120	6870			-1289	
904	13420			738	23	1094	202	59	869	3100	3159				1028	3490			230	85			6686	1049	6090			-596	
879	12450			868	24	1095	203	60	870	3100	3160				1029	3500			230	85			5705	1039	5910			205	
882	12570			-570	25	1096	203	60	871	3100	3160				1031	3510			230	85			5815	1145	7140			1325	
930	14460			-804	26	1096	204	60	869	3100	3160				1034	3530			HD	61			7709	1229	8070			361	
922	14140			1184	27	1095	204	60	868	3090	3150				1041	3580			DRY	0			7410	993	5470			-1940	
835	10820			2016	28	1096	203	60	868	3090	3150				1043	3590			HD	12			4068	772	3200			-868	
798	9580			1973	29	1095	204	60	867	3080	3140				1043	3590			2.00	70			2780	703	2580			-200	
765	8580			1068	30	1084	204	60	861	3060	3120				1039	3560			245	92			1808	479	782			-1076	
719	7320			971	JUL 1	1095	204	60	867	3080	3140				1045	3600			246	93			487	473	698			211	
719	7320			1167	2	1095	204	60	867	3080	3140				1045	3600			246	93			487	415	428			-59	
699	6810			1163	3	1096	204	60	868	3090	3150				1045	3600			243	92			-32	278	101			133	
696	6730			646	4	1099	204	60	869	3100	3160				1046	3610			HD	4			-44	235	56			100	
688	6530			-23	5	1096	203	60	869	3100	3160				1046	3610			DRY	0			-240	202	33			273	
692	6630			663	6	1101	204	60	870	3100	3160				1047	3610			HD	11			-151	337	197			348	
692	6630			644	7	1098	202	59	859	3040	3099				1040	3570			247	94			-133	197	30			163	
689	6550	550	6000	1414	8	1082	202	59	842	2960	3019	19	3000	1030	3510	510	3000	248	94	94	0			-73	138	26	26	0	99
696	6730	1627	5103	-188	9	1078	202	59	857	3040	3099	996	2103	1038	3560	560	3000	247	94	94	0			-23	138	26	26	0	47
688	6530	1502	5028	113	10	1087	202	59	866	3080	3139	1111	2028	1048	3600	600	3000	248	94	94	0			-303	194	29	29	0	332
688	6530	1806	4724	163	11	1095	202	59	865	3080	3139	1415	1724	1045	3600	600	3000	249	94	94	0			-303	192	28	28	0	331
689	6550	2301	4249	-110	12	1092	202	59	866	3080	3139	1890	1249	1048	3620	620	3000	250	95	95	0			-304	185	24	24	0	325
687	6500	3055	3445	38	13	1095	202	59	865	3080	3139	2694	445	1046	3610	610	3000	251	96	96	0			-345	182	22	22	0	367
687	6500	3100	3400	348	14	1092	203	59	857	3040	3099	2699	400	1041	3580	580	3000	HD	85	85	0			-264	175	19	19	0	283
691	6600	3200	3400	49	15	1089	204	59	856	3030	3089	2689	400	1041	3580	580	3000	247	94	94	0			-163	174	18	18	0	181
689	6550	3150	3400	625	16	1086	204	59	859	3030	3089	2689	400	1042	3580	580	3000	249	94	94	0			-213	174	18	18	0	231
687	6500	3100	3400	587	17	1090	204	59	862	3020	3079	2679	400	1044	3590	590	3000	HD	83	83	0			-252	174	18	18	0	270
689	6550	3325	3225	468	18	1090	206	59	863	3020	3079	2700	379	1045	3600	754	2846	HD	87	87	0			-216	179	21	21	0	237
688	6530	3581	2949	530	19	1092	206	59	860	3000	3059	2712	347	1043	3590	988	2602	248	94	94	0			-213	173	18	18	0	231
686	6480	3757	2723	630	20	1090	206	59	856	2980	3039	2719	320	1042	3580	1177	2403	247	94	94	0			-233	170	16	16	0	249
691	6600	3838	2762	311	21	1088	206	59	867	3040	3099	2774	325	1054	3660	1223	2437	HD	86	86	0			-245	203	34	34	0	279
691	6600	3833	2767	110	22	1102	HD	37	872	3060	3097	2771	326	1058	3680	1239	2441	HD	46	46	0			-223	185	24	24	0	247
692	6630	3826	2804	-391	23	1104	206	59	875	3080	3139	2809	330	1056	3660	1186	2474	HD	90	90	0			-259	216	42	42	0	301
691	6600	3784	2816	-348	24	1106	206	59	875	3080	3139	2808	331	1051	3640	1155	2485	244	92	92	0			-271	292	119	119	0	390
698	6780	3380	3400	784	25	1106	206	59	875	3080	3139	2739	400	1053	3650	650	3000	248	94	94	0			-103	299	129	129	0	232
714	7190	3790	3400	1352	26	1108	207	60	873	3060	3120	2720	400	1057	3680	680	3000	251	96	96	0			-294	405	390	390	0	96
709	7060	3660	3400	840	27	1106	206	59	873	3060	3119	2719	400	1058	3680	680	3000	HD	80	80	0			-181	449	575	575	0	394
698	6780	3380	3400	556	28	1106	207	60	869	3040	3100	2700	400	1048	3620	620	3000	250	95	95	0			-35	232	54	54	0	89
688	6530	3478	3052	636	29	1100	206	59	871	3060	3119	2760	359	1044	3590	897	2693	HD	85	85	0			-264	195	29	29	0	293

1922 DISTRIBUTION WATER DISTRICT NO 36

JACKSON LAKE			MORAN			HEISE			MORAN-HEISE			REXBURG		HEISE RILEY	DATE 1922	TOTAL							
DATE	GAGE	CAPAC FT	DRIFT	GAGE	DISCH	STD	NAT	DATE	GAGE	DISCH	RILEY	STD	NAT	TOT GAIN	LOSS	GAIN	NAT	GAGE	DISCH	REXBG	DATE	TOTAL	STD
AUG 1	5384	479800	17520	843	10410	8833	1577	AUG 1	397	15240	15263	8612	6651	4853	221	5074	236	507	15770	AUG 2	3	978	1168
AUG 2	5304	461470	18330	865	10900	9241	1659	2	412	15950	15979	9010	6963	5073	231	5304	238	552	16525	4	3	1032	1166
3	5225	443500	17970	869	10990	9060	1930	3	421	16330	16402	8834	7568	5412	226	5638	252	654	17056	5	4	1915	1135
4	5147	425860	17640	869	10990	8894	2096	4	419	16330	16353	8672	7681	5363	222	5585	297	928	17281	6	5	2773	1055
5	5069	408330	17530	856	10670	8838	1832	5	409	15860	15883	8617	7266	5213	221	5434	312	1070	16953	7	6	2059	781
6	5005	394080	14310	775	8880	7215	1665	6	369	14060	14077	7035	7042	5197	180	5377	319	1110	15187	8	7	2279	703
7	4946	380940	13080	732	7950	6594	1356	7	342	12870	12884	6429	6455	4934	165	5099	301	1000	13884	9	8	2829	65
8	4883	368120	12820	723	7750	6463	1287	8	333	12530	12544	6301	6243	4794	162	4956	290	940	13484	10	9	357	922
9	4833	356060	12060	705	7370	6080	1290	9	323	12110	12123	5928	6195	4753	152	4905	296	974	13097	11	10	1141	805
10	4783	345180	10930	694	7110	5511	1599	10	323	12150	12163	5373	6790	5053	138	5191	293	956	13119	11	11	1975	530
11	4738	335370	9760	644	6150	4921	1229	11	300	11210	11215	4798	6417	5065	123	5188	301	1000	12215	12	12	4763	233
12	4695	326080	9320	627	5840	4699	1141	12	285	10660	10675	4582	6093	4835	117	4952	298	985	11660	13	13	1538	211
13	4654	317250	8800	610	5540	4437	1103	13	275	10280	10295	4326	5969	4755	111	4866	288	928	11223	14	14	6498	156
14	4615	308880	8370	590	5190	4220	970	14	274	10280	10292	4114	6178	5102	106	5208	281	890	11182	15	15	6472	140
15	4581	301630	7250	552	4550	3655	895	15	254	9540	9554	3564	5990	5004	91	5095	277	868	10422	16	16	6198	106
16	4550	295050	6580	535	4280	3317	963	16	237	8970	8981	3234	5747	4701	83	4784	274	852	9833	17	17	6255	120
17	4519	288480	6570	535	4280	3312	968	17	232	8800	8814	3229	5585	4534	83	4617	268	821	9635	18	18	6338	491
18	4487	281730	6750	535	4280	3403	877	18	228	8700	8714	3318	5396	4434	85	4519	272	842	9556	19	19	6329	772
19	4454	274820	6910	535	4280	3484	796	19	230	8760	8774	3397	5377	4494	87	4581	286	917	9691	20	20	6445	788
20	4422	268110	6710	535	4280	3383	897	20	236	9000	9015	3298	5717	4735	85	4820	295	968	9983	21	21	6428	447
21	4390	261440	6670	534	4260	3363	897	21	237	9080	9095	3279	5816	4835	84	4919	311	1060	10155	22	22	5966	54
22	4362	255650	5790	515	3960	2919	1041	22	236	9040	9054	2846	6208	5094	73	5167	346	1280	10334	23	23	5671	0
23	4343	251720	3930	474	3360	1981	1379	23	236	9080	9096	1931	7165	5736	50	5786	375	1490	10586	24	24	5062	0
24	4329	248890	2890	409	2520	1457	1063	24	210	8190	8202	1421	6781	5682	36	5718	383	1550	9752	25	25	4487	0
25	4321	247170	1660	341	1770	837	933	25	173	7050	7055	816	6239	5285	21	5306	386	1570	8625	26	26	4012	0
26	4315	245930	1240	302	1440	625	815	26	149	6340	6341	609	5732	4901	16	4917	381	1530	7871	27	27	4043	0
27	4313	245520	410	252	1030	207	823	27	137	6010	6013	202	5811	4983	5	4988	382	1540	7553	28	28	3940	0
28	4313	245520		220	792			28	120	5550	5551			4759			382	1540	7091	29	29	4168	
29	4313	245520		213	744			29	113	5370	5371			4627			382	1540	6911	30	30	4400	
30	4313	245520		213	744			30	112	5340	5341			4597			391	1610	6951	31	31	4437	
31	4315	245930		219	785			31	111	5320	5321			4577			409	1750	7071	SEPT 1	1	4250	
SEPT 1	4313	245520		253	1040			SEPT 1	120	5550	5551			4766			417	1810	7361	2	2	4083	
2	4312	245310		243	963			2	121	5580	5580			4540			416	1810	7390	3	3	3990	
3	4312	245310		229	857			3	121	5580	5581			4618			410	1760	7341	4	4	3792	
4	4315	245930		229	857			4	110	5290	5292			4435			403	1700	6992	5	5	3783	
5	4315	245930		285	1320			5	125	5680	5682			4825			397	1650	7332	6	6	3728	
6	4310	244900		314	1590			6	146	6260	6263			4943			398	1660	7923	7	7	3656	
7	4308	244480		229	857			7	158	6600	6602			5012			397	1650	8252	8	8	3573	
8	4310	244900		140	338			8	130	5820	5820			4963			395	1640	7460	9	9	3438	
9	4314	245720		064	91			9	107	5220	5220			4882			391	1610	6830	10	10	3292	
10	4319	246760		032	34			10	087	4730	4730			4639			387	1580	6310	11	11	3102	
11	4323	247590		030	31			11	077	4500	4500			4466			382	1540	6040	12	12	3121	
12	4327	248410		029	30			12	073	4410	4410			4379			378	1510	5920	13	13	3223	
13	4331	249240		027	27			13	069	4320	4320			4290			373	1470	5790	14	14	3449	
14	4335	250070		024	24			14	063	4190	4190			4163			368	1430	5620	15	15	3542	
15	4339	250890		024	24			15	060	4120	4120			4096			363	1390	5510	16	16	3562	
16	4343	251720		024	24			16	058	4080	4080			4056			363	1380	5460	17	17	3581	
17	4347	252550		024	24			17	056	4040	4040			4016			359	1350	5390	18	18	3652	
18	4351	253370		024	24			18	053	3970	3970			3946			349	1270	5240	19	19	3687	
19	4355	254200		024	24			19	051	3930	3930			3906			345	1240	5170	20	20	3519	
20	4359	255030		024	24			20	049	3890	3890			3866			340	1200	5090	21	21	3541	
21	4362	255650		116	243			21	047	3850	3850			3826			345	1220	5070	22	22	3547	
22	4362	255650		176	518			22	044	3780	3780			3537			340	1190	4970	23	23	3757	
23	4362	255650		164	454			23	057	4060	4060			3542			327	1100	5160	24	24	3884	
24	4362	255650		151	389			24	061	4140	4140			3686			313	1010	5150	25	25	3828	
25	4362	255650		147	370			25	059	4100	4100			3711			303	945	5045	26			

DAILY SUMMARY OF DATA AT AND BETWEEN

DIV HEISE WOOD			WOOD			WOODVILLE			HEISE-WOODVILLE			DIV WOODPORT		PORT		PORTERVILLE			WOOD-PORT				BLACK RIVER		P-B	BLACK			
TOTAL	STD	NAT	TH BAL	GAGE	DISCH	STD	NAT	TOT GAIN	LOSS	STD	NAT	TOTAL	STD	NAT	TH BAL	GAGE	DISCH	STD	NAT	TOT GN	LOSS	STD	NAT	GAGE	DISC	+PORT	DIV	TH BAL	GA
7978	1168	6810	7792	775	8620	7401	1219	828	43	871	2337	987	1350	6283	494	5820	6061	-241	-463	353	-110	420	3	5823	218	5610	3		
8032	1166	6872	8487	794	9290	7799	1491	803	45	848	2360	970	1390	6930	515	6540	6453	87	-390	376	-14	490	40	6580	242	6318	5		
7913	1135	6780	9141	813	9980	7655	2325	839	44	883	2324	480	1844	7656	535	7260	6780	480	-396	395	-1	550	103	7363	248	7115	6		
7723	1055	6728	9498	822	10300	7574	2726	802	43	845	2243	40	2203	8057	545	7620	7120	500	-437	414	-23	572	135	7755	243	7512	6		
7659	781	6878	9294	822	10300	7793	2507	1006	43	1049	2280	40	2240	8020	545	7620	7327	293	-400	426	26	600	183	7803	242	7561	6		
7279	703	6576	7908	792	9220	6297	2923	1312	35	1347	2248	36	2212	6972	516	6580	5917	663	-392	344	-48	626	235	6815	178	6640	6		
7239	658	6631	6595	754	7900	5739	2161	1305	32	1337	2221	40	2181	5679	482	5420	5386	34	-259	313	54	628	239	5659	171	5488	5		
7157	922	6235	6327	740	7420	5347	2073	1093	32	1125	2242	40	2202	5178	468	4960	5015	-55	-218	292	74	614	210	5170	233	4937	3		
7041	805	6396	5956	731	7110	5093	2017	1154	30	1184	2202	40	2162	4908	463	4800	4775	25	-108	278	170	608	198	4998	216	4782	5		
7015	530	6445	6144	730	7080	4816	2264	936	27	963	2157	40	2117	4923	464	4830	4513	317	-93	263	170	632	247	5077	219	4858	5		
7063	233	6530	5452	717	6650	4541	2109	1198	24	1222	2007	2	2005	4643	456	4580	4289	291	-63	250	187	664	321	4901	221	4680	5		
6538	211	6327	5122	708	6360	4348	2012	1238	23	1261	1969	0	1969	4391	448	4330	4109	221	-61	239	178	662	316	4646	199	4447	5		
6498	156	6342	4725	699	6070	4148	1922	1345	22	1367	1898	0	1898	4172	440	4080	3920	160	-92	228	136	670	334	4414	201	4213	5		
6472	140	6332	4710	690	5780	3953	1827	1070	21	1091	1902	0	1902	3878	432	3840	3736	104	-38	217	179	650	288	4128	183	3945	4		
6198	106	6092	4224	678	5410	3440	1970	1186	18	1204	1905	0	1905	3505	420	3490	3251	239	-15	189	174	622	226	3716	178	3538	4		
6255	120	6135	3578	662	4930	3098	1832	1352	16	1368	1841	0	1841	3089	405	3060	2928	132	-29	170	141	608	198	3258	189	3069	4		
6338	491	5847	3297	649	4550	2722	1828	1253	16	1269	1752	0	1752	2798	392	2700	2572	128	-98	150	52	592	169	2869	169	2700	4		
6329	772	5557	3227	643	4380	2529	1851	1153	17	1170	1741	0	1741	2639	386	2540	2390	150	-99	139	40	590	165	2705	191	2514	4		
6445	788	5657	3246	646	4470	2592	1878	1224	17	1241	1781	0	1781	2689	390	2650	2449	201	-39	143	104	620	222	2872	185	2687	4		
6428	447	5981	3555	654	4700	2835	1865	1145	16	1161	1787	0	1787	2913	397	2870	2679	191	-43	156	113	641	267	3137	193	2944	4		
5966	54	5912	4189	669	5140	3209	1931	951	16	967	1646	0	1646	3494	414	3320	3033	287	-174	176	2	694	372	3692	203	3489	4		
5671	0	5671	4663	687	5690	2832	2858	1027	14	1041	1574	0	1574	4116	434	3900	2676	1224	-216	156	-60	775	511	4411	224	4187	5		
5062	0	5062	5524	707	6320	1921	4399	796	10	806	1434	0	1434	4886	458	4640	1815	2825	-246	106	-140	810	575	5215	237	4978	5		
4487	0	4487	5265	706	6290	1414	4876	1025	7	1032	1373	0	1373	4917	458	4640	1336	3304	-277	78	-199	790	538	5178	232	4946	5		
4012	0	4012	4613	685	5620	812	4808	1007	4	1011	1320	0	1320	4300	441	4110	767	3343	-190	45	-145	640	263	4373	224	4149	5		
4043	0	4043	3828	665	5020	606	4414	1192	3	1195	1277	0	1277	3743	425	3640	573	3067	-103	33	-70	564	122	3762	208	3554	4		
3940	0	3940	3613	648	4520	201	4319	907	1	908	1439	0	1439	3081	408	3140	190	2950	59	11	70	552	103	3243	198	3045	4		
1168			2923	626	3930			1007			1367			2563	388	2600			37			526	71	2671	185	2486			
100			2511	606	3440			929			1291			2149	376	2280			131			500	46	2326	157	2167	3		
137			2514	602	3350			836			1364			1986	370	2120			134			541	88	2208	154	2054	3		
1250			2821	612	3580			759			1336			2244	379	2350			106			558	109	2459	164	2295	4		
1083			3278	628	3980			702			1306			2674	391	2680			6			614	202	2882	175	2707	4		
1990			3400	636	4190			790			1323			2867	399	2890			23			638	250	3140	170	2970	4		
1792			3549	637	4220			671			1339			2881	403	3000			119			640	254	3254	165	3089	4		
1783			3209	634	4140			931			1338			2802	398	2870			68			658	293	3163	167	2996	4		
1728			3604	643	4380			776			1344			3036	399	2890			-146			548	93	2983	169	2814	4		
1656			4267	654	4700			433			1346			3354	409	3170			-184			545	89	3259	170	3089	4		
1573			4679	669	5140			461			1354			3786	422	3550			-236			536	77	3627	170	3457	4		
1438			4022	656	4750			728			1300			3450	415	3340			-110			524	64	3404	169	3235	4		
1292			3538	640	4300			762			1275			3025	401	2950			-75			518	57	3007	168	2839	4		
1102			3208	627	3950			742			1252			2698	390	2650			-48			503	44	2694	167	2527	4		
1121			2919	610	3530			611			1230			2300	375	2250			-50			491	34	2284	128	2156	3		
1223			2697	598	3260			563			1212			2048	365	2000			-48			473	22	2022	128	1894	3		
1449			2341	582	2930			589			1146			1784	357	1800			16			493	35	1835	128	1707	3		
1542			2078	573	2760			682			1090			1670	349	1620			-50			471	21	1641	128	1513	3		
1562			1948	557	2490			542			1102			1388	334	1300			-88			465	17	1317	128	1189	3		
1581			1879	547	2340			461			1099			1241	325	1130			-111			462	16	1146	125	1021	2		
1652			1738	541	2240			502			1068			1172	322	1080			-92			480	25	1105	125	980	2		
1687			1553	532	2120			567			1028			1092	316	980			-112			474	22	1002	124	878	2		
1519			1651	525	2020			369			1005			1015	309	866			-149			465	17	883	122	761	2		
1541			1549	517	1920			371			967			953	308	796			-157			463	16	812	120	692	2		
1547			1523	515	1900			377			953			947	302	768			-179			482	27	795	119	676	2		
1757			1213	514	1880			667			986			894	304	796			-98			483	27	795	119	676	2		
1884			1276	506	1780			504			978			802	296	690			-112			491	33	823	119	704	2		
1888			1262	500	1710			448			972			798	285	560			-178			510	47	723	119	604	2		
1834			1211	488	1580			369			950			612	E	530			-82			505	43	607	119	488	2		
1827			1133	483	1520			387			905			570	E	500			-70			506	44	573	119				

VEEN SNAKE RIVER GAGING STATIONS FROM JACKSON LAKE WYOMING TO MILLS IDAHO

Table with columns: DATE, GAGE, DISCH, STD, NAT, TOT, LOSS, GAIN, CUM LOSS, CORR APPLD, DATE, GAGE, DISCH, STD, NAT, GAIN, DATE, GAGE, CAPAC FT, DRAFT, GAGE, DISCH, GAGE, DISCH, TOTAL, STD. Includes sub-headers for BLACKFOOT, PORT-BLACK, NEELEY, B-N, LAKE WALCOTT, NSMINC, SSMINC, NS-SSMINC.

Summary rows at the bottom of the table, including totals for various columns like 257960, 20333, 1297, 167, 257960, 341144, 2796, 26635, 1414, 1414, 132211.

INS	MIN	MINIDOKA			N-M	DATE	L-MIL	PALAT			NSTFCAN		PA-NSTFCAN			SSTFCANAL			MURTAUGH		MIL	MILNER		M-M					
		NAT	TH BAL	GAGE				DISCH	STD	NAT	LOSS	1922	GAGE	GAGE	DISC	GAGE	DISCH	TOTAL	STD	NAT		GAGE	DISCH		STD	NAT	GAGE	DISC	STD
0	4884	666	5980	3117	2863	-1096	AUG 5	11.00	206	57	855	2980	3057	2700	337	1030	3510	984	2526	247	94	94	0	-661	174	18	18	0	679
0	5576	656	5730	2670	3060	-154	6	1083	206	57	854	2970	3027	2667	360	1027	3490	790	2700	H.D	61	61	0	-848	180	22	22	0	870
0	6074	663	6050	2977	3073	-36	7	1090	206	57	859	3000	3057	2695	362	1018	3430	719	2711	H.D	40	40	0	-477	262	22	22	0	559
0	7022	690	6580	3575	3005	442	8	1097	206	57	862	3010	3067	2713	354	1014	3410	759	2651	H.D	72	72	0	31	604	1630	1630	0	1599
0	7825	686	6480	3325	3155	1845	10	1086	H.D	37	850	2980	3028	2668	360	1012	3400	697	2703	H.D	58	58	0	1044	544	1150	1150	0	106
0	6403	653	5660	2441	3219	743	11	1080	182	43	842	2910	2987	2616	371	1011	3390	606	2784	H.D	63	63	0	40	182	22	22	0	-18
0	6177	651	5610	2390	3280	567	12	1069	182	43	834	2870	2953	2574	379	1011	3390	550	2840	226	83	83	0	-766	172	18	18	0	784
0	5879	651	5610	2372	3298	269	13	1063	182	43	829	2850	2913	2527	386	985	3230	336	2894	218	79	79	0	-612	170	16	16	0	628
0	5928	648	5530	2333	3197	398	14	1066	182	43	832	2860	2903	2512	381	971	3150	293	2857	210	75	75	0	-508	170	16	16	0	524
0	6279	644	5440	2129	3311	839	15	1061	186	45	821	2810	2853	2527	376	970	3140	319	2821	206	73	73	0	-586	171	17	17	0	603
0	5499	633	5170	1934	3296	329	16	1050	184	44	810	2750	2833	2465	390	964	3110	189	2921	206	73	73	0	-598	170	16	16	0	614
0	4750	617	4820	1516	3284	-50	17	1031	184	44	776	2590	2794	2413	381	960	3080	225	2855	H.D	63	63	0	-767	167	15	15	0	782
0	5576	607	4580	1432	3143	996	18	1008	184	44	697	2200	2244	1874	370	921	2860	82	2778	0.70	15	15	0	-929	162	13	13	0	942
0	4942	592	4250	995	3255	692	19	1000	H.D	40	700	2220	2260	1877	383	913	2820	-52	2872	H.D	7	7	0	-837	166	15	15	0	852
0	3989	599	4400	1272	3128	-411	20	1015	H.D	40	713	2280	2320	1952	368	909	2790	30	2760	0.96	25	25	0	-735	166	15	15	0	730
0	4061	590	4200	1021	3179	-139	21	1011	172	40	717	2300	2340	1966	374	912	2810	5	2805	0.87	22	22	0	-972	166	15	15	0	987
0	4237	598	4380	1155	3225	-143	22	1018	164	36	697	2200	2236	1857	379	926	2860	14	2846	0.81	19	19	0	-735	166	15	15	0	750
0	3950	584	4070	878	3192	-120	23	1011	176	42	680	2120	2162	1786	376	933	2870	54	2816	0.79	18	18	0	-980	166	15	15	0	995
0	3816	583	4050	893	3157	-234	24	1005	180	44	677	2110	2154	1783	371	931	2860	74	2786	0.79	13	13	0	-982	162	13	13	0	995
0	3736	589	4180	820	3360	-444	25	1005	180	44	714	2290	2334	1834	500	931	2860	0	2860	0.80	17	17	0	-1033	161	12	12	0	1045
1457	4667	624	4960	1560	3400	-293	26	1030	180	44	783	2620	2664	2104	560	928	2840	0	2840	0.80	19	19	0	-563	164	14	14	0	577
1726	5947	655	5700	1002	4698	247	27	1081	180	44	850	2950	2994	1166	1828	932	2870	0	2870	H.D	46	46	0	-210	286	111	111	0	321
1726	6767	665	5950	775	5175	817	28	1103	180	44	864	3020	3064	799	2265	939	2910	0	2910	H.D	57	57	0	-81	321	165	165	0	246
1726	5897	631	5130	99	5031	767	29	1097	180	44	827	2830	2874	783	2091	945	2940	0	2940	DRY	0	0	0	-684	174	18	18	0	702
1726	5054	605	4530	-44	4574	524	30	1038	180	44	759	2480	2524	890	1634	945	2940	0	2940	DRY	0	0	0	-934	172	18	18	0	952
1726	4868	601	4440	-5	4445	428	31	995	180	44	649	1940	1984	439	1545	938	2900	0	2900	DRY	0	0	0	-444	168	16	16	0	460
1726	5431	599	4400	136	4264	1031	SEPT 1	967	180	44	642	1910	1954	620	1334	943	2930	0	2930	DRY	0	0	0	-484	162	13	13	0	497
1726	4878	610	4640	916	3724	238	2	986	H.D	41	647	1930	1971	1197	774	946	2950	0	2950	DRY	0	0	0	-281	162	13	13	0	294
1726	4396	610	4640	1206	3434	-244	3	996	180	44	665	2020	2064	1590	474	948	2960	0	2960	DRY	0	0	0	-384	163	13	13	0	397
1726	4365	607	4580	996	3584	-215	4	997	180	44	675	2070	2114	1460	654	944	2930	0	2930	DRY	0	0	0	-464	162	13	13	0	477
1726	4579	611	4660	726	3934	-81	5	984	180	44	668	2030	2074	1080	994	945	2940	0	2940	DRY	0	0	0	-354	164	14	14	0	368
1726	4825	615	4760	526	4234	65	6	986	180	44	670	2040	2084	770	1314	942	2920	0	2920	DRY	0	0	0	-244	165	14	14	0	258
1726	5012	615	4760	466	4294	252	7	977	180	44	667	2030	2074	650	1424	932	2870	0	2870	H.D	14	14	0	-198	164	14	14	0	212
1726	5027	622	4920	716	4144	107	8	980	180	44	681	2090	2134	850	1284	930	2860	0	2860	0.80	19	19	0	-93	168	16	16	0	109
1726	4814	619	4850	706	4144	-36	9	1005	180	44	691	2140	2184	900	1284	931	2860	0	2860	0.80	19	19	0	-213	170	16	16	0	229
1726	4625	620	4870	666	4204	-245	10	1017	180	44	719	2280	2324	980	1344	930	2860	0	2860	0.91	23	23	0	-337	171	17	17	0	354
1726	4695	616	4780	426	4354	-85	11	1023	180	44	733	2340	2384	830	1554	921	2800	0	2800	0.91	23	23	0	-427	172	18	18	0	445
1726	4763	617	4800	566	4234	-37	12	1027	180	44	758	2460	2504	1060	1444	918	2790	0	2790	1.48	49	49	0	-543	172	18	18	0	561
1726	4943	612	4690	516	4174	253	13	1021	180	44	738	2370	2414	1030	1384	918	2790	0	2790	1.49	49	49	0	-563	172	18	18	0	581
1726	4141	596	4330	606	3724	-189	14	1008	182	45	553	1500	1545	601	944	917	2780	0	2780	1.46	48	48	0	-43	172	18	18	0	61
1726	3571	557	3520	86	3434	51	15	998	180	44	H.D	906	950	306	644	919	2790	0	2790	1.44	47	47	0	-267	170	16	16	0	283
1583	3012	522	2870	-377	3247	142	16	994	181	45	H.D	402	447	0	447	920	2800	0	2800	1.41	46	46	0	-423	170	16	16	0	439
1397	2802	507	2620	-563	3183	182	17	996	182	45	232	348	393	0	393	919	2790	0	2790	1.44	47	47	0	-610	170	16	16	0	626
1258	2698	507	2620	-622	3242	78	18	993	180	44	247	388	432	0	432	922	2810	0	2810	1.56	52	52	0	-674	172	18	18	0	692
879	2622	513	2720	-481	3201	-98	19	1003	182	45	239	366	411	0	411	918	2790	0	2790	1.79	64	64	0	-545	172	18	18	0	563
736	2859	510	2670	-474	3144	189	20	1009	182	45	240	369	414	0	414	908	2730	0	2730	2.11	80	80	0	-554	172	18	18	0	572
306	2586	505	2580	-574	3154	16	21	1010	182	45	240	369	414	0	414	909	2740	0	2740	H.D	40	40	0	-614	172	18	18	0	632
61	2892	503	2550	-629	3179	342	22	1000	182	45	H.D	424	469	0	469	904	2710	0	2710	2.11	80	80	0	-709	172	18	18	0	727
0	2607	523	2890	-330	3220	-283	23	1002	182	45	520	1400	1445	965	480	909	2740	0	2740	2.11	80	80	0	-1375	172	18	18	0	1393
0	2508	536	3120	-170	3290	-612	24	1003																					

DISTRIBUTION WATER DISTRICT NO 36

DATE	NEELEY				DATE	LAKE WALCOTT			NS MINC		SS MIN C		NS&SS MIN CAN		MIN		MIN IDOKA		N-M			
	GAGE	DISCH	STD	NAT		1922	GAGE	CAPAC	DRAFT	GAGE	DISCH	GAGE	DISCH	TOTAL	STD	NAT	TH BAL	GAGE	DISCH	STD	NAT	LOSS
1922																						
Oct 2	4.22	3180	0	3180	Oct 3	40.52	45450	746	745	1040	303	363	1403	1179	224	2523	499	2490	-466	2956	33	
3	4.19	3110	0	3110	4	40.47	44930	262	707	952	302	362	1314	1027	287	2058	501	2520	-303	2823	-462	
4	4.20	3130	0	3130	5	40.42	44400	267	700	937	301	360	1297	945	352	2100	486	2300	-478	2778	-200	
5	4.19	3110	0	3110	6	40.41	44290	55	698	933	301	360	1293	956	337	1872	472	2100	-673	2773	-228	
6	4.22	3180	0	3180	7	40.48	45030	-373	700	937	302	362	1299	892	407	1508	467	2030	-743	2773	-522	
7	4.23	3200	0	3200	8	40.57	45980	-479	701	939	302	362	1301	851	450	1420	461	1960	-790	2750	-540	
8	4.23	3200	0	3200	9	40.63	46620	-323	707	952	303	363	1315	882	433	1562	463	1980	-787	2767	-418	
9	4.26	3270	0	3270	10	40.68	47140	-262	706	950	304	365	1315	884	431	1693	462	1970	-869	2839	-277	
10	4.27	3290	0	3290	11	40.68	47140	0	699	935	305	367	1302	888	414	1988	466	2020	-856	2876	-32	
11	4.25	3240	0	3240	12	40.76	47990	-429	696	928	296	351	1279	905	374	1532	478	2180	-686	2866	-648	
12	4.27	3290	0	3290	13	40.87	49150	-585	700	937	242	259	1196	515	681	1509	466	2020	-589	2609	-511	
13	4.29	3340	0	3340	14	40.97	50210	-534	702	941	1.91	185	1126	665	461	1680	464	1990	-889	2879	-310	
14	4.28	3310	0	3310	15	41.15	52140	-973	704	946	-0.37	0	946	498	448	1391	444	1750	-1112	2862	-359	
15	4.32	3410	0	3410	16	41.30	53750	-812	703	944	DRY	0	944	430	514	1654	477	2170	-726	2896	-516	
16	4.40	3600	0	3600	17	41.45	55360	-812	705	948	DRY	0	948	264	684	1840	478	2180	-736	2916	-340	
17	4.49	3820	0	3820	18	41.78	58910	-1790	H.D	585	DRY	0	585	-346	931	1445	478	2180	-709	2889	-735	
18	4.58	4050	0	4050	19	42.05	61830	-1472	DRY	0	DRY	0	0	-1331	1331	2578	478	2180	-539	2719	398	
TOTAL			0					-7514						10104					-11951		-5667	
MEAN																						-333

POSTSEASON SUMMARY OF DATA NEELEY TO MILNER IDAHO (CONTINUED)

DATE	LMIL		PALAT		NSTFC		PA+NSTFCAN			SSTFCANAL				MURTAUGH C				MIL		MILNER		M-M		
	GAGE	DISCH	GAGE	DISCH	GAGE	DISCH	TOTAL	STD	NAT	GAGE	DISCH	STD	NAT	GAGE	DISCH	STD	NAT	TH BAL	GAGE	DISCH	STD		NAT	GAIN
Oct 4	9.85	H.D	16	241	372	388	0	388	8.74	2550	0	2550	DRY	0	0	0	0	-448	1.74	18	0	18	466	
5	10.10	DRY	0	234	353	353	0	353	8.55	2450	0	2450	DRY	0	0	0	0	-283	1.78	20	0	20	303	
6	10.22	DRY	0	239	366	366	0	366	8.44	2390	0	2390	DRY	0	0	0	0	-456	1.80	22	0	22	478	
7	10.24	DRY	0	276	471	471	0	471	8.24	2280	0	2280	DRY	0	0	0	0	-651	1.80	22	0	22	673	
8	10.16	DRY	0	290	513	513	0	513	8.15	2240	0	2240	DRY	0	0	0	0	-723	1.78	20	0	20	743	
9	10.06	DRY	0	289	510	510	0	510	8.12	2220	0	2220	DRY	0	0	0	0	-770	1.77	20	0	20	790	
10	9.98	DRY	0	288	507	507	0	507	8.16	2240	0	2240	DRY	0	0	0	0	-767	1.76	20	0	20	787	
11	9.82	DRY	0	286	501	501	0	501	8.30	2320	0	2320	DRY	0	0	0	0	-851	1.74	18	0	18	869	
12	9.68	DRY	0	285	498	498	0	498	8.39	2360	0	2360	DRY	0	0	0	0	-838	1.73	18	0	18	856	
13	9.68	DRY	0	285	498	498	0	498	8.36	2350	0	2350	DRY	0	0	0	0	-668	1.72	18	0	18	686	
14	9.63	DRY	0	H.D	263	263	0	263	8.30	2320	0	2320	DRY	0	0	0	0	-563	1.90	26	0	26	589	
15	9.61	DRY	0	290	532	532	0	532	8.32	2330	0	2330	DRY	0	0	0	0	-872	1.71	17	0	17	839	
16	9.53	DRY	0	288	526	526	0	526	8.30	2320	0	2320	DRY	0	0	0	0	-1096	1.70	16	0	16	1112	
17	9.58	DRY	0	311	600	600	0	600	8.23	2280	0	2280	DRY	0	0	0	0	-710	1.70	16	0	16	726	
18	9.60	DRY	0	326	650	650	0	650	8.18	2250	0	2250	DRY	0	0	0	0	-720	1.70	16	0	16	736	
19	9.50	DRY	0	324	643	643	0	643	8.14	2230	0	2230	DRY	0	0	0	0	-693	1.68	16	0	16	709	
20	9.10	DRY	0	323	640	640	0	640	H.D	709	0	709	DRY	0	0	0	0	831	H.D	1370	0	1370	539	
TOTAL																								
MEAN								0				0												119.51

All discharge quantities are given in second feet

SEGREGATION OF FLOW.

Plate X shows graphically both the actual total flow and the computed normal flow past the Moran and Heise gaging stations during the season of 1922. The difference between the total and normal flow graphs on any date of course indicates storage.

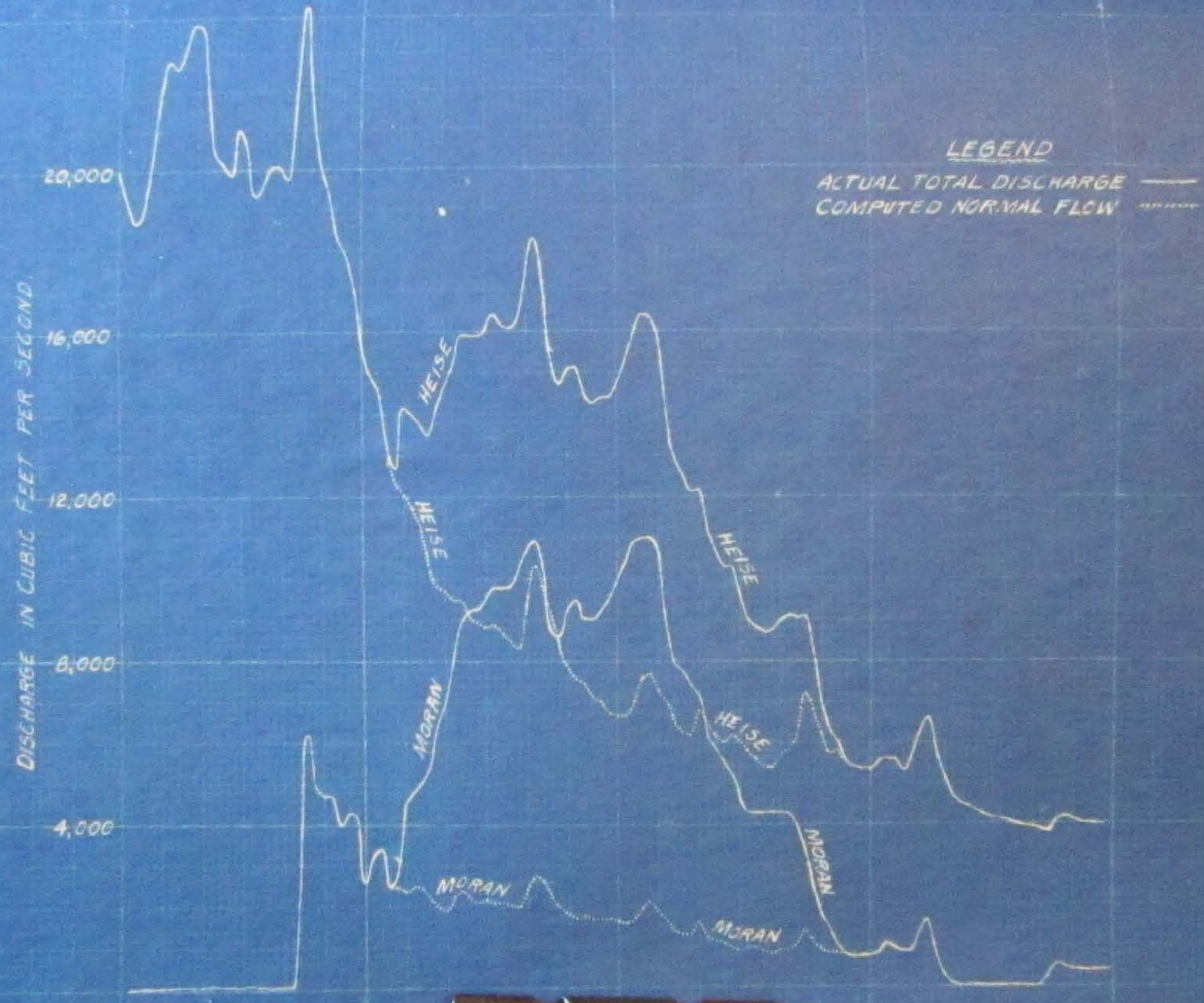
These graphs are plotted from the special day discharges with the time interval adjusted to make them coincide with the nearest regular day at Heise. For example, the Heise data shown for July 15 really represent mean quantities for the 24 hour period ending at 4 a.m. on July 16, while the indicated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

JACKSON LAKE 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 unknown factors which may or may not be fair. 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. Without data upon which to base any equitable segregation of those several factors, however, the method heretofore followed appears to be the most practicable which can be devised.

Between the Moran and Woodville gaging stations stored water losses were determined and applied in exactly the same manner as during the three preceding seasons,* viz., $2\frac{1}{2}$ per cent between the Moran and Heise stations and computed losses based upon the average of the two preceding days between the Heise and Woodville stations, with minimum loss in the latter section never less than one-half of one per cent.

Under 1922 procedure 6 per cent was deducted from all through storage which passed the Woodville gaging station as transmission loss from that point to the Blackfoot station on Snake River. This change from former practice, as previously indicated, was made to avoid the Blackfoot River exchange heretofore effective and at the same time to take account as nearly as possible of the reduction in observed transmission losses attributable to unmeasured inflow from surface waste. (Based on 1921 investigations.)

In the final computed records contained on Plates VII and VIII where data for the Porterville river station are included, $5\frac{1}{2}$ per cent loss was applied between Woodville and Porterville and one-half of one per cent between Porterville and Blackfoot.

* Pages 27 & 28, Water Distribution and Hydrometric Work in District No. 36, 1919, by G. Clyde Baldwin.

Losses for all storage delivered to canals diverting above the Blackfoot gaging station were computed upon the basis of the 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 about 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 grouping of losses would seem to be at least a reasonably fair one. 1922 calculations show that these upper valley canals should have received at their headgates 97.0125 per cent of the storage turned out for them at Moran.

Storage released for the Minidoka and Twin Falls canals was charged with prorata losses to the Blackfoot gaging station, which as computed for the season averaged 8.7816- per cent; hence delivery to these canals should have been upon the basis of 91.2184+ per cent of amounts released from Jackson Lake.

The difference between these applied losses and those of the two preceding years is due almost entirely to the change of plan effective between Woodville and Blackfoot. Had the former system again prevailed the lower valley canals would have received probably about 6,000 second-feet more storage, but about 4,000 second-feet less normal flow.

Plate XI contains a summary of the daily and total deliveries of Jackson Lake storage to each company or canal owning rights therein. Deliveries are shown in second-feet for actual dates at the head of the respective canals. In cases where storage rights were sold for delivery through other canals, both the parties owning the right and those receiving the water are indicated in the first column or by footnotes.

JACKSON LAKE

	31	A-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	S		
1	22	22	21	22	22	22	16	13	13	12	12	4	14	14	11	13	10	13	13	13	14	14	13												
2	60	60	62	62	60	60	60	57	60	59	60	50	50	34	28	0	0	0	0	114	121	6													
3	46	47	46	40	46	47	46	27																											
4	15	35	57	56	56	56	56	51	47	47	47	47	45	47	47	45	38	43	35	30	38	25													
5		166	162	162	162	157	79	75	79	239	220	40	37	33	40	40	33	33	40	200	193	52	40												
6	102	102	115	120	115	115	91	90	91	84	72	46	56	54	42	39	28	23	41	45	52	54													
7	45	36	44	42	41	43	42	37	41	36	38	37	41	28	9	0	0	5	5	7	8	11													
8	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2													
9	27	40	39	39	43	12																													
10	30	20	20	20	20	20	17	20																											
11	1	0	1	1	1	1	1	1																											
12	0	1	1	1	1	1	1	1																											
13	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	1												
14	4	4	5	4	4	4	5	4	4	4	5	4	4	4	5																				
15	405	409	405	412	386	340	299	281	267	299	294	245	0	0	0	0	0	0	356	361	361	283													
16	758	1127	1168	1166	1135	1055	781	703	658	922	805	530	233	211	156	140	106	120	491	772	788	447	54												
17	40	40	40	51	40	40	40	36	40	40	40	40	2																						
18			947	919	440																														
19	40	40	937	970	480	40	40	36	40	40	40	40	2																						
20	0	0	0	0	0	554	1240	103	703	985	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	199	430	258	-38	-338	-266				
21	1268	1115	1200	1494	1921	2386	2361	2308	2291	2283	2236	2032	1966	1997	1836	1668	1588	1765	1388	930	653	560	775	1035	1425	327	53	50	0	0	0				
22	94	85	85	84	92	94	61	40	72	58	63	83	79	75	73	73	63	15	18	7	25	22	19	18	18	19	19	46	57	0	0	0			
23	1104	1185	1212	1258	1103	994	802	731	771	709	618	560	345	302	328	198	233	189	89	-44	38	13	22	62	31	0	0	0	0	0	0	0	0	0	
24	2795	2790	2804	2817	2787	2708	2677	2705	2723	2678	2626	2582	2534	2519	2535	2472	2420	2254	1880	1884	1959	1973	1864	1793	1789	1846	2118	1182	815	801	908	455			
25	0	0	0	0	0	0	0	60	1608	1128	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	95	149					

LAKE WALCOTT S

	31	A-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	S
1	1251	1385	1310	1006	499	0	0	0	0	0	41	187	255	205	345	513	614	507	886	1282	1434	1377	994	740	395	0	0	0	89	150	270	310	

Lake Walcott deliveries were limited to the Minidoka canals during the time when there was Jackson Lake storage in the river. This fact accounts for the small minus quantities which are shown on four different dates as stored in Lake Walcott. Storage delivered to the Twin Falls canals after August 31 was necessarily from Lake Walcott, but was authorized by the U. S. Reclamation Service officials in order to permit closing the outlet gates at Jackson Lake at an earlier date than would otherwise have been possible.

Less storage was required by upper valley canals than in any one of the three preceding years. Likewise, less storage was released from the reservoir than in any one of these three years. The Farmers Friend and Rudy canals and the Sunndell Irrigation District in the upper valley used practically the full amount of Jackson Lake storage to which they were entitled, but balances of varying amount remained to the credit of all other canals at the end of the season. Below American Falls the North Side Canal Co. Ltd. used all but about 13,000 acre-feet of their total storage right though part of the storage was supplied from Lake Walcott. In a number of instances, due to revisions of ratings, etc., the final computed totals differ slightly from those indicated by the summer or field computations, but in no case is the discrepancy of very great magnitude.

The small minus storage charge against the Twin Falls Canal Co. on August 19 represents a storage credit on account of underdelivery which was allowed in order to simplify the record on this date.

Early in September the Murtaugh or Milner Low Lift Canal completed a contract with the U. S. Reclamation Service under which they are to be assured of 15,000 acre-feet of Jackson Lake storage capacity pending the creation of storage at American Falls, when it is understood that a larger amount will probably be made available from the latter source. Stored water used by

the canal prior to the execution of this contract was procured by seasonal rental or purchase.

MINIDOKA AND MILNER ADJUSTMENTS.

As noted on Plate XI water was wasted past Milner Dam to an amount in excess of the normal leakage through the dam on eleven different days during the period of Jackson Lake storage delivery. All of this extra waste consisted of stored water, though in practically every instance it was caused by unexpected increases in the normal flow attributable to summer rains. Therefore, in order to balance all storage accounts, charges must be adjusted in some way to include this surplus which really benefitted none of the canals.

The same plan followed in the 1920 and 1921 reports has been used herein. In brief, this provides for prorating this extraordinary waste between the Minidoka and Milner canals in accordance with their respective seasonal diversions of Jackson Lake storage.

The total to be distributed in 1922 consisted of about 4,190 second-feet which actually passed Milner Dam and excess deliveries at times when water probably otherwise would have been wasted totaling 105 second-feet to the Murtaugh or Milner Low Lift Canal and 3,488 second-feet to the North Side Canal Co. Ltd. Much of the avoidable waste which occurred August 7-9 and August 27-28 inclusive was due to under acceptance of storage ordered amounting to 1,680 second-feet on the part of the Twin Falls Canal Co. and 3,714 second-feet for the North Side Canal Co. Ltd. In determining the final adjustment corrections these under-acceptances were charged directly against the canal which had ordered the storage, while credit was given for excess deliveries, leaving a net waste balance of 2,187 second-feet to be prorated against all Minidoka and Milner canals in the manner above outlined.

The quantities contained in the adjustment column on Plate XI are

the algebraic sum or combination of these charges and credits.

It should perhaps here be explained that beginning August 25 the North Side Canal Co. Ltd. was credited, under a temporary transfer, with unused normal flow to which the Twin Falls Canal Co. was entitled under the Foster decree. During two short periods in September when the combined draft of the Milner canals failed to equal their combined normal flow right, this surplus normal flow credit was extended to the Minidoka canals upstream.

This transfer was particularly beneficial to the North Side Canal Co. Ltd., and while it was partially responsible for the failure of this company to accept all storage ordered during the latter part of August, in the end the water gained through the arrangement considerably exceeded all incidental loss.

Ordinary leakage or waste through Milner Dam prior to August 25 was charged against the two large Milner canals 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. After that date all ordinary waste was charged against the storage rights of either the North Side Canal Co. Ltd. or the Minidoka Project, depending upon which one was at the time receiving the benefit of the Twin Falls Canal Co. normal flow underdraft.

On Plate XI all normal waste or ordinary leakage past Milner Dam has been combined and included with the regular storage charges against the respective canals.

RIVER LOSSES AND GAINS.

Losses and gains throughout different sections of Snake River are included in the data contained on Plates VII, VIII and IX, 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.

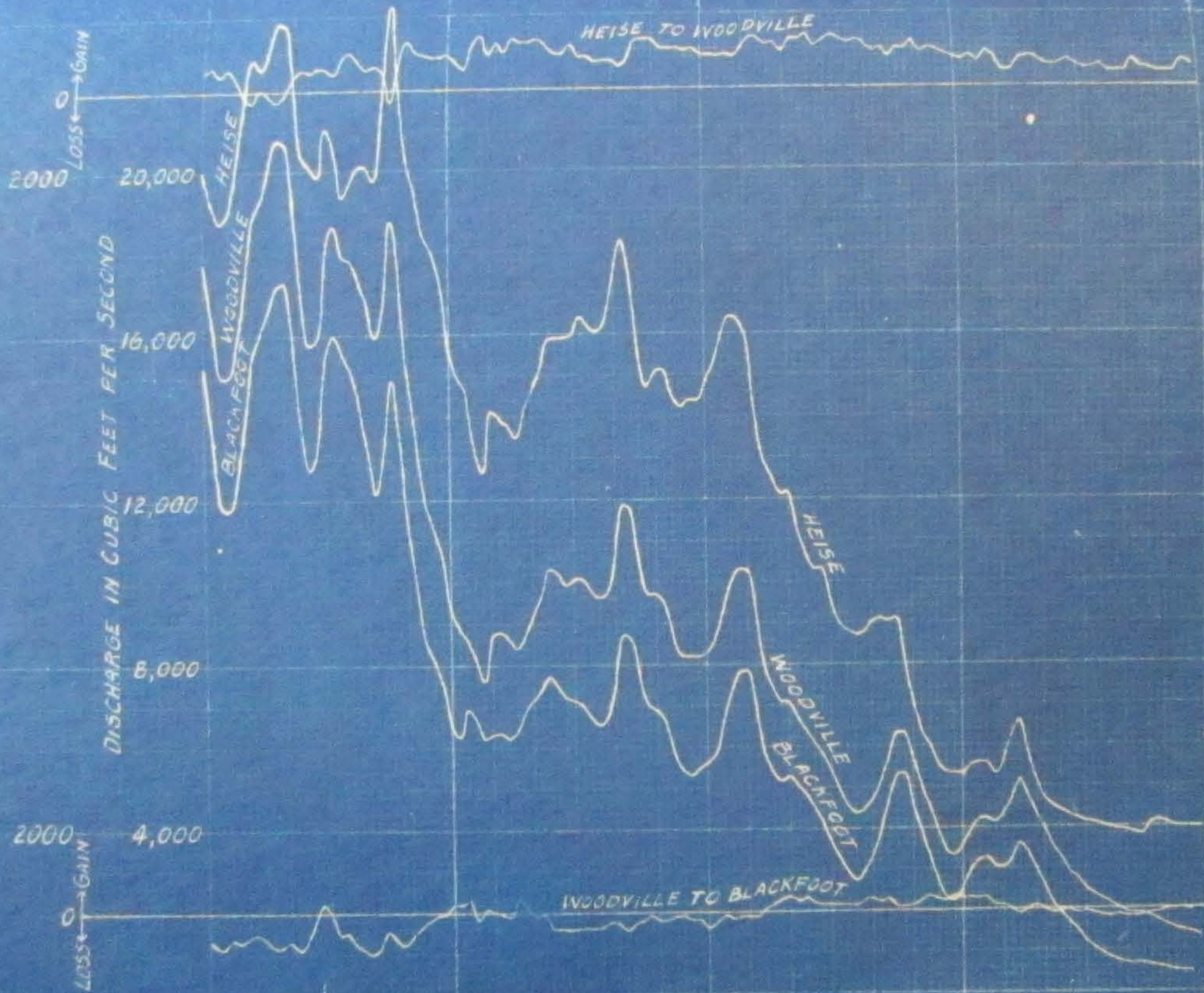
Plate XII contains hydrographs of the total flow passing the Heise Woodville and Blackfoot gaging stations during the period from June to September together with graphs showing the net losses and gains in the two intervening sections. All graphs are plotted to the same scale and with a time interval 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. In fact the general characteristics of these graphs differ but little from those of former years except that we note less loss between Heise and Woodville during the June high water period. This may be due to a variety of causes such as slight inaccuracy in the Heise high stage rating either for this or former years, larger unmeasured waste back to the river which might be expected in view of the unusually heavy June diversions or to higher ground water level resulting from maximum seasonal river discharges noted during May, 1922.

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 differences noted in the shape of the three hydrographs.

No diagrams are included for the Porterville station, but complete data are listed on Plates VII and VIII, in accordance with previous practice.

During 1921 two sets of measurements were obtained covering all surface waste or return flow entering the river between the Woodville and Blackfoot gaging stations. These are summarized in the report for the 1921 season and afford the basis for the application of 6 per cent as storage transmission loss through this section of the river.



Three additional sets of measurements of similar character were secured during 1922 and are summarized as follows:

Right Bank River

Left Bank River

Name	Date	Ant.	Date	Ant.	Date	Ant.	Name	Date	Ant.	Date	Ant.	Date	Ant.
Royal Gulch	7/13	Dry	8/9	Dry	8/28	Dry							
Badside	"	Dry	"	Dry	"	Dry							
Woodville Bridge													
# 1	7/13	Dry	8/9	Dry	8/28	Dry	# 1	7/13	0.75	8/9	2.50	8/28	0.75
2	"	Dry	"	0.06	"	0.07	2	"	0.10	"	0.02	"	0.03
3	"	0.10	"	0.10	"	Dry							
4	"	3.32	"	4.91	"	6.69							
5	"	0.10	"	0.02	"	Dry							
6	"	0.30	"	0.06	"	0.04							
6a	"	0.30	"	0.10	"	Dry							
7	"	2.56	"	0.64	"	1.09							
8	"	0.20	"	0.07	"	0.15							
9	"	16.24	"	2.40	"	40.93							
Lower Shelley Bridge													
#10	"	1.41	"	0.99	"	Dry	# 3	"	Dry	"	Dry	"	Dry
11	"	0.25	"	Dry	"	Dry	4	"		"		"	
							4a)	"	0.60	"	1.08	"	0.65
							4b)	"		"		"	
12	"	Dry	"	Dry	"	Dry	5	"	0.10	"	1.00	"	0.08
13	"	Dry	"	0.10	"	Dry	6	"	0.20	"	0.08	"	0.12
14	"	0.10	"	0.15	"	0.50	7	"	0.25	"	3.00	"	3.91
15	"	Dry	"	Dry	"	0.10	8	"	0.10	"	0.12	"	0.10
16	"	0.30	"	0.25	"	0.00	9	"	Dry	"	Dry	"	Dry
17-18	"	0.02	"	Dry	"	Dry	10	"	Dry	"	0.10	"	0.04
19	"	0.08	"	0.50	"	0.10							
20	"	0.05	"	0.10	"	0.75							
21	"	0.20	"	0.00	"	0.02							
22	"	0.40	"	0.00	"	0.80							
23-25	"	0.00	"	0.00	"	0.00							
Firth Bridge													
#25a	7/14	0.06	8/10	0.25	8/29	0.00	#11	7/14	3.00	8/10	0.20	8/29	0.40
26	"	2.78	"	41.83	"	15.86	12	"	0.00	"	1.04	"	0.53
26a	"	---	"	0.02	"	0.00							
27	"	0.00	"	0.04	"	0.00	12a	"	0.50	"	0.25	"	0.00
28	"	0.04	"	0.00	"	0.08	13	"	0.50	"	0.50	"	0.05
29	"	0.00	"	0.00	"	0.00	14	"	0.00	"	---	"	0.00
30	"	0.00	"	0.00	"	0.00	15	"	0.00	"	0.00	"	0.00
31	"	0.15	"	1.60	"	1.00	16	"	2.40	"	0.12	"	0.00
31a	"	0.00	"	0.08	"	0.00	17	"	0.04	"	0.06	"	0.00
32	"	1.55	"	36.81	"	10.21	18	"	0.00	"	0.08	"	0.00

Date	Amt.	Date	Amt.	Date	Amt.	Name	Date	Amt.	Date	Amt.	Date	Amt.		
						#19	7/14	0.30	8/10	0.10	8/29	0.00		
						20	"	2.18	"	0.28	"	0.00		
						21	"	0.00	"	0.00	"	0.00		
Woodville Bridge - - - - -														
		7/15	0.00	8/11	0.08	8/30	0.00	#22	---	8/11	3.65	8/30	0.15	
34-35	"	"	0.50	"	0.00	"	0.00	23	7/15	6.78	"	0.33	"	1.18
								23a)						
								23b)		---	"	0.10	---	
36-37	"	"	0.20	"	0.42	"	0.75	24	"	12.31	"	39.01	"	46.37
38-41	"	"	0.60	"	0.00	"	0.18	24a	"	0.73	"	3.33	"	3.29
42	"	"	0.00	"	0.00	"	0.00	25	"	0.50	"	0.50	"	0.50
43	"	"	0.00	"	0.00	"	0.00							
44	"	"	0.50	"	21.31	"	3.35							
45	"	"	0.08	"	0.04	"	0.04							

Date	Amt.	Date	Amt.	Date	Amt.	Name	Date	Amt.	Date	Amt.	Date	Amt.		
Lower Blackfoot Bridge - - - - -														
46-47	"	"	0.04	"	0.00	"	0.10	#26	---	---	"	0.10		
48	"	"	0.15	"	0.20	"	0.05	27	---	"	3.29	"	3.10	
49	"	"	0.60	"	0.40	"	0.00	28	"	0.20	"	0.25	"	0.25
50	"	"	0.00	"	0.05	"	0.05	29	"	0.25	"	0.05	"	0.10
51	"	"	0.00	"	15.70	"	6.09	30	"	0.10	"	0.10	"	0.05
52	"	"	0.30	"	0.15	"	0.45	31	"	0.10	---	"	0.10	
53	"	"	0.05	"	4.36	"	6.53							
53a	"	"	0.00	"	0.50	"	1.75							
54	"	"	0.20	"	10.15	"	16.55							
55	"	"	10.37	"	89.15	"	51.48							
55a	"	"	0.00	"	1.00	"	0.15							
56	"	"	0.20	"	16.63	"	1.13							
57-58	"	"	0.00	"	0.00	"	0.00							

Blackfoot Gaging Station on Snake River - - - - -													
Total Right Bank						Total Left Bank							
			44.30		237.39		167.04				31.99	61.09	61.85

If now we attempt to analyze these results in the manner followed in the 1921 report by adding this surface waste as measured inflow, we find the following:

1st test - A net average loss is increased from 411 second-feet to 487.29 second-feet or 5.53 per cent of the average total flow passing the Woodville and Blackfoot Snake River gaging stations during the three day period.

2nd test - A net average gain of 248 second-feet is changed to a net average loss of 50.48 second-feet or 0.81 per cent of the average total flow passing the Woodville and Blackfoot Snake River gaging stations during the three day period.

3rd test - A net average gain of 272 second-feet is reduced to a net average gain of 43.11 second-feet or 1.28 per cent of the average total flow passing the Woodville and Blackfoot Snake River gaging stations during the three day period.

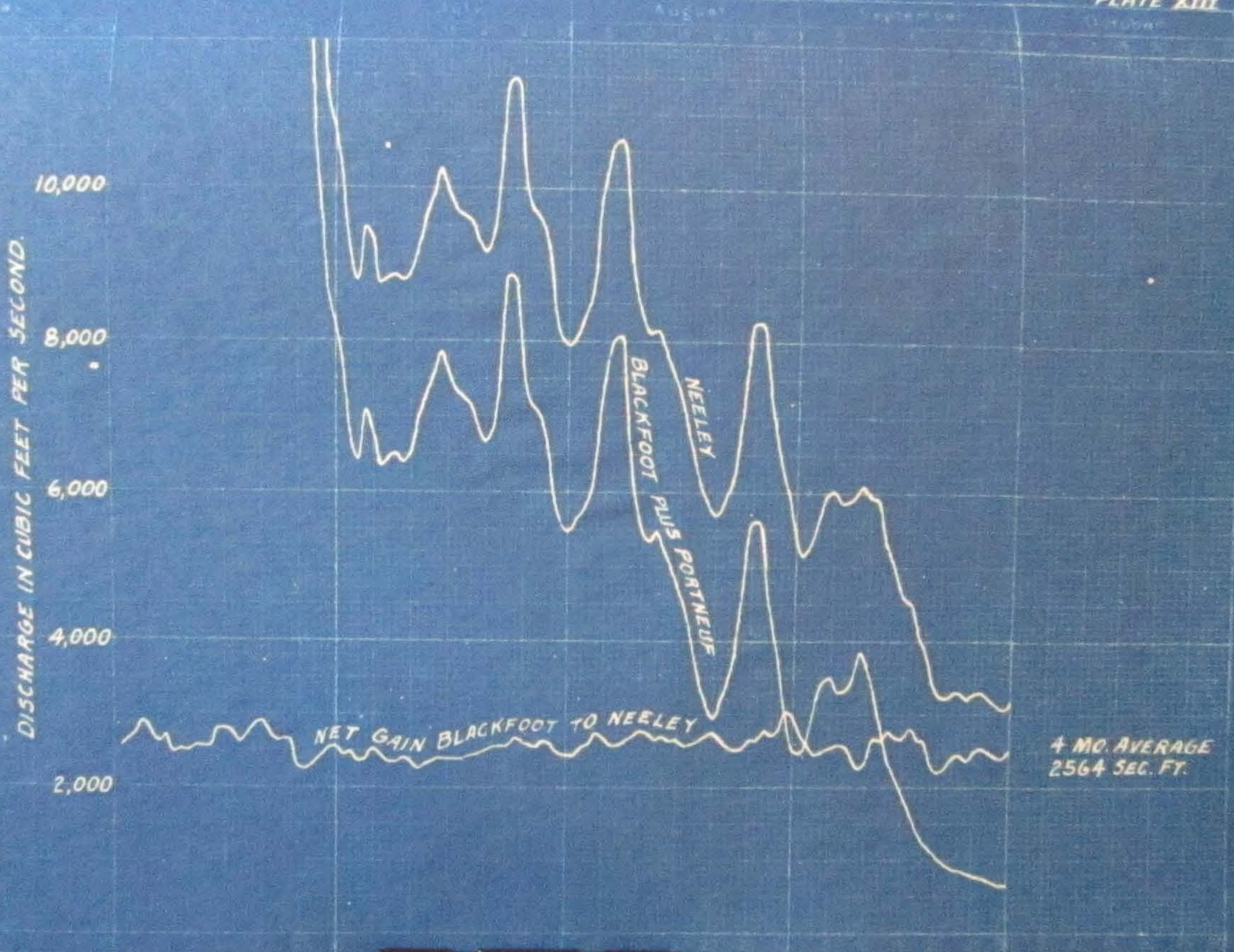
Only the first of these tests therefore seems to be at all consistent as regards percentage total net loss with the two 1921 tests, which indicated 6.0 and 6.1 per cent respectively.

Examination of the river hydrographs on Plate XII shows that each of the last two 1922 tests were made very soon after a rapid drop in river stage of considerable magnitude and probably before the increased return flow from ground water sources had been allowed sufficient time to become stabilized. Under these circumstances net losses considerably below the mean for the season might be expected. The two 1921 tests and the first one of 1922, on the other hand, were made following periods of more uniform or even lower river stage; hence might be expected to show net losses slightly greater than the season's average.

It should be realized, however, that because of the large diurnal fluctuations in the flow through wasteways, the results indicated by each set of surface waste measurements may be subject to material error. The inflow from Blackfoot River is also subject to rather wide variation, and the one or two staff gage readings secured each day probably do not indicate the correct 24 hour mean.

HYDROGRAPHS ILLUSTRATING NET GAINS BETWEEN BLACKFOOT AND NEELEY GAGING STATIONS
1922 DISTRIBUTION WATER DISTRICT NO. 36

PLATE XIII

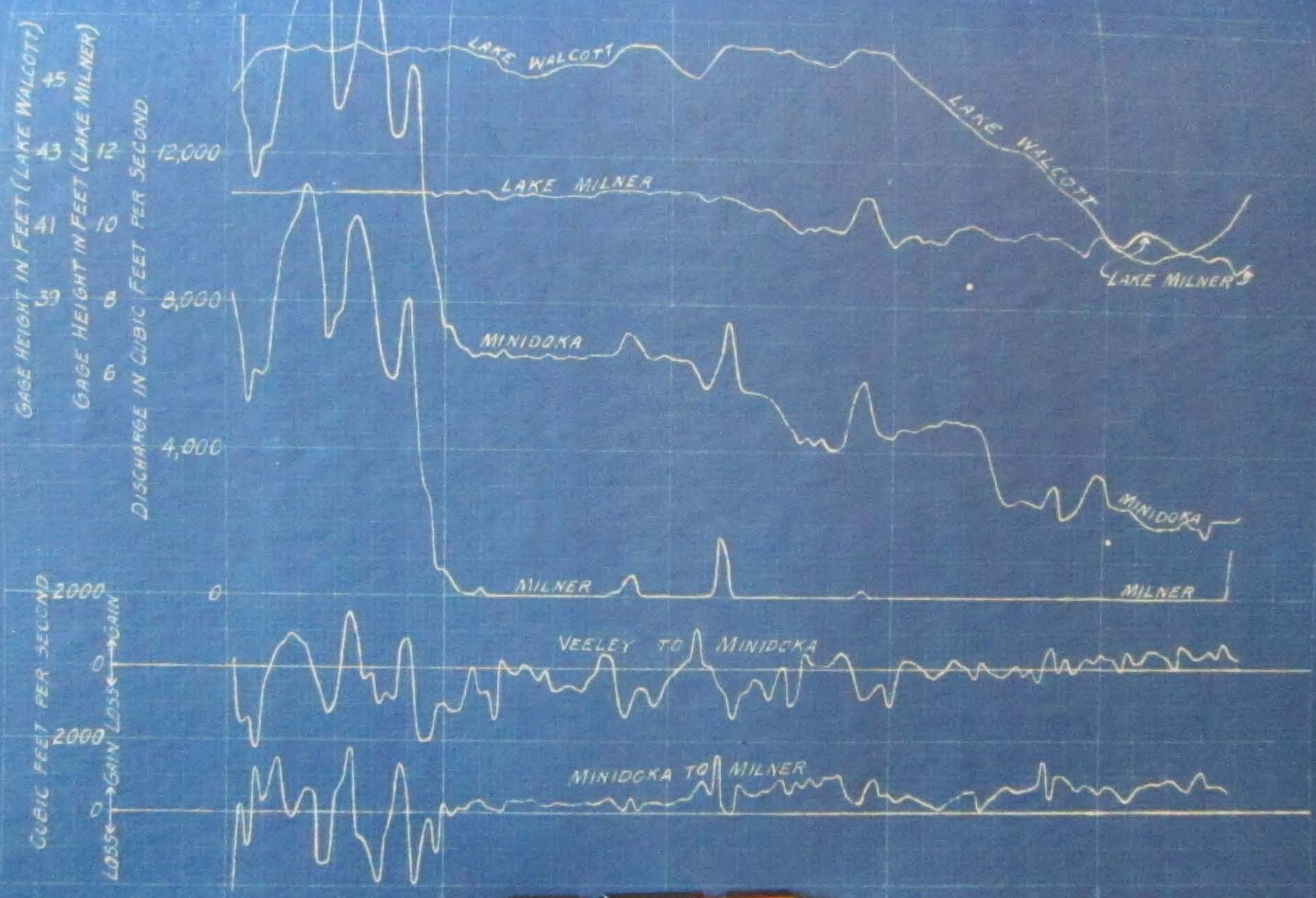


Notwithstanding these possibilities of error, the tests are of value and afford some information concerning the net losses in this section of the river. They also indicate the variable character of these losses and the way in which they may be affected by preceding river conditions. They further make the danger of determining and fixing transmission loss schedules from inadequate data very evident.

Plate XIII contains graphs similar to those shown on Plate XII but covering the section between the Blackfoot and Neeley gaging stations. Neeley dates are here used. The average net gain indicated for the entire four months' period amounts to 2,564 second-feet, in comparison with about 2,500 second-feet during the same period in 1921. It should be noted that the 1922 return flow is greater than that of 1921 throughout practically every section of the main Snake River. Presumably this is accounted for very largely, at least, by the unusually heavy and frequent summer rains.

Plate XIV 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 graphs 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 graphs are plotted to coincide with Lake Walcott or Minidoka dates.

A stage of 45.33 feet was set as the minimum to which Lake Walcott might be drawn down prior to August 5, when this limit was lowered to 45.00 feet. By the latter part of August power demands for pumping on the Minidoka Project had so decreased that authority was granted to draw materially upon the water stored in Lake Walcott in order to fill the storage demands of the Twin Falls canals during the remainder of the season. This eliminated the necessity for continued release of stored water from Jackson Lake and resulted in a larger hold-over in that reservoir than would otherwise have



been possible.

The periods of extraordinary waste past Milner Dam are clearly indicated on the Milner graph. Because of the summer rains previously referred to, the season of 1922 was a very difficult one for river operation without waste. The total avoidable or extraordinary waste past Milner Dam during the period from July 4 to October 14 inclusive (Milner dates) amounted to 4,355 second-feet, of which all except 165 second-feet on July 6, which was attributable to a high wind, was charged as stored water. The 4,190 second-feet of extra waste noted during the period of Jackson Lake storage delivery amounts to 1.38 per cent of the total storage released from the Jackson Lake Reservoir during the season. In addition, excess deliveries of water which might otherwise have been wasted, totaling 3,591 second-feet, were made during the season. These latter were more than offset, however, by under acceptance of storage ordered, amounting to 5,594 second-feet. When we consider that during the three principal rainy periods of July and August the normal flow at the Heise gaging station was increased by about 7,200, 4,300 and 6,000 second-feet respectively over that which might be expected, and that throughout these two months little advantage could be taken of Lake Walcott as a catch basin, it seems evident that the avoidable waste was not excessive.

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

For instance, we note that during September, when the elevation of the Lake Walcott water surface is decreasing, the net loss between Neeley and Minidoka likewise becomes smaller, until toward the end of the month a net gain is indicated. Throughout the period when Lake Walcott was practically full, viz. June 3 to August 31, a mean average daily loss of 359 second-feet

is noted in the transmission of water from Neeley to Minidoka. An average daily net gain of 157 second-feet is shown for the same section during the 49 days beginning September 1, or a total gain of about 15,200 acre-feet for the period. For the greater part of this latter period Lake Walcott water surface was dropping, and it was at all times considerably below the maximum elevation previously maintained. This undoubtedly affords another example of reservoir bank storage.

No account is taken in this report of the storage capacity of Lake Milner, and this, together with wind effect on the two lakes and the failure of a single time interval to apply throughout the entire season probably affords an explanation for most of the irregularities in the loss graphs.

From Neeley through to Milner the average daily net gain for the regular 122 day season amounts to 96 second-feet in comparison with 42 second-feet for the season of 1921. This increase is probably due in part to the greater drawdown of Lake Walcott and partially to the surplus resulting from the unusual midsummer rains.

NORMAL FLOW COMPARISON.

Attention has frequently been called both in this report and in those of former years to the fact that total run-off during the year is not a dependable measure of the normal flow water supply available during the irrigation season.

In the 1921 report the total normal flow at the Heise and Rexburg gaging stations was combined in graphs covering portions of each irrigation season from 1913 to 1921 inclusive. These graphs did not afford complete comparisons for the reason that variations in return flow, inflow from lower tributaries, etc. were not indicated.

The different factors which make up the normal flow are so numerous and inter-related that it is difficult to present them in any one diagram or

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

DISTRIBUTION WATER DISTRICT NO 36

PLATE NO XV

YEAR	HEISE NORMAL 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
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	595489	113110	8190	-2304	0	714485	331545	0	331545	382940	382940
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
AUGUST											
1919	98839	19894	78	3938	5123	127872	129054	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	15156	237693	40242	40242
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	133751	39758	1996	15950	0	191455	142769	0	142769	48686	48686

REFERENCE NOTES

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

table which can be easily and clearly interpreted. An attempt has been made on Plate XV, however, to condense or summarize by months the principal component parts of the normal flow water supply between the Heise and Rexburg gaging stations above the so-called Idaho Falls or central irrigated area and the Blackfoot station below this section.

The quantities listed on this plate are all summarized from the more extensive river data tables contained in the water distribution reports for the years 1919 to 1922 inclusive. Time intervals have been adhered to and all records as presented have been adjusted to correspond as nearly as practicable to the actual dates of canal diversions in the Idaho Falls district.

While the resulting table will perhaps require more explanation than is desirable it affords a comparison of many normal flow factors not readily available from any of the other tables or diagrams hitherto furnished.

The first four columns in the table are fairly well explained in the headings.

Column five to be complete should probably have added to it the quantities contained on the same lines in column six. If the storage transmission loss is correctly determined, any indicated normal flow gain from that source is really additional return flow. The change in storage transmission loss as applied to the section between the Woodville and Blackfoot gaging stations and the corresponding change in the way in which inflow from Blackfoot River was credited during 1922, as previously explained, should be taken into account in any study or comparison of this table.

Column seven headed "Total Normal Flow Supply" is the algebraic sum of the quantities listed in the five preceding columns.

The next three columns are self-explanatory, while the "Balance at the Blackfoot station" is equivalent to the "Total Normal Flow Supply" less the "Normal Flow Diverted Between Heise and Blackfoot." The last column, which is taken direct from the river data sheets, is simply a check on the calculated "Balance at Blackfoot" in the preceding column.

In any analysis of this table probably the first thing noted will be the very pronounced deficiency in supply from practically all sources which is evident for the year 1919. When one realizes that the total normal flow supply for the four summer months in 1919 amounted to only about 42 per cent of the average of the three subsequent years and that the total normal flow diversions in the central irrigated area for these same four months amounted to only about 63 per cent of the mean total diversions during the same period for the three following years, it seems remarkable that crop losses for that year were not greater than they really were.

In marked contrast to the deficiency of 1919 is the comparative uniformity, particularly throughout July, August and September, of the years 1920 to 1922 inclusive. Attention is called especially to the very slight difference in the total diversions between Heise and Blackfoot for these years. There was practically no crop loss on irrigated lands in the area under consideration during this three year period which could be attributed to insufficient water supply. During these three years adjudicated rights were cut back furthest in 1920 and were least affected in 1922. Considering the central irrigated section as a whole, however, the 102,000 acre-feet of Jackson Lake storage owned therein was in each of these three years more than sufficient to supply the normal flow deficiencies.

The pronounced decrease in net loss in June 1922 and the similar increase in return flow in July 1922, which have previously been discussed are plainly shown in this table.

Reference should be made to the valid adjudicated right tables and to the Blackfoot storage adjustment columns of previous reports before attempting any detailed study or comparison of the last two columns. Likewise account should be taken of the plan of operation in effect during each year. Since these factors are not constant from year to year no discussion of these quantities will be attempted herein.

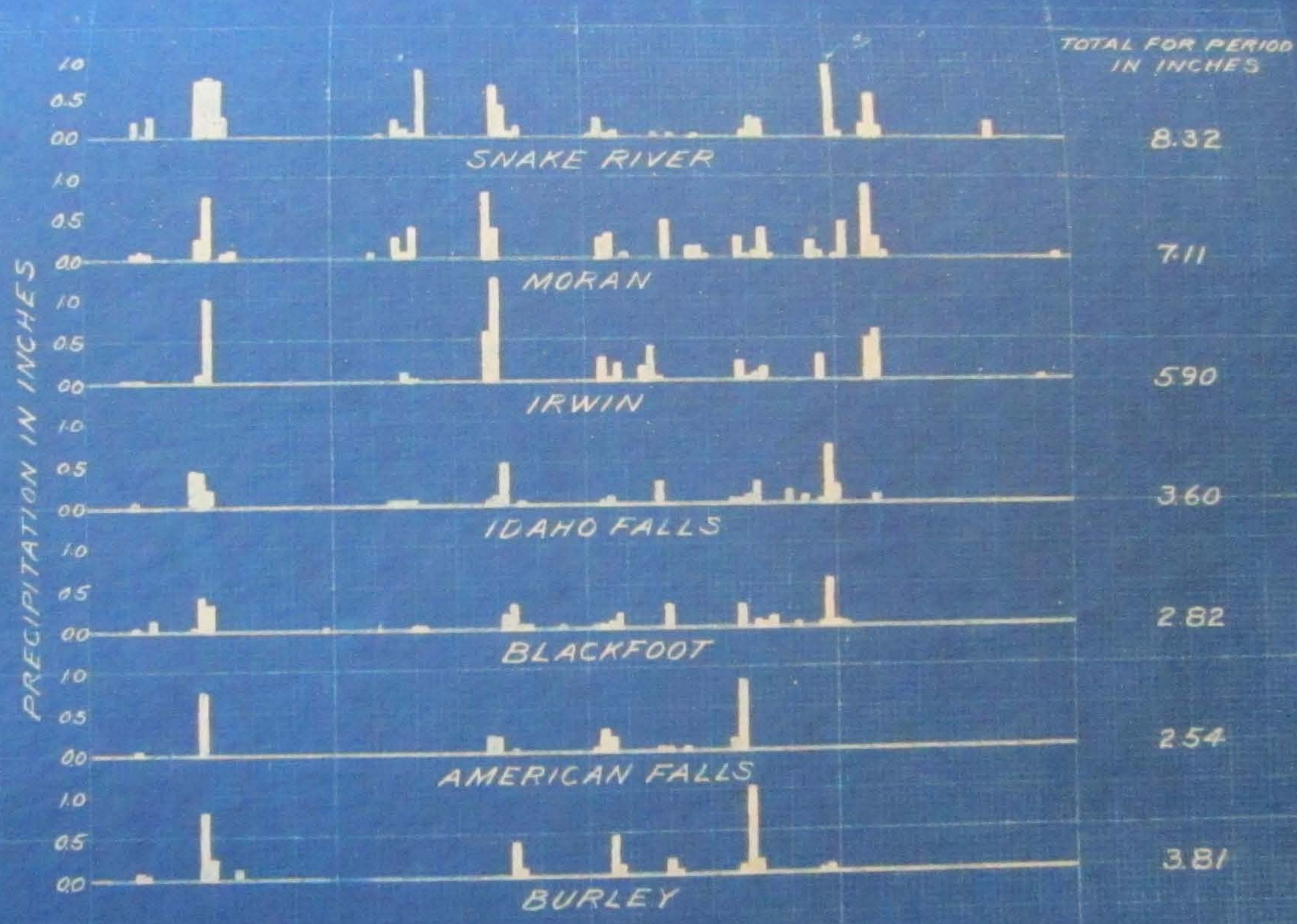
CLIMATOLOGICAL DATA.

Inspection of the monthly and annual 1922 climatological summaries prepared by the United States Weather Bureau for Wyoming and Idaho reveals many facts of interest in connection with crop production and water supply in the Upper Snake drainage area.

In general the first four and the last two months of the year were colder than usual, while temperatures during the summer and autumn were above normal. As a result, while crops developed slowly in the spring, little damage from early frost was experienced and their later summer growth was very rapid. Likewise, killing frosts in the fall were deferred until after the maturity of practically all crops.

The annual precipitation in both states was somewhat below normal, but during the latter part of July and the month of August, the peak of the irrigation season, the amounts recorded at practically all observation stations within the feeder area for Water District No. 36 were considerably in excess of the average. In fact the Idaho report for the month of August states, "It was the wettest August of record by a considerable margin." The latter part of September and the early part of October on the other hand, were much drier than usual, a condition which was favorable to harvesting operations, while at the same time not seriously detrimental from the standpoint of water supply, since most of the irrigated crops were then matured.

NOTES: Total for 4 days ending Aug 31.



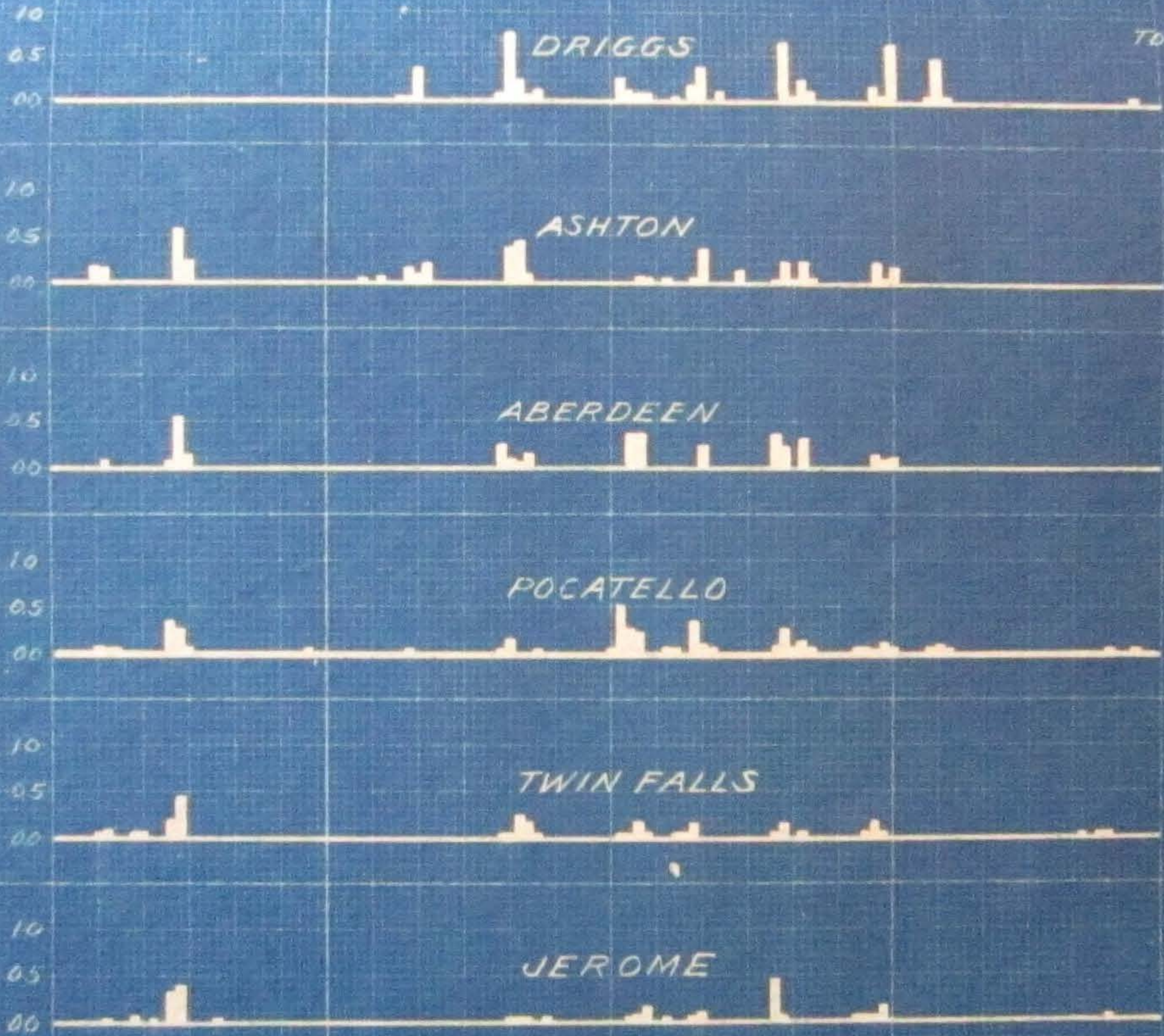
1922 DAILY PRECIPITATION DIAGRAM - SNAKE RIVER AREA
 1922 DISTRIBUTION WATER DISTRICT NO. 36

PLATE XVII

May June July August September

NOTE: NO RECORD OBTAINED AT DRIGGS STATION MONTH OF JUNE

PRECIPITATION IN INCHES



TOTAL FOR PERIOD
IN INCHES

5.03

4.01

3.47

3.26

2.15

2.00

The amount and distribution of precipitation at the principal observation points throughout the District No. 36 territory is shown graphically for the four summer months of 1922 on Plates XVI and XVII.

Summarizing these records by months for those of the stations at which data have been secured for ten or more years gives the following:

Month	Number of Stations	Number above normal	Number below normal	Mean Departure from average amount in inches
June	9	1	8	-0.11
July	11	7	4	+0.17
August	10	10	0	+1.01
September	10	0	10	-0.65

Annual calendar year totals for the nine stations having ten or more years complete records show that in two cases 1922 precipitation was above while in seven it was below normal. The mean departure from the average annual total for these nine stations indicates a deficiency for 1922 amounting to 1.97 inches or nearly 14 per cent.

DISTRIBUTION OF NORMAL FLOW
originating from HENRYS FORK and TRIBUTARIES.

C. A. McClelland again filled the position of hydrographer and deputy water master in direct charge of hydrometric work and water distribution in the Henrys Fork-Fall River-Teton area. 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 at Idaho Falls.

An office was maintained during the summer in a small dwelling house directly across the street from the Post Office at St. Anthony, and from June 16 to August 31 inclusive a clerk was employed 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:

During the early part of the season the work was largely limited to the securing of meter measurements and to minor construction and repair of equipment at the different canal and river gaging stations. A Stevens 8-day recording gage was also installed at the station on Henrys Fork at St. Anthony, Idaho.

W. F. Dawson arrived on May 15 and rendered valuable assistance thereafter.

Beginning June 1, Messrs. Dawson, Wayman and Luetjen began the daily visitation of all gaging stations within their respective divisions, thus initiating the period of daily records and reports which continued until the end of August.

Throughout the month of June stream flow was fairly well sustained and no regulation was required. About 20 per cent more water was diverted by the canals of this section during June, 1922, than for the same month in 1921.

Regulation of canal diversions began early in July, but since all irrigated lands were at that time well watered, little hardship was experienced in general until about the 17th to 20th of July. During this period the demand for water exceeded the supply available from Henrys Fork and tributaries, flow past the diversion dam of the Consolidated Farmers Canal and below the last diversion dam on Teton River was limited to unavoidable leakage, and serious shortage of supply seemed imminent. These difficulties were temporarily relieved by the heavy rains of July 20 and 21. Another period of deficiency was experienced during the last few days of July and the first few

DAILY DISCHARGE IN SECOND FEET OF CANALS DIVERTING FROM HENRY'S FORK AND TRIBUTARIES FOR JUNE 1922.

FALL RIVER CANALS

Table with 30 columns (days 1-30) and 13 rows (canals: YELLOWSTONE, HARRISFELD, MARTSVILLE, FARMERS OWN, ENTERPRISE, BELL, FALL RIVER, MCBEE, CHESTER, SILKEY, CURR, WHITE, TOTAL DIV SQUIRREL TO CHESTER). Values represent daily discharge in second feet.

HENRY'S FORK CANALS

Table with 30 columns (days 1-30) and 10 rows (canals: DEWEY, LAST CHANCE, ST ANTHONY UNION, FARMERS FRIEND, TWIN GROVES, SALEM UNION, TOTAL DIV ASHTON TO ST ANTHONY, EGIN, ST ANTHONY UNION FEEDER, INDEPENDENT, CONSOLIDATED FARMERS, TOTAL DIV ST ANTHONY TO REXBURG). Values represent daily discharge in second feet.

TETON RIVER CANALS

Table with 30 columns (days 1-30) and 14 rows (canals: SIDDOWAY, WILFORD, TETON IRRIGATION, GOOD LUCK, PIONEER, STEWART, PINCOCK BYINGTON, PINCOCK GARNER, TETON ISLAND FEEDER, ROXANA, ISLAND WARD, WOODMANSEL JOHNSON, CITY OF REXBURG, REXBURG IRRIGATION, TOTAL DIVERSIONS). Values represent daily discharge in second feet.

DAILY DISCHARGE IN SECOND FEET OF CANALS DIVERTING FROM HENRYS FORK AND TRIBUTARIES FOR JULY 1922.

FALL RIVER CANALS

Table with 32 columns (days 1-31) and 16 rows (canals: YELLOWSTONE, HARRIGFIELD, MARYSVILLE, etc.) showing daily discharge in second feet.

HENRYS FORK CANALS

Table with 32 columns (days 1-31) and 12 rows (canals: DEWEY, LAST CHANCE, STANTHONY UNION, etc.) showing daily discharge in second feet.

TETON RIVER CANALS

Table with 32 columns (days 1-31) and 16 rows (canals: SIDDOWAY, WILFORD, TETON IRRIGATION, etc.) showing daily discharge in second feet.

DAILY DISCHARGE IN SECOND FEET OF CANALS DIVERTING FROM HENRYS FORK AND TRIBUTARIES FOR AUGUST 1922.

FALL RIVER CANALS

Table with 32 columns (1-31 + TOTAL) and 13 rows (YELLOWSTONE, HARRIGFELD, MARYSVILLE, TOTAL DIK ABOVE SQUIRREL, FARMERS OWN, ENTERPRISE, BELL, FALL RIVER, M'BEE, CHESTER, SILKEY, CURR, WHITE, TOTAL DIK SQUIRREL TO CHESTER).

HENRYS FORK CANALS

Table with 32 columns (1-31 + TOTAL) and 13 rows (DEWEY, LAST CHANCE, ST ANTHONY UNION, FARMERS FRIEND, TWIN GROVES, SALEM UNION, TOTAL DIV ASHTON TO ST ANTHONY, EGIN, ST ANTHONY UNION FEEDER, INDEPENDENT, CONSOLIDATED FARMERS, TOTAL DIV ST ANTHONY TO REXBURG).

TETON RIVER CANALS

Table with 32 columns (1-31 + TOTAL) and 15 rows (SIDOWAY, WILFORD, TETON IRRIGATION, GOOD LUCK, PIONEER, STEWART, PINCOCK BYINGTON, PINCOCK GARNER, TETON ISLAND FEEDER, ROXANA, ISLAND WARD, WOODMANSEE JOHNSON, CITY OF REXBURG, REXBURG IRRIGATION, TOTAL DIVERSIONS).

DAILY DISCHARGE IN SECOND FEET OF CANALS DIVERTING FROM HENRYS FORK AND TRIBUTARIES FOR SEPTEMBER 1922.

FALL RIVER CANALS

Table with columns for days 1-30 and TOTAL. Rows include YELLOWSTONE, HARRIGFELD, MARYSVILLE, FARMERS OWN, ENTERPRISE, BELL, FALL RIVER, M'BE, CHESTER, SILKEY, CURR, WHITE, and TOTAL DIV ABOVE SQUIRREL.

HENRYS FORK CANALS

Table with columns for days 1-30 and TOTAL. Rows include DEWEY, LAST CHANCE, ST. ANTHONY UNION, FARMERS FRIEND, TWIN GROVES, SALEM UNION, EGIN, ST ANTHONY UNION FEEDER, INDEPENDENT, CONSOLIDATED FARMERS, and TOTAL DIV STANTHONY TO REXBURG.

TETON RIVER CANALS

Table with columns for days 1-30 and TOTAL. Rows include SIDDOWAY, WILFORD, TETON IRRIGATION, GOOD LUCK, PIONEER, STEWART, PINCOCK BYINGTON, PINCOCK GARNER, TETON ISLAND FEEDER, ROXANA, ISLAND WARD, WOODMANSEE JOHNSON, CITY OF REXBURG, REXBURG IRRIGATION, and TOTAL DIVERSIONS.

days of August, which, in view of the cuts ordered at the latter time, promised to be especially disastrous to this section. Again the situation was relieved, however, by timely rains and consequent reinstatement of decreed rights. Throughout the balance of the irrigation season, with the aid of temporary transfers which were arranged and other rains which occurred, it proved possible to supply all real irrigation needs from the available water supply.

The Enterprise Canal experienced several rather serious breaks during the summer and was in consequence, without water for a number of days. As a result of assistance which was given by canals having older decreed rights, it is believed that even in this case no material crop loss resulted.

The pooling system of arranging for temporary transfers was again used to some extent on Henrys Fork and Fall River, and was operated under the supervision of a committee consisting of Messrs. Harrigfield, Fisher and Lavery. A somewhat similar plan was also worked out and used for a short time in the Lower Teton area.

By the latter part of August the demand for water had become so much less that further regulation seemed to be unnecessary. The services of deputies Luetjen and Wayman and of the part-time clerk in the St. Anthony office were therefore discontinued on August 31.

During September daily records of canal diversions were not attempted but each station was visited once each week or oftener, and at least two meter measurements of discharge were secured at most of the stations. In addition bench marks were established and gages referenced thereto at practically all canal and river stations at which this work had not previously been done, a new cable anchorage and stay wire were installed at the station on Fall River near Squirrel and all river station records were continuously maintained.

While this description of the work applies particularly to Henrys Fork and Fall River, it is almost equally applicable to the Lower Teton, where W. F. Dawson acted in the combined capacity of hydrographer, deputy water master and river rider.

Early in the season arrangements were completed by the North Fork Reservoir Company for the construction of a small storage reservoir at Henrys Lake. The building of a dam at the outlet was begun and, while not entirely completed, sufficient progress was made to permit shutting off the normal flow on September 21 and beginning the storage of water for the 1923 irrigation season.

Actual deliveries to the canals diverting from Henrys Fork, Fall and Teton Rivers are shown on Plates XVIII, XIX, XX and XXI.

Plates XXII and XXIII 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 data.

ON HENRY'S FORK AND TRIBUTARIES

FALL RIVER										HENRY'S FORK							TETON RIVER						
DATE 1902	SOUTH ANCHOR	GAUGE	DATE 1902	TOTAL DIVERS	THEO GAL	EST. GAL	GAIN ABOVE DIVER	DATE 1902	TOTAL DIVERS	THEO GAL	EST. GAL	GAIN ABOVE DIVER	DATE 1902	TOTAL DIVERS	THEO GAL	EST. GAL	GAIN ABOVE DIVER						
1	1000	65	1062	792	1170	1740	470	16	2330	1931	3019	3320	301	1116	2204	2070	1053	463					
2	1030	83	2113	746	1247	1780	533	17	4330	1327	3023	3170	147	1134	2034	2030	1004	1026					
3	2200	104	2304	952	1402	1900	498	18	4430	1430	377	3053	3170	117	1155	2015	2070	1033	1037				
4	2490	125	2615	920	1695	2140	445	19	470	1327	3333	3390	67	1176	2214	1260	1089	1171					
5	2530	129	2654	1017	1945	2370	423	20	470	1327	3540	3640	100	1068	2592	1260	1089	1171					
6	3000	122	3322	964	2359	2770	412	21	2590	5360	1394	3964	4170	204	1185	2985	1260	1089	1171				
7	3280	129	3409	927	2425	2880	453	22	2490	5470	1249	4202	4350	148	1173	3177	2770	1169	1601				
8	3160	141	3301	927	2314	2810	496	23	2570	5380	1271	4109	4300	191	988	3312	2770	1204	1656				
9	3120	141	3261	922	2273	2770	497	24	2510	5280	1353	3927	4060	133	1159	2901	2840	1209	1631				
10	2870	151	3071	964	2057	2500	443	25	2380	4920	1320	3560	3660	100	1087	2573	2680	1249	1431				
11	2540	151	2691	901	1790	2150	430	26	2140	4360	1344	3014	3120	106	1122	1998	2130	1230	895				
12	2525	148	2673	865	1708	2150	442	27	2180	4430	1386	2944	3050	106	1129	1921	2130	1230	895				
13	2463	151	2916	891	1925	2270	343	28	2160	4430	1407	3023	3170	147	1054	2116	2040	1302	738				
14	3010	48	3058	550	2108	2620	512	29	2180	4800	1423	3537	3860	203	1068	2792	2000	1249	751				
15	340	44	3194	617	2569	2970	451	30	2200	5170	1025	4145	4380	235	932	3442	2370	1244	1086				
16	2910	19	2929	379	2350	2640	290	31	214	4780	1000	3780	3960	180	797	3163	2470	1076	1394				
17	2970	22	2995	616	2379	2670	291	32	2040	4710	950	3720	3990	270	811	3179	2160	1056	1104				
18	3320	54	3374	645	2729	2860	131	33	1940	4800	1054	3746	4090	344	868	3222	210	1063	1047				
19	3540	60	3620	723	2897	2980	83	34	2060	5040	1081	3959	4270	311	920	3350	2160	1174	986				
20	3630	38	3738	943	2795	2340	145	35	1880	4820	1203	3617	3880	263	952	2928	2280	1212	1068				
21	3890	79	3969	1032	2937	2960	23	36	1880	4840	1201	3639	3940	301	974	2966	2230	1206	1024				
22	3610	34	3746	1115	2631	2920	289	37	1820	4740	1162	3578	3860	282	959	2901	2160	1229	931				
23	3085	73	3263	1037	2726	2410	184	38	1900	4310	1095	3215	3170	-45	913	2257	2250	1185	865				
24	2380	184	2964	1017	1949	1970	81	39	1740	3710	1064	2646	2450	-196	891	1359	1840	1151	689				
25	2385	219	2604	1084	1520	1750	230	40	1780	3530	1113	2417	2450	33	929	1521	1620	1067	533				
26	2280	213	2493	1157	1336	1630	294	41	1700	3330	1137	2193	2170	-23	897	1273	1470	1054	376				
27	2250	227	2477	1087	1390	1510	120	42	1670	3180	1048	2132	2070	-62	836	1234	1430	1054	376				
28	1920	231	2151	969	1182	1330	148	43	1400	2730	998	1732	1800	68	627	1173	1320	1020	300				
29	1635	233	1868	962	906	1260	354	44	1700	2960	1011	1949	1930	-19	798	1132	1230	1049	181				
30	1475	247	1722	1021	701	1120	419	45	1520	2710	996	1714	1680	-34	758	922	1180	1006	174				
Jul 1	1385	245	1630	1000	630	834	204	46	1510	2344	981	1363	1470	107	722	749	1050	907	143				
2	1295	265	1550	931	619	762	143	47	1510	2272	956	1316	1420	104	708	712	1020	871	149				
3	1315	250	1565	935	630	684	54	48	1530	2214	950	1264	1360	96	717	643	1010	892	112				
4	1370	253	1623	692	931	635	-296	49	1550	2185	918	1267	1310	43	744	546	1010	892	112				
5	1195	251	1446	725	721	628	-93	50	1510	2138	583	1555	1580	25	881	639	987	871	116				
6	920	269	1189	702	487	523	36	51	1510	2033	576	1457	1580	123	847	733	976	856	120				
7	772	259	1031	710	321	416	95	52	1500	1916	541	1375	1370	38	825	545	923	840	83				
8	746	266	1012	557	455	286	769	53	1480	1766	848	918	1020	102	669	351	828	772	116				
9	742	225	867	611	256	416	160	54	1420	1896	862	1034	1130	96	713	417	859	775	34				
10	735	66	861	794	67	385	312	55	1500	1885	926	959	1100	141	699	401	871	812	59				
11	763	255	1029	711	318	325	67	56	1510	1825	896	929	1100	101	719	381	900	836	64				
12	681	245	876	681	195	296	101	57	1480	1776	878	898	1020	122	735	285	882	835	47				
13	536	247	833	553	80	246	166	58	1300	1546	850	696	856	160	718	138	859	822	37				
14	653	260	918	555	363	265	-98	59	1340	1605	941	664	224	160	813	11	823	778	70				
15	738	72	810	517	293	361	68	60	1360	1721	762	759	880	121	830	50	848	749	92				
16	726	71	797	531	246	345	99	61	1380	1725	1098	627	824	197	772	50	808	733	73				
17	714	71	785	559	226	338	107	62	1400	1733	1085	643	740	92	751	-11	772	731	48				
18	640	71	711	612	99	306	207	63	1380	1696	1089	597	730	133	802	78	768	733	33				
19	598	132	730	676	54	237	183	64	1380	1617	1115	502	740	238	773	-33	768	718	50				
20	692	183	885	682	203	275	72	65	1500	1775	821	954	985	31	604	381	779	693	86				
21	699	168	867	645	222	333	111	66	1530	1863	772	1091	1100	9	509	591	940	845	95				
22	642	162	804	730	74	217	140	67	1530	1744	748	996	1060	64	661	399	924	910	54				
23	633	163	800	692	108	199	30	68	1610	1808	692	1116	1140	24	662	478	917	847	20				
24	593	147	745	673	72	181	109	69	1570	1751	675	1076	1100	24	679	421	865	837	28				
25	572	149	721	639	82	144	62	70	1530	1674	689	985	1080	95	682	398	845	775	67				
26	558	147	705	690	15	134	119	71	1510	1644	728	916	1020	104	801	219	808	712	96				
27	543	147	690	688	2	109	107	72	1500	1609	855	754	868	114	791	77	768	695	73				
28	532	145	677	735	-58	76	134	73	1480	1556	984	572	730	158	684	46	768	666	102				
29	516	143	661	667	-6	115	121	74	1460	1575	1033	542	683	141	681	3	745	635	107				
30	506	138	691	609	82	115	33	75	1460	1573	971	604	702	98	705	-3	718	609	107				
31	502	138	660	667	-7	93	100	76	1420	1513	1023	490	664	174	625	39	701	615	86				

ON HENRY'S FORK AND TRIBUTARIES

FALL RIVER										HENRY'S FORK							TETON RIVER						
DATE 1922	SQUIP REL	CHANCE ABOVE STA	SOUTH CANALS ABOVE	DATE 1922	TOTAL DIVERS	THEO BAL CHESTER	GAIN ABOVE CHESTER	ASHTON	ASHTON FALL R CHESTER	DIVERS ASHTON STANT	THEO BAL ANTH	ST ANTH	GAIN ASHTON STANT	DIVERS BELOW STANT	THEO BAL	EAST BAL BELOW DIVERS	ST ANTH	TOTAL DIVERS	THEO BAL	EAST BAL BELOW DIVERS	HENRY'S FORK TETON STANT	HENRY'S FORK RELIC STANT	GAIN BELOW STANT
AUG 1	586	157	743	AUG 2	422	288	103	1480	1583	955	628	683	55	697	-7	12	779	686	45		26	502	466
2	674	0	674	3	423	261	301	1480	1781	862	919	891	-28	681	210		825	733	92		302	654	352
3	670	0	670	4	420	250	361	1500	1861	744	1117	1100	-17	638	462		847	766	76		532	928	390
4	632	0	632	5	572	60	286	1510	1796	748	1048	1080	32	639	441		853	755	98		539	1070	531
5	586	66	652	6	572	80	114	1480	1674	728	946	1010	64	626	384		829	711	97		481	1110	629
6	587	66	630	7	594	36	151	1460	1611	751	860	948	88	648	306		757	616	141		441	1000	559
7	540	86	626	8	615	11	115	1500	1615	627	988	948	-40	604	344		734	662	72		416	940	324
8	568	119	687	9	656	31	93	1480	1573	597	976	1010	34	637	373		718	653	65		438	974	536
9	601	162	763	10	699	64	67	1480	1547	596	951	1010	59	691	319		745	645	100		419	956	537
10	552	175	727	11	659	68	98	1510	1608	574	1034	1050	16	660	390		813	697	116		506	1000	494
11	459	145	644	12	643	1	69	1480	1549	634	915	972	57	618	354		762	661	101		455	986	530
12	479	142	621	13	626	-3	60	1440	1500	585	915	937	22	647	290		729	647	85		376	928	553
13	472	128	600	14	642	-42	58	1400	1458	660	798	880	82	582	295		718	636	82		380	890	510
14	476	141	617	15	616	1	56	1400	1456	659	797	891	94	659	232		696	629	67		299	868	569
15	476	121	557	16	618	-21	58	1390	1438	676	762	880	118	651	229		674	601	73		302	852	570
16	472	120	592	17	616	-24	58	1360	1418	684	734	845	111	646	199		657	603	54		263	821	568
17	482	120	602	18	603	-1	58	1380	1438	633	805	968	63	647	221		646	574	72		293	842	544
18	510	103	613	19	637	-24	65	1420	1485	657	828	891	63	642	249		663	617	46		295	917	622
19	530	104	634	20	633	1	80	1440	1520	656	864	902	38	597	305		701	595	106		411	968	557
20	635	105	740	21	636	104	96	1440	1536	662	874	937	63	553	384		745	608	137		521	1060	539
21	678	105	783	22	632	151	134	1440	1574	464	1110	1070	-40	538	532		825	675	150		632	1286	598
22	586	73	659	23	574	85	177	1400	1577	468	1109	1190	81	542	648		790	646	144		792	1490	698
23	543	71	611	24	538	73	198	1400	1598	379	1219	1240	21	476	764		723	497	226		990	1550	560
24	522	68	590	25	526	64	185	1420	1605	383	1222	1220	-2	472	748		690	475	215		963	1570	607
25	512	65	577	26	531	46	185	1400	1585	377	1208	1220	12	456	764		668	463	205		969	1530	561
26	502	63	567	27	518	49	181	1400	1581	381	1200	1240	40	407	833		668	466	202		1035	1540	505
27	496	63	559	28	517	42	181	1400	1581	374	1207	1240	33	402	838		663	458	205		1043	1540	497
28	568	63	631	29	518	113	228	1380	1608	380	1228	1280	52	394	886		646	470	176		1062	1540	478
29	624	60	684	30	419	265	345	1400	1745	373	1372	1390	18	402	988		668	486	182		1170	1610	440
30	601	61	662	31	268	394	494	1400	1894	393	1501	1500	-1	403	1097		663	473	190		1287	1750	463
SEPT 1	580	60	640	SEPT 1	269	371	530	1400	1930	384	1546	1530	-16	398	1132		745	484	261		1993	1810	417
2	544	60	604	2	267	337	494	1360	1854	372	1482	1480	-2	392	1088		751	470	281		1369	1810	441
3	516	57	573	3	300	273	468	1340	1808	368	1440	1450	10	387	1063		679	454	225		1288	1760	472
4	509	57	566	4	330	236	435	1340	1775	362	1413	1430	17	384	1046		663	439	224		1270	1700	430
5	522	55	577	5	326	251	428	1380	1909	357	1451	1450	-1	384	1066		668	465	203		1269	1650	391
6	530	53	583	6	323	260	448	1380	1828	353	1475	1450	-25	384	1066		734	486	248		1314	1660	346
7	516	51	567	7	319	248	427	1360	1782	347	1435	1390	-45	380	1010		718	503	215		1225	1650	425
8	502	49	551	8	318	233	416	1360	1776	347	1429	1390	-39	377	1013		641	510	131		1144	1640	496
9	486	47	533	9	314	219	404	1360	1764	347	1417	1360	-57	373	987		630	518	112		1099	1610	511
10	476	46	521	10	311	210	385	1360	1745	344	1401	1340	-61	371	969		625	527	98		1067	1580	513
11	476	46	521	11	306	215	325	1380	1765	342	1423	1340	-83	368	972		609	513	96		1068	1540	472
12	476	44	520	12	306	214	379	1380	1759	339	1420	1340	-80	363	977		604	506	98		1075	1510	435
13	472	43	515	13	306	209	361	1380	1741	336	1405	1340	-65	363	977		598	496	102		1079	1470	391
14	469	43	512	14	309	203	345	1380	1725	333	1392	1310	-82	361	949		598	485	113		1062	1430	368
15	469	46	515	15	311	204	345	1340	1685	330	1355	1310	-45	359	951		598	481	117		1068	1390	322
16	463	47	510	16	314	196	333	1320	1653	329	1324	1310	-14	366	944		583	473	110		1054	1380	326
17	457	50	507	17	328	179	317	1300	1617	328	1289	1300	11	374	926		562	464	98		1024	1350	326
18	457	51	508	18	342	166	296	1300	1596	343	1253	1260	7	343	917		562	458	104		1021	1270	249
19	457	52	509	19	344	165	286	1290	1576	352	1218	1260	42	318	942		572	451	121		1063	1240	177
20	457	53	512	20	345	167	286	1290	1576	373	1203	1260	57	334	926		572	457	115		1041	1200	159
21	454	56	510	21	358	152	280	1290	1570	387	1183	1250	67	329	921		578	464	114		1035	1220	185
22	450	59	509	22	368	141	255	1290	1545	401	1144	1210	66	327	883		583	472	111		994	1190	196
23	444	60	504	23	368	136	232	1230	1462	416	1046	1110	64	326	784		552	473	79		863	1100	237
24	438	60	498	24	373	125	223	1230	1455	429	1024	1050	26	395	655		552	465	87		742	1010	268
25	438	62	500	25	372	128	219	1230	1449	420	1029	1060	31	462	598		552	460	92		690	945	255
26	441	62	510	26	373	137	219			411		1080		467	613		552	453	99		712	940	

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

Gaging Station	Period used for comparable daily means
Henrys Fork near Ashton	Day ending at 4 p.m.
Fall River near Squirrel	Day ending at 10 a.m.*
Fall River near Chester	Day ending at 5 p.m.
Henrys Fork at St. Anthony	Day ending at 8 p.m.
Teton River near St. Anthony	Day ending at 6 p.m.
Henrys Fork near Rexburg	Day ending at 8 a.m. 1st 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 VII and VIII. The dates indicated in the tables are for the nearest midnight to midnight or calendar days.

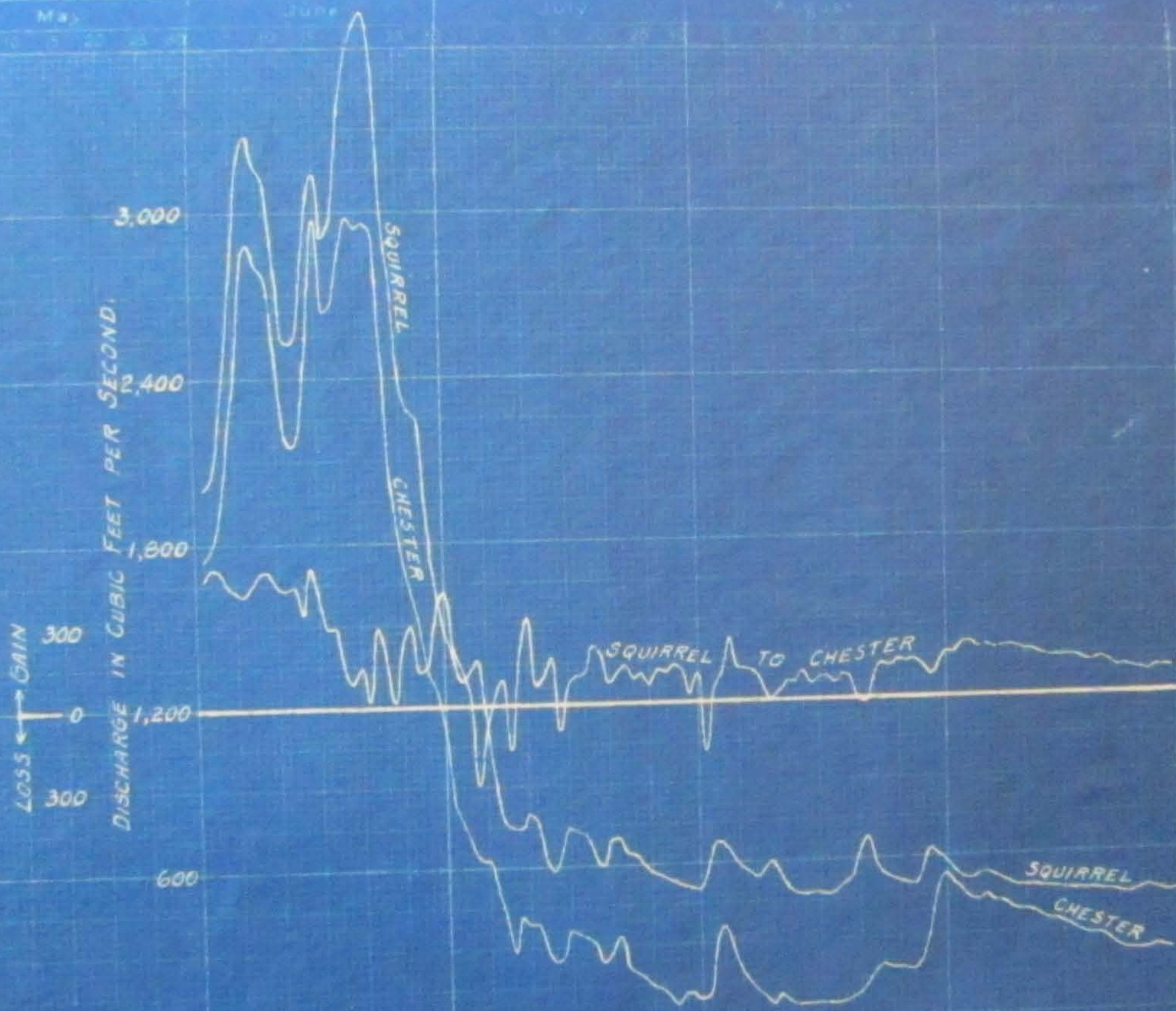
No satisfactory sites have been found for gaging stations located immediately below the lowest canals diverting from Henrys Fork and Teton River, and on this account data have been included in the column headed "Estimated Balance Below Diversions" only for days when these quantities were determined either by actual measurements or by estimates.

The period during which the quantity of water passing the lowest canal on Henrys Fork was limited to leakage through the diversion dam was of shorter duration than in either 1920 or 1921 and this condition probably pertained also on Teton River, although less direct information is available concerning the latter. Had it not been for the timely summer rains, however, the shortage in water supply available for irrigation in this entire area would doubtless have been more pronounced than in either of the two preceding years.

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

NET LOSSES AND GAINS BETWEEN THE SQUIRREL AND CHESTER GAGING STATIONS - FALL RIVER
1922 DISTRIBUTION WATER DISTRICT NO 36

PLATE XXIV



The large gains noted during the first half of June undoubtedly can be attributed to unmeasured inflow from Squirrel Creek and other small tributaries which later in the season may not reach the main river. Likewise some of the increased gains in August and September may be partially due to a pick-up in these minor sources of supply.

Some of the irregularities in the net gain graph are rather difficult to explain, but it seems probable that many of them are due to the fact that the Squirrel station is not equipped with a recording gage and hence does not afford exact mean daily discharge records.

On the whole the characteristics of these curves do not differ materially from those of former years but the average net gain for the four months is slightly less than for the same period in 1921, a comparison which is the reverse of that noted for most other river sections under observation.

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

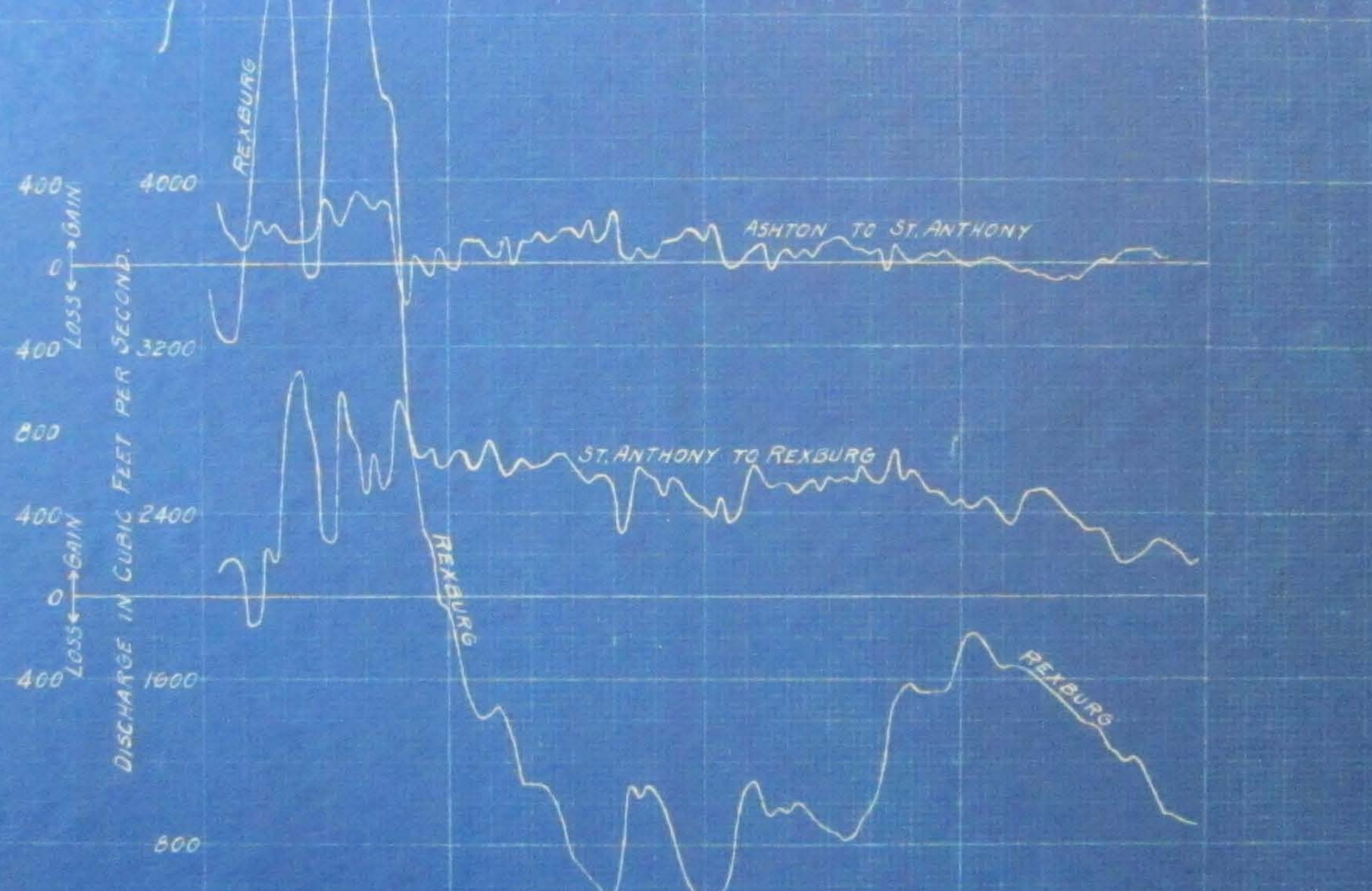
The surplus water resulting from the rains of July 20 and 21 probably accounts for the increased discharge shown on the Rexburg hydrograph for the period July 21-29 inclusive, although a study of the data contained on Plate XXII shows that decreased diversions rather than increased primary supply contributed most to this result.

DISTRIBUTION IN SWAN VALLEY.

Swan Valley water distribution was handled in the same manner as during 1920 and 1921. 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 all instructions re-

NET LOSSES AND GAINS BETWEEN THE ASHTON AND REXBURG GAGING STATIONS - HENRY'S FORK
1922 DISTRIBUTION WATER DISTRICT NO. 36

May August September October



400

0

400

800

400

0

400

800

DISCHARGE IN CUBIC FEET PER SECOND.

4000

3200

2400

1600

800

0

400

800

1600

2400

3200

4000

Loss ← Gain

Loss ← Gain

Loss ← Gain

Loss ← Gain

Loss ← Gain

Loss ← Gain

Loss ← Gain

Loss ← Gain

Loss ← Gain

Loss ← Gain

Loss ← Gain

Loss ← Gain

Loss ← Gain

Loss ← Gain

Loss ← Gain

REXBURG

REXBURG

ASHTON TO ST. ANTHONY

ST. ANTHONY TO REXBURG

REXBURG

garding cuts and reinstatements were forwarded to this deputy, who was directed to regulate diversions in accordance with these orders.

DISTRIBUTION ON SAND CREEK, FREMONT COUNTY.

Water distribution on Sand Creek in Fremont County in 1922 was handled strictly as a local problem. No request for the appointment of a deputy water master was made and since this stream is really not a surface tributary to Henrys Fork during the ordinary regulation period, it was entirely neglected in the District No. 36 distribution.

NEW CONSTRUCTION AND REPAIRS.

A Stevens 8-day recording gage was installed in a removable wooden float well and shelter at the gaging station on Henrys Fork at St. Anthony, Idaho.

At the Heise station on Snake River a new combination wood and concrete float well and recording gage shelter was constructed at a slightly different location from the old structure. It is proposed if the new site proves satisfactory to complete the entire installation in concrete at some future time.

New cable anchorages were installed at the stations on Fall River near Squirrel and Snake River at Neeley; the latter, by the U. S. Reclamation Service.

Repairs were also made at the Woodville station on Snake River to the extent of constructing new retaining walls for the inlet trench to the float well.

EVAPORATION.

One of the factors to be considered in connection with any studies which are made of the relative stored and normal flow rights at Jackson Lake Reservoir and one which also enters into all river transmission losses is that of evaporation.

During the years 1921 and 1922 the U. S. Geological Survey has secured records of evaporation at Mud Lake near Hamer, Idaho, both from land and water pans, and during 1922 the U. S. Reclamation Service kept similar records at the outlet of Jackson Lake in Wyoming.

These records have recently been made available and are summarized by months for the summer of 1922 on Plate XXVI. On this plate data for three other Idaho stations which are maintained by the U. S. Weather Bureau have also been included.

No attempt has been made in these tabulations 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 7 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.

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 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.

EVAPORATION
SUMMARY BY MONTHS FOR STATIONS
MAINTAINED IN SNAKE RIVER DRAINAGE
IRRIGATION SEASON OF 1922

1922 DISTRIBUTION WATER DISTRICT NO 36

PLATE NO XXVI

NAME OF STATION AND KIND OF EVAPORATION PAN	ALTITUDE FEET	MEAN TEMPERATURE DEGREES FAHR	TOTAL PRECIPITATION INCHES	TOTAL EVAPORATION INCHES	MEAN DAILY EVAPORATION INCHES	RECORD FURNISHED BY
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JUNE

ARROWROCK LAND PAN	3230	69.4	0.68	8.628	0.288	USWB
DEER FLAT " "	2510	68.1	0.98	7.183	0.239	USWB
JEROME " "	3893	67.0	0.87	6.650	0.222	USWB
JACKSON LAKE " "	6770	53.5	1.29	5.952	0.198	USRS
MUD LAKE " "	4790	63.6	0.62	10.474	0.349	USGS
MUD LAKE LAKE PAN	4780	63.6	0.62	6.793	0.226	USGS

JULY

ARROWROCK LAND PAN	3230	74.6	0.20	10.850	0.350	USWB
DEER FLAT " "	2510	73.4	0.03	8.874	0.286	USWB
JEROME " "	3893	70.8	0.05	6.509	0.210	USWB
JACKSON LAKE " "	6770	56.0	1.86	5.664	0.183	USRS
MUD LAKE " "	4790	67.0	—	10.406	0.336	USGS
MUD LAKE LAKE PAN	4780	67.0	—	9.161	0.296	USGS

AUGUST

ARROWROCK LAND PAN	3230	74.8	1.29	8.641	0.279	USWB
DEER FLAT " "	2510	72.4	0.20	—	—	USWB
JEROME " "	3893	71.8	1.07	3.774	0.122	USWB
JACKSON LAKE " "	6770	59.7	2.28	4.476	0.144	USRS
MUD LAKE " "	4790	—	2.02	8.987	0.290	USGS
MUD LAKE LAKE PAN	4780	—	2.02	6.400	0.206	USGS

SEPTEMBER

ARROWROCK LAND PAN	3230	65.4	0.00	6.663	0.222	USWB
DEER FLAT " "	2510	62.4	0.00	4.788	0.160	USWB
JEROME " "	3893	61.6	0.01	2.648	0.088	USWB
JACKSON LAKE " "	6770	50.4	1.68	3.444	0.115	USRS
MUD LAKE " "	4790	—	0.00	7.597	0.253	USGS
MUD LAKE LAKE PAN	4780	—	0.00	6.008	0.200	USGS

REFERENCE NOTES

ALTITUDE OF PANS AT JACKSON LAKE AND MUD LAKE APPROX
OUTSIDE OF JACKSON LAKE PAN BANKED WITH EARTH

A lake pan was also installed but no satisfactory records were obtained, due to spray from breaking waves which could not be entirely eliminated.

Mud Lake.

Used a galvanized iron circular pan 6 feet in diameter and 30 inches deep. Painted black on the outside. Set on one inch boards laid flat on ground surface. Water surface maintained within about three inches of top of pan. In all other respects this station is equipped with standard Class "A" U. S. Weather Bureau instruments, and daily measurements were secured to one thousandth of an inch.

A floating pan of galvanized iron, 4 feet in diameter and 3 feet deep, mounted on a raft of 2 by 12 inch planks was also installed in a somewhat protected arm of Mud Lake about five miles northeast of the location of the land pan. With the aid of a stilling-well measurements were made daily to the nearest sixteenth of an inch.

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.

EXPENDITURES.

A complete statement of expenditures covering the year ending March 31, 1923, follows. This statement includes all items which appeared in the annual water master's bill for the season of 1922, 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 winter expenses charged against the normal flow and stored water users have been prorated on a basis of 59.6 per cent to the former and 40.4 per cent to the latter, in accordance with the relative expense incurred in the two classes of distribution during the 1922 irrigation season. The cost of hydrometric work during the month of May is not, however, included in the totals from which the relative winter percentages are determined.

EXPENDITURES FOR WATER DISTRIBUTION AND HYDROMETRIC WORK

April 1, 1922 to March 31, 1923.

			Irrigation Season	Winter Season
<u>Water Master</u>				
John Empey,	Salary June 1-Sept.30,	122 days at \$7	854.00	
	Auto hire do	122 days at \$2	244.00	

Deputy Water Masters

Ira Moore,	Salary June 1-Aug.31,	92 days at \$4	368.00	
	Auto hire do	do 3.50	322.00	
Ernest F.Hale,	Salary do	do 4	368.00	
	Auto hire do	do 2.75	253.00	
Wm. Sauer,	Salary do	do 4	368.00	
	Auto hire do	do 3	276.00	
R. S. Wilson,	Salary do	do 4	368.00	
	Auto hire June 1-July 15,	45 days at 3.62	162.90	
	do July 16-Sept.30,	47 days at 3.12	146.64	
Ernest Luetjen,	Salary June 1-Aug.31,	3 months at 50.00	150.00	
	Auto hire do	do 50.00	150.00	
W. R. Wayman,	Salary do	92 days at 4	368.00	
	Auto hire do	do 3.25	299.00	
W. N. McConnel,	Salary June 1-Sept.30,	4 months at 37.50	150.00	

Special Deputy

G. Clyde Baldwin,	Salary May 1-Sept.30,	5 mo. at \$400	2000.00	
	Expenses do		28.86	
	Auto hire do		138.30	
	Salary April 1-30; Oct.1-March 31,	7 mo. at \$400		2800.00
	Expenses April 1-30; Oct.1-March 31			102.29
	Auto hire do			35.55

Hydrographers

T. H. Newell,	Salary May 1-Sept.30,	5 mo. at \$250	1250.00	
	Expenses do		111.42	
	Auto hire do		877.50	
	Salary April 1-30; Oct.1-March 31,	7 mo. at \$250		1750.00
	Expenses April 1-30; Oct.1-March 31			14.45
	Auto hire do			99.95

C. A. McClelland,	Salary May 1-Sept. 30, 5 mo. at \$175	875.00	
	Expenses do	25.20	
	Auto hire do	674.10	
	Salary April 1-30, 1 mo. at \$190		190.00
	Oct. 1-Mar. 31, 6 mo. at 175		1050.00
	Expenses April 1-30; Oct. 1-Mar. 31		39.50
	Auto hire do		90.60
F. A. Backman,	Salary May 15-Sept. 30,		
	4 16/30 mo. at 112.50	510.00	
	Expenses May 15-Sept. 30	71.70	
	Auto hire do	958.80	
W. F. Dawson,	Salary May 15-Sept. 30,		
	4 16/30 mo. at 112.50	510.00	
	Expenses May 16-Sept. 30	72.37	
	Auto hire do	820.50	
D. G. Martin,	Salary May 15, 1/30 mo. at \$250	8.33	
	Auto hire May 15	3.75	

Stenographers

Mrs. Edith M. Cure,	Salary May 1-31; June 6-12, 16-21, 25-30;		
	July 1-Aug. 31; Sept. 12-30,		
	4 8/30 mo. at \$120	512.00	
	June 1-5, 13-15, 22-24; Sept. 1-11;		
	22/30 mo. at \$130	95.33	
	April 1-30, 1 mo. at 130		130.00
	Oct. 1-6; Nov. 17-19, 29-30; Dec.		
	12-31; Jan. 1-15, 19-31; Feb. 1-5,		
	8-28; Mar. 1, 4, 8, 11, 13, 17-31,		
	3 14/30 mo. at \$120		416.00
	Oct. 7-31; Nov. 1-16, 20-28; Dec.		
	1-11; Jan. 16-18; Feb. 6-7; Mar.		
	2-3, 5-7, 9-10, 12, 14-16,		
	2 16/30 mo. at \$130		329.33
Mrs. Mae McClelland,	Salary June 16-Aug. 31, 2 1/2 mo. at 37.50	93.75	
DeSta L. Sims,	Salary Aug. 14-19, 21-26, 28-31; Sept.		
	1-10, 26 days at \$2.00	52.00	

Observers

H. R. Wallis,	Salary April 1-30, 4 2/7 weeks at \$2		8.57
	May 1-31, 4 3/7 " " 2	8.86	
Harold Fuqua,	Salary May 1-31; Sept. 1-30, 2 mo. at \$5	10.00	
	June 1-Aug. 31, 3 mo. at 12	36.00	
O. L. Kofoed,	Salary May 12-June 30,		
	1 19/30 mo. at \$7.50	12.25	
	July 1-Aug. 31, 62 days 1.00	62.00	
	Sept. 1-30, 1 mo. at 6.50	6.50	
Cyrus Olmstead,	Salary June 10-30, 21/30 mo. at 6.00	4.20	
E. L. Jennings,	Salary July 5-Aug. 31, 58 days 1.00	58.00	

		Irrigation Season	Winter Season
Ira Moore,	Salary Sept. 1-30, 1 mo. at 7.50	7.50	
	Sept. 9-30, 4 trips at 2.00	8.00	
	Oct. 1-Nov. 30, 8 " at 2.00		16.00
Miss Lena Byington,	Salary May 1-31, 1 mo. at 7.50	7.50	
	April 17-30, 14/30 mo. at 7.50		3.50
J. A. Clough,	Salary May 1-31, 1 mo. at 10.00	10.00	
	June 1-Sept. 30, 122 days at \$1	122.00	
	April 1-30; Oct. 1-March 31, 7 mo. at 10.00		70.00
John Kukas,	Salary May 12-31; Sept. 2-30, 1 18/30 mo. at 5.00	8.00	
	June 1-Sept. 1, 93 days at 75¢	69.75	
E. Luetjen,	Salary May 1-31; Sept. 1-30; 2 mo. at 9.00	18.00	
	April 1-30; Oct. 1-March 31, 7 mo. at 9.00		63.00
A. A. Lehmann,	Salary May 1-Sept. 30; 5 mo. at \$15	75.00	
H. E. Sheppard,	Salary May 1-Sept. 30, 5 mo. at \$15	75.00	
	April 1-30; Oct. 1-March 31, 7 mo. at \$15		105.00
S. W. Pincock,	Salary May 1-Sept. 30, 5 mo. at \$8	40.00	
	April 16-30, 15/30 mo. at \$8		4.00
Mrs. J. P. Johnson,	Salary May 1-31, 1 mo. at 5.00	5.00	
	April 1-30, 1 mo. at 5.00		5.00
Louis Thorne,	Salary May 1-31, 1 mo. at 7.50	7.50	
	April 19-30, 12/30 mo. at 7.50		3.00
P. W. Wernette,	Salary May 1-Sept. 30, 5 mo. at 5.00	25.00	
	April 1-30; Oct. 1-March 31, 7 mo. at 5.00		35.00
R. E. Reid,	Salary May 1-Sept. 30, 5 mo. at \$10	50.00	
	April 1-30; Oct. 1-Mar. 31, 7 mo. at \$10		70.00
C. N. Kemper,	Salary May 1-Sept. 30, 5 mo. at 4.00	20.00	
	April 1-30; Oct. 1-Nov. 30, 3 mo. at 4.00		12.00
Earl Killian,	Salary May 1-Aug. 31, 17 trips at 2.00	34.00	
	April 1-30, 5 " " 2.00		10.00
M. A. Jensen,	Salary May 1-Aug. 15, 3 1/2 mo. at 9.00	31.50	
	April 29-30, 2/30 mo. at 9.00		.60
Wm. Reitzel,	Salary April 1-30, 1 mo. at 5.00		5.00
Chas. Jensen,	Salary April 1-30, 1 mo. at 5.00		5.00

	Irrigation Season	Winter Season
Telephone toll and rental, May 1-September 30 April 1-30; Oct. 1-March 31	287.20	57.20
Miscellaneous field and office supplies	262.61	220.04
Materials and equipment for gaging stations	614.82	
Premiums and filing fees on official bonds	62.00	
Rent of office space at St. Anthony, June 1-Sept. 30, 4 months at 10.00	40.00	
Attorney's retainer fee for legal services authorized at Water Master election March 7, 1921	<u>100.00</u>	
Total expenditures during irrigation season (May 1-September 30)	16714.64	
Total expenditures during winter season (April 1-30; Oct. 1-March 31)		7740.58

SOURCES OF REVENUE.

Normal Flow Fund	8990.15	2615.25
Stored Water Users (through State)	5785.72	1749.41
U. S. Geological Survey	204.85	331.05
State of Idaho (Cooperative Stream Measurement Fund)	912.80	1972.46
State of Idaho (Mud Lake Investigations)		47.14
State of Idaho (Commissioner of Reclamation)		36.21
U. S. Indian Service	683.79	834.56
U. S. Treasury (Federal Salary Bonus)	7.33	18.00
Water Users of the North Fork of Snake River and Tributaries (Special)	<u>130.00</u>	<u>136.50</u>
	16714.64	7740.58

FUNDS AVAILABLE APRIL 1, 1923.

Normal Flow Fund (a)	\$ 1753.84
U. S. Geological Survey (b)	630.59
State of Idaho (c)	
Cooperative Stream Measurement Fund	936.92
U. S. Indian Service (b)	
Actual expenditures not exceeding	539.13
Stored Water Users (a)	
Estimated	1188.84
Water Users of North Fork of Snake River and Tributaries (Special)	<u>26.00</u>
	\$ 5075.32

- (a) Additional funds probably available on or about June 1, 1923.
- (b) Represents amount available for expenditure prior to July 1, 1923.
- (c) Amount allotted for expenditure prior to July 1, 1923,
(subject to slight change)

Two important items are not included in this summary 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 35 copies of the 1921 report which was paid direct by the State Commissioner of Reclamation.

Comparison with the financial statement for the preceding year shows that the total annual cost of work has been reduced by \$3418.26. It is believed that this saving was accomplished with no material loss of efficiency in personnel and without a corresponding decrease in the amount of work carried on, though it was at first feared that both might result from the rather drastic action taken at the time of the 1922 water master election.

RECOMMENDATIONS.

Whenever the water supply for a given irrigated area is insufficient to permit unrestricted diversions at all times during the season, some disputes and a certain amount of dissatisfaction concerning its distribution must always be expected. If all rights and priorities have been definitely fixed, such difficulties should be largely limited to questions as to the accuracy with which the administrative officers follow the basic schedule of rights. When, however, the rights of any water user or group of users are not definitely determined, the possibilities for dissension are materially increased and sooner or later expensive litigation is bound to result unless the uncertainties can be settled in some other decisive manner.

The latter situation now exists in Water District No. 36. Normal flow rights have been established, either through permits and licenses granted by the State, or by court decrees. Storage rights have been acquired in a similar manner and under the existing statutes it is possible to use natural stream channels for the transportation and delivery of stored water.

The difficulty arises from the fact that the storage rights are not defined at the points of use and fail to specify the amount to be deducted for transmission losses from the reservoir to those points. Furthermore, the method of handling unknown reservoir quantities such as bank storage, natural lake storage and evaporation from increased flooded area has never been absolutely prescribed.

For a number of years schedules or agreements covering these doubtful points have been made each year, for operation purposes, by an advisory committee elected to represent the water users. This is admittedly only a temporary arrangement, and as such is subject to continual criticism. In fact, unless a more permanent and exact definition of rights can be secured in the near future by some other method, long and expensive litigation would

seen to be almost inevitable.

Efforts are now being made, through a special water users' committee of nine men representing different sections and interests, to work out a plan for settling these doubtful points through the medium of impartial investigation and arbitration. This committee, which was selected at a special meeting held in Idaho Falls on January 30, 1923, and confirmed at the annual water master election on March 5, 1923, consists of the following:

C. Redman Moon, St. Anthony, Idaho)	
F. A. Miller, St. Anthony, Idaho *)	North or Henrys Fork Area
John W. Hart (Chairman) Rigby, Idaho)	
W. O. Cotton, Idaho Falls, Idaho)	Central Section
John Kelley, Shelley, Idaho)	
W. C. Sollenberger, Blackfoot, Idaho)	
F. A. Banks, American Falls, Idaho)	
Ivan G. Lincoln, Twin Falls, Idaho)	Lower Valley
R. E. Shepherd, Jerome, Idaho)	

* Substitute for John E. Pincock, Sugar City, Idaho.

The success of the committee's work will depend largely upon the cooperation of all who are in any way concerned with water rights or water distribution within District No. 36, and on this account it seems advisable to recommend in this report:

- (1) Hearty support for this committee in their work.
- (2) The acceptance as final of all conclusions or decisions which are the unanimous action of the committee.
- (3) That provision be made for the selection of an impartial arbitration board to whom questions involving serious disagreement between committee members might be appealed for final decision.

WATER RIGHTS.

A revised diagram and summary of all the principal decreed water rights having their source in the South Fork or main Snake River is shown on Plate XXVII. The revisions take account of all court decisions, permanent transfers and annulments which were reported prior to April 1, 1923. Rights decreed to canals in remote or isolated portions of the district have not, in general, been listed.

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.

Storage rights in Jackson Lake Reservoir are shown in the column headed "Storage."

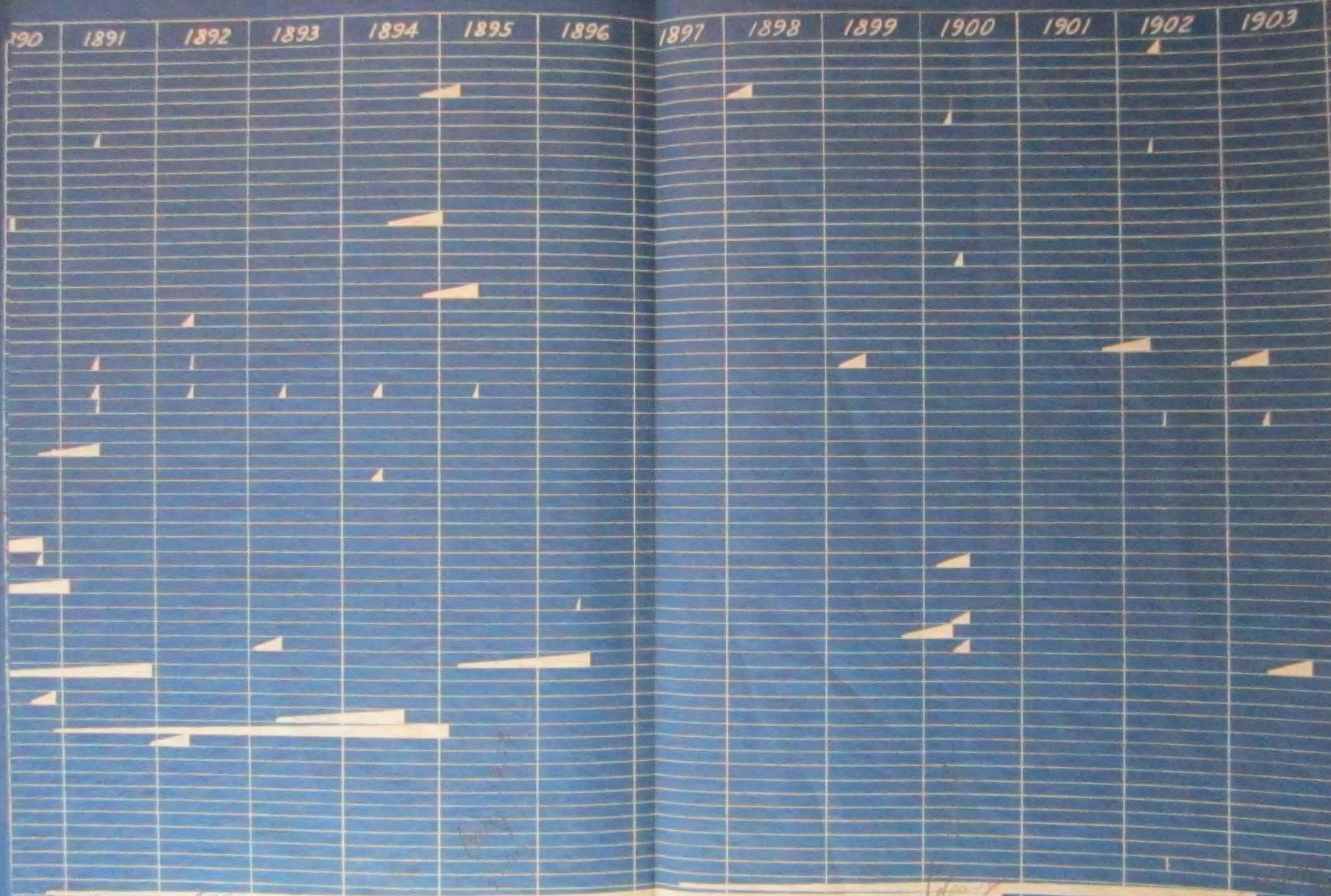
No changes have been reported during the past year in any of the principal Henrys Fork, Fall or Teton River water rights; hence the diagrams and summaries for these streams which were included on Plates XXVI and XXVII of the 1921 report* are still applicable.

*Water Distribution and Hydrometric Work, District No. 36, 1921,
by G. Clyde Baldwin.

1922 DISTRIBUTION WATER DISTRICT NO 36

PARTY OR CANAL	TOTAL SF	1880	1881	1882	1883	1884	1885	1886	1887	1888	1889	1890
RILEY	24											
ANDERSON & BRANDWICK	300											
FARMERS FRIEND	302.33											
ENTERPRISE	188											
NELSON	1											
MATTSON CRAIG	17.75											
ARNSBERGER	6											
HEISE	56											
BUTLER ISLAND	58.95											
HICKMAN	24											
ROSS & RAND	334											
STEELE	38											
HARRISON	45928											
CHENEY	6											
BOOMER & IDAHO	1000											
RUDY	19126											
KITE & NORD	88											
BURGESS	800											
CLARK & EDWARDS	70											
LOWDER & JENNINGS	52											
EAST LABELLE	140											
CONSOLIDATED FEEDER	184											
LENROOT	220											
REID	150											
TEXAS FEEDER	280											
NELSON COREY	16.8											
HILL PETTINGER	13											
LONG ISLAND	49865											
ISLAND	290											
RIGBY	160											
DILTS	28											
WEST LABELLE	1099											
PARKS & LEWISVILLE	351.12											
NORTH RIGBY	50											
WHITE	64											
BUTTE & MARKET LAKE	3664											
ESGOOD	17678											
KENNEDY BURGRAFF & LYLE	2481											
PORTER OR WESTERN & MARTIN	55075											
BEAR ISLAND	35											
TAYLOR & GOSHEN	46											
CITY OF IDAHO FALLS	188											
WOODVILLE	1255											
SNAKE RIVER VALLEY	710											
RESERVATION	600											
BLACKFOOT	3668											
NEW LAVASIDE	152											
PEOPLES	4242											
ABERDEEN SPRINGFIELD	1250											
CORBETT SLOUGH	23743											
NIELSEN HANSEN	15											
RIVERSIDE	100											
DANSKIN	180											
TREGO	6541											
WEARY RICK	412											
WATSON SLOUGH	274											
PARSONS	22											
THORESEN	4											
SMITH MAYNELL	17.8											
USRS MINIDOKA CANALS	2726											
TESS CANAL	3000											
TEHS CANALS	3000											
ANNUAL TOTALS IN SEC. FT.	20991.90	200.00	6000	6000	16000	48300	68040	45420	26480	177474	204100	105340

REVISED CHART AND TABUL



Year	1890	1891	1892	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903
Value	240	123480	17500	9950	44200	170200	40350	000	6800	7600	375396	000	17660	194600

SCALE = 300 SECFT - 1 INCH.

AN SUMMARY OF PRINCIPAL SOUTH FORK AND SNAKE RIVER WATER RIGHTS

1904	1905	1906	1907	1908	STORAGE	DATE	DECREE	PARTY OR CANAL	TOTAL	OLDER	DATE	DECREE	PARTY OR CANAL	TOTAL	OLDER
					12000*	1908	AUG 6 1000	USRS "FOSTER"	2726.	1726.	1892	MAY 1 130.	CORBETT SLOUGH	23943	10943
					0	"	JUN 16 350	TFNSLAW CO "FOSTER"	3000.	2650.	1891	DECE 600.	RESERVATION	600.	0.
					2000	1905	OCT 7 2250.	DO	3000.	400.	"	JUN 1 48	Idaho Canal & Imp Co	16.8	12.
					6100	"	JUN 1 36.	RUDY	19126	15576	"	" 1 6.	NELSON-COREY	6.	0.
					0	1904	OCT 22 48.	CITY OF IDAHO FALLS	188.	140.	"	" 1 15.	PDCarlson	220.	0.
					0	1903	SEP 1 110.	SNAKE RIVER VALLEY	710.	600.	"	" 1 195.	ARNBERGER	290.	95.
					0	"	JUN 1 100.	LENROOT	220.	120.	"	" 1 14.	Supplemental	280.	212.
					0	"	" 1 10.	HILLPETTINGER	13.	3.	"	JAN 24 400.	TEXAS FEEDER	55075	15075
					5000	"	MCH 26 1726	Carlson-Fagerstrom USRS "FOSTER"	2726.	0.	1890	NOV 28 72.	Texas Slough Co	152.	30.
					0	1902	JUN 1 3.	HILLPETTINGER	13.	0.	"	OCT 16 17.	GR WESTERN & PORTER	3664	3694
					2000	"	" 1 24.	Roth	24.	0.	"	" 16 3494	New Sweden Dist	3664	0.
					0	"	" 1 4.	RILEY	4.	0.	"	" 16 106	NEW LAVA SIDE	176.78	6618
					5120	"	" 1 4.	THORESEN	4.	0.	"	JUL 12 240.	BUTTE & MARKET LAKE	45928	5928
					0	"	MAY 1 56	Reese-King	56	0.	"	JUN 10 240.	HARRISON	800.	400.
					1040	"	" APR 14 0.	WEISE	56	0.	"	" 1 * 88	BURGESS	8.8	0.
					0	1900	OCT 11 400.	CONSOLIDATED FEEDER	184.	44.	"	" 1 08	KITE & NORD	38	3
					4000	"	" 11 3000.	Reese-King	56	0.	"	" 1 6541	Hatfield - Nord-Parsons	6541	0.
					3000	"	" 16 100.	TFNSLAW CO "FOSTER"	3000.	0.	"	" 1 459	Hatfield	2481	2022
					0	"	" JUN 16 46.	TFSS CANAL CO "FOSTER"	3000.	0.	"	" 1 26.	TREGO	52.	0.
					0	"	" 16 100.	TAYLOR & GOSHEN	46.	0.	"	FEB 21 178	LOWDER & JENNINGS	178	0.
					0	"	" 16 40.	OSGOOD	17678	7678	"	" 10 104	6-1-00 Error	178	0.
					0	"	" 16 40.	Taylor & Goshen	1255	855	"	" 10 140	SMITH-MAXWELL	178	0.
					0	"	" 1 14.	WOODVILLE	1255	855	"	" 10 88	Smith Jarvis Brennan	3668	0.
					0	"	" APR 30 1.	Taylor & Goshen	19126	14126	"	" 10 140	BLACKFOOT	176.78	5578
					0	"	" 30 1256	RUDY	19126	14126	"	" 10 140	OSGOOD	176.78	5578
					0	"	" 20 140.	NELSON	1.	0.	"	" 10 88	Blackfoot	176.78	5578
					0*	1899	JUN 1 76.	BC&CG Mattson	1776	48	"	" 10 88	GR WESTERN & PORTER	55075	15075
					355	"	" APR 15 68.	BC&CG Mattson	1776	48	"	" 10 88	Blackfoot	2481	1481
					6500	"	" 12 12.	CITY OF IDAHO FALLS	188.	0.	"	" JUN 2 6.	CHENEY	6.	0.
					0	1898	APR 15 68.	LENROOT	220.	44.	"	" 1 6.	LENROOT	220.	18.
					0	1896	JUL 9 400.	ENTERPRISE	188.	120.	"	" 1 30.	RUDY	19126	1126
					0	"	" JUN 1 35	ENTERPRISE	188.	0.	"	" 1 80.	REID	150.	30.
					0	1895	" 1 12.	BEAR ISLD (Weir)	35	0.	"	" 1 44.	CONSOLIDATED FEEDER	184.	0.
					0	"	" 1 160.	Texas Feeder	280.	254.	"	" 1 38.	Sunnydall Lyman	280.	174.
					15000	"	" MCH 22 120.	TEXAS FEEDER	280.	240.	"	" 1 12.	TEXAS FEEDER	280.	174.
					0*	"	" FEB 6 1250.	Texas Slough Co	280.	240.	"	" 1 12.	HARRISON	45928	4228
					0	"	" JAN 9 160.	WOODVILLE	1255	0.	"	" 1 1931	OH Olive	49865	4724
					8000	"	" APR 30 855	LENROOT	220.	39	"	" 1 20.	ISLAND	290.	15.
					42685	1894	AUG 12 400.	LENROOT	220.	39	"	" 1 043	Long Island	290.	15.
					0	"	" JUN 1 28.	6-1-03 Amended	220.	226.	"	" 1 043	HARRISON	45928	4228
					0	"	" 1 14.	TEXAS FEEDER	280.	226.	"	" 1 043	HARRISON	45928	4228
					0	"	" 1 14.	TEXAS FEEDER	280.	226.	"	" 1 043	HARRISON	45928	4228
					0	1893	JUN 1 14.	TEXAS FEEDER	280.	240.	"	" 1 043	HARRISON	45928	4228
					0	"	" APR 30 855	WOODVILLE	1255	0.	"	" 1 043	HARRISON	45928	4228
					0	1892	JUN 1 5.	LENROOT	220.	39	"	" 1 043	HARRISON	45928	4228
					0	"	" 1 14.	6-1-03 Amended	220.	226.	"	" 1 043	HARRISON	45928	4228
					0	"	" 1 26.	TEXAS FEEDER	280.	226.	"	" 1 043	HARRISON	45928	4228
					325810*			LOWDER & JENNINGS	52.	26					
					97183										
					322007										
					847000 Act										
4800	228600.	000	000	1350 00											

* Other storage than Jackson Lake is available.

ELDER	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
10943	1889 JUN 1	026	KENNEDY & BURGRAFF Long Island	24.81	11.16	1838 JAN 18	300	FARMERS FRIEND	302.83	2.83	1883 JUN 1	30	REID	150	0	1880 AUG 1	160	ANDERSON & ERANDWICK Farmers Progress	300	0
0	MAY 11 700		IDAHO	740	40	1887 JUN 18	20	RIGBY	160	20	1 1099		WEST LABELLE	1099	0	JUN 11	3931	LONG ISLAND	492.65	0
12	1 10943		CORBETT SLOUGH	239.43	0	10	10	BURGESS	800	10	1 64		WHITE	64	0	11	043	HARRISON	459.23	0
0	1 775		OSGOOD	176.78	48.03	1 90		RIVERSIDE	100	10	1 37		OSGOOD	176.78	34.93	11	026	KENNEDY & BURGRAFF	24.81	0
30	1 232		KENNEDY & BURGRAFF Corbett Slough	24.81	8.34	1 38		TEXAS FEEDER	280	98	1 5898		BUTLER ISLAND	5898	0	11	026	KENNEDY & BURGRAFF	24.81	0
95	APR 12 300		ANDERSON & ERANDWICK Farmers Progress	800	500	1 12		LIBERTY PARK CO NELSON COREY	16.8	0	1 726		RUDY	191.26	0					
212	6 200		SNAKE RIVER VALLEY	710	0	1 48		MATTSON-CRAIG	17.76	0	1 283		FARMERS FRIEND	302.83	0					
15075	MCH 1 60		NEW LAVA SIDE	152	20	1 30		ISLAND	290	15	1 093		OSGOOD	176.78	34					
80	JAN 12 5		KENNEDY & BURGRAFF W. S. Lyle Amendment	24.81	3.94	1 581		LONG ISLAND	492.65	393.15	1 5897		LONG ISLAND	492.65	275.2					
3494	1882 APR 13 100		RUDY	191.26	11.26	1 087		PORTER & GRAY WESTERN Long Island	550.75	135	1 064		HARRISON	459.23	3					
0	13 40		IDAHO	740	0	1 064		HARRISON	459.23	16.68	1 039		KENNEDY & BURGRAFF	24.81	1.8					
4618	JUL 15 302		WATSON SLOUGH	974	672	1 039		KENNEDY & BURGRAFF	24.81	2.57	MCH 6 24		WATSON SLOUGH	974	0					
5928	15 166		PEOPLES	424.2	76	1886 JUL 23	100	DANSKIN	180	0	6 76		PEOPLES	424.2	0					
400	15 32		WEARYTRICK	41.2	38	10	10	BURGESS	800	0	FEB 27 70		CLARK & EDWARDS	70	0					
3	JUN 18 120		RIGBY	160	40	1 16		WATSON SLOUGH	974	624	1884 JUN 4	34	OSGOOD	176.78	0					
0	10 380		BURGESS	800	20	1 15		ELIZ KRATZER ISLAND	290	0	1 20		NEW LAVA SIDE	152	0					
2022	1 80		DANSKIN	180	100	1 50		TEXAS FEEDER	280	48	1 20		PARKS & LEWISVILLE	351.12	20					
0	1 92		EAST LABELLE	140	48	1 08		OSGOOD	176.78	4543	1 9		LENROOT	220	0					
0	1 38		TEXAS FEEDER	280	136	1 48		OSGOOD	176.78	4063	1 5898		LONG ISLAND	492.65	216.22					
0	1 2112		PARKS & LEWISVILLE	351.12	140	1 2		MATTSON	191.26	726	1 064		HARRISON	459.23	2.36					
0	1 288		HARRISON	459.23	17.97	1 2		MARTIN	191.26	726	1 038		KENNEDY & BURGRAFF	24.81	142					
4578	1 08		OSGOOD	176.78	47.23	1 40		REID	150	30	APR 3 340		ANDERSON & ERANDWICK Farmers Progress	800	160					
13675	1 2		RUDY	191.26	926	1 5898		LONG ISLAND	492.65	934.17	1883 JUN 10	50	NORTH RIGBY	50	0					
1142	1 334		ROSS & RAND	334	0	1 064		HARRISON	459.23	16.04	1 20		PARKS & LEWISVILLE	351.12	0					
0	1 2		Supplemental	38	1	1 038		KENNEDY & BURGRAFF	24.81	219	1 15		NIELSEN HANSEN	13	0					
18	1 24		HICKMAN	24	0	MAY 3 38		WEARYTRICK	41.2	0	1 15		PORTER & GRAY WESTERN	550.75	0					
11126	1 2809		LONG ISLAND	492.65	481.25	1 2		OSGOOD	176.78	3263	1 5897		LONG ISLAND	492.65	157.25					
70	1 30		ISLAND	290	45	JAN 7 120		PORTER & GRAY WESTERN Mary Swedan Dist	550.75	15	1 064		HARRISON	459.23	1.72					
0	1 088		PORTER & GRAY WESTERN Long Island	550.75	135.87	1885 JUN 30	22	PARSONS	22	0	1 039		KENNEDY & BURGRAFF	24.81	108					
174	1 065		HARRISON	459.23	17.92	15	10	RIGBY	160	0	1882 JUN 1	58.98	LONG ISLAND	492.65	98.27					
4728	1 038		KENNEDY & BURGRAFF	24.81	2.96	10	1	STEELE	38	0	1 064		HARRISON	459.23	108					
4794	MAY 19 82		WATSON SLOUGH	974	64	1 10		RIVERSIDE	100	0	1 038		KENNEDY & BURGRAFF	24.81	0.65					
4685	1 10		OSGOOD	176.78	46.85	1 48		TEXAS FEEDER	280	0	1881 JUN 1	58.96	LONG ISLAND	492.65	39.31					
			Morgan			1 100		PARKS & LEWISVILLE	351.12	40	1 065		HARRISON	459.23	0.43					
						1 48		EAST LABELLE	140	0	1 039		KENNEDY & BURGRAFF	24.81	0.26					
						1 9		LENROOT	220	9										

NOTE ALL DECREES ARE LISTED IN SECOND FEET IN ABOVE SUMMARY LICENSE AND PERMIT RIGHTS DO NOT APPEAR