



D. W. DAVIS, GOVERNOR

STATE OF IDAHO
DEPARTMENT OF RECLAMATION

W. G. SWENDSEN, COMMISSIONER

BOISE

BUREAU OF WATER RESOURCES
WATER APPROPRIATIONS
CAREY ACT DEVELOPMENT

April 21, 1921.

Hon. D. W. Davis, Governor of Idaho,
Capitol Building,
Boise, Idaho.

Dear Governor:

I take pleasure in submitting herewith, for your consideration, a report by the Department of Reclamation, covering the administration of the waters of Snake River and its tributaries in Water District No. 36, for the year 1920. This work was conducted under the immediate supervision of Mr. G. Clyde Baldwin, acting as Special Deputy, in conjunction with Mr. John Empey, acting as Water Master for the said District, and under the authority and direction of this Department.

It is anticipated that you will find the report to contain a fund of detailed and reliable information such as will prove of great value, not only to the State of Idaho generally, but in particular to the many interested water users in the District above mentioned.

District No. 36 is probably the most important and involved water district in the State and the excellent administration of Mr. Baldwin reflects greatly to his credit and to the credit of the Department. The report discloses in a general way, the immense amount of painstaking study devoted to the complicated problems of the District and the careful attempt which has been made to work out an equitable plan of distribution.

It is indeed difficult to specifically enumerate the many individuals, associations, and companies to whom the Department is indebted for assistance, as without exception, the heartiest possible support was given to the administrative organization. It was largely on account of this prevailing spirit of co-operation that the work was carried on with little or no difficulty, and it is my wish to hereby express my sincere thanks.

In conclusion I also desire to take this opportunity of thanking you in behalf of the Special Deputy and his organization, and in my own behalf, for your valuable support and counsel in connection with this work and wish to assure you of our earnest appreciation.

Very Truly Yours,

Commissioner of Reclamation.

WEG:REH



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Idaho Falls, Idaho,
April 15, 1921.

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

Dear Sir:-

I am pleased to submit herewith the technical report covering water distribution and hydrometric operations in Water District No. 36 for the irrigation season of 1920.

Most of the hydrometric data 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 the one submitted for the irrigation season of 1919.

Special acknowledgments are due to the Water Users' Protector Association of the North Fork of Snake River and Tributaries for financial assistance rendered through the payment of Mr. Howard's salary for a period of two months during the winter; to the Canyon Irrigation District, the Fall River Reservoir Association and the North Fork Reservoir Association for financial assistance in connection with the installation and maintenance of gaging stations; to the Utah Power and Light Company, the United States Reclamation Service, the Twin Falls Canal Company and the North Side Canal Company, Ltd. for hydrometric data furnished entirely at their expense.

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, Ltd. 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. J. R. Thomson, D. H. Blossom and F. A. Banks, members of the water users' advisory committee, was very much appreciated.

Much credit should be given to Water Master John Empey, 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 Mr. Thomas R. Newell, to Mr. E. C. Howard and to Mrs. Edith M. Cure.

Respectfully yours,

G. Clyde Baldwin
Special Deputy.

WATER DISTRIBUTION AND HYDROMETRIC WORK

In District No. 36

1920

By G. Clyde Baldwin

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(2) The employment of another hydrographer and of a part time clerk for the St. Anthony office was authorized.

(3) The minimum allowance for natural flow at the Blackfoot gaging station on Snake River after decreed rights having a priority date of October 11, 1900, had been cut off was increased from 0 to 100 second-feet.

These changes were determined upon largely as a result of the experience and data acquired during the 1919 distribution season.

The work was financed by the advance of funds in the same amounts and manner as during the preceeding year.

A considerable amount of hydrometric data for both river and canal stations was obtained by the hydrographers during April and May, but daily records at all of these stations were not secured until June 1, when the river riders and deputy water masters began work.

PERSONNEL.

The personnel engaged in the work of distribution during the season of 1920 was as follows:

G. Clyde Baldwin,	Special Deputy State Commissioner of Reclamation
John Empey,	Water Master
Thomas R. Newell,	Hydrographer
E. C. Howard,	Hydrographer and Deputy Water Master
Wendell Dawson,	Hydrographer
C. F. Elford,	Hydrographer
L. L. Bryan,	Hydrographer
Ethel M. Klenm,	Clerk and Office Assistant, Idaho Falls office
Mrs. Edith M. Cure,	" " " " " " " "
Mrs. Z. E. Howard,	" " " " " " " "
	St. Anthony office

NO.	STATION
1	JACKSON LAKE AT MORAN, WYO.
2	SNAKE RIVER NEAR MORAN, WYO.
3	SNAKE RIVER NEAR HEISE, IDAHO
4	SNAKE RIVER NEAR SHELLEY, IDAHO
5	SNAKE RIVER AT PORTERVILLE BRIDGE, IDAHO
6	SNAKE RIVER NEAR BLACKFOOT, IDAHO
7	SNAKE RIVER AT NEELEY, IDAHO
8	LAKE WALCOTT NEAR MINIDOKA, IDAHO
9	SNAKE RIVER NEAR MINIDOKA, IDAHO.
10	LAKE MILNER AT MILNER, IDAHO
11	SNAKE RIVER AT MILNER, IDAHO
12	HENRY'S FORK NEAR ASHTON, IDAHO
13	HENRY'S FORK AT ST. ANTHONY, IDAHO
14	HENRY'S FORK NEAR REXBURG, IDAHO.
15	FALL RIVER NEAR SQUIRREL, IDAHO.
16	FALL RIVER NEAR CHESTER, IDAHO.
17	TETON RIVER NEAR ST ANTHONY, IDAHO
18	BLACKFOOT RIVER NEAR BLACKFOOT, IDAHO
19	PORTNEUF RIVER AT POCATELLO, IDAHO
20	NORTH SIDE MINIDOKA CANAL NEAR MINIDOKA, IDAHO.
21	SOUTH SIDE MINIDOKA CANAL NEAR MINIDOKA, IDAHO.
22	SOUTH SIDE TWIN FALLS CANAL AT MILNER, IDAHO.
23	NORTH SIDE TWIN FALLS CANAL AT MILNER, IDAHO.

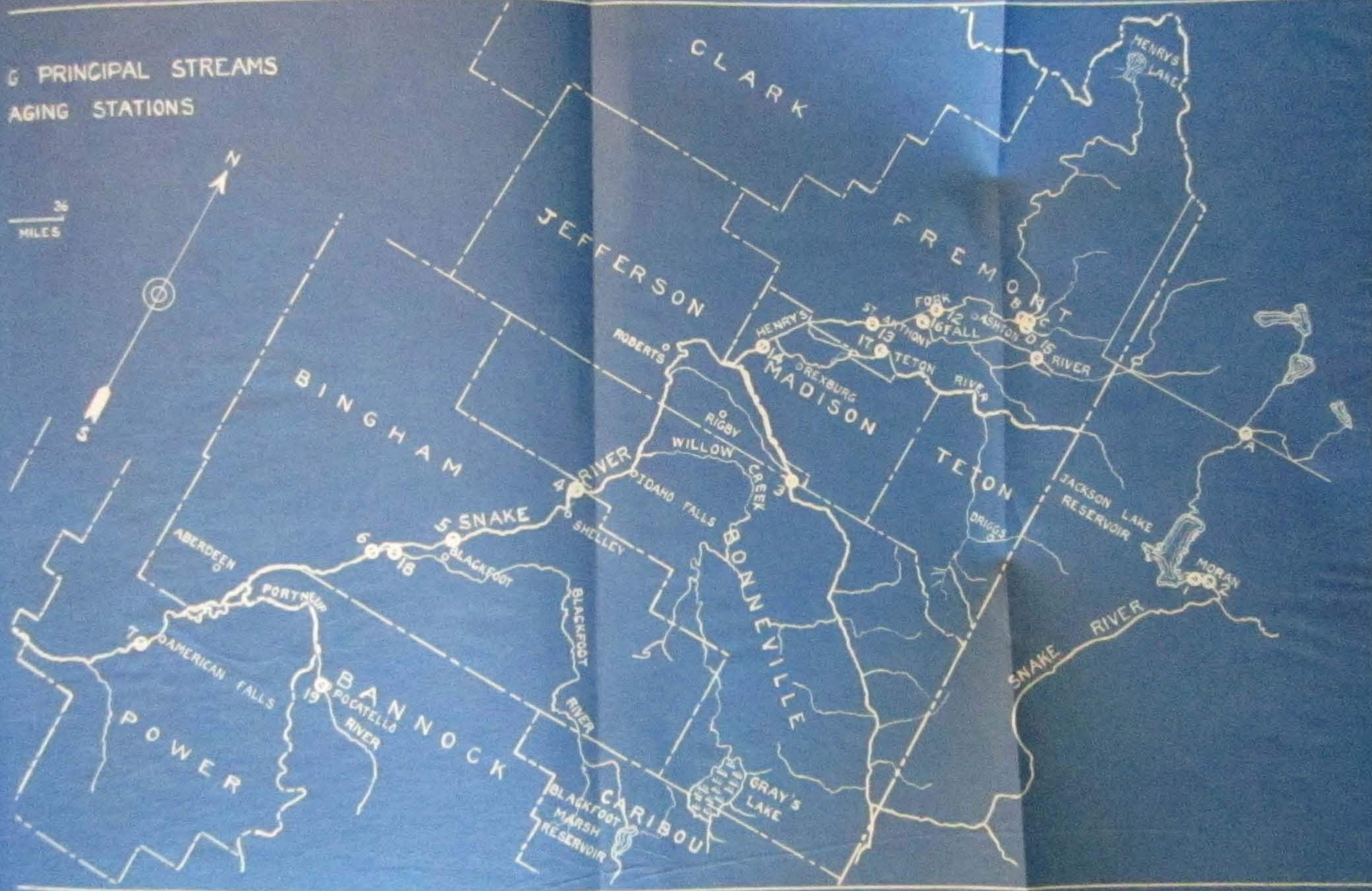
AUXILIARY STATIONS

- A. SNAKE RIVER AT SOUTH BOUNDARY OF YELLOWSTONE NATIONAL PARK.
 B. HENRY'S FORK AT WARM RIVER, IDAHO
 C. WARM RIVER AT WARM RIVER, IDAHO.
 D. ROBINSON CREEK AT WARM RIVER, IDAHO



G PRINCIPAL STREAMS AGING STATIONS

36
MILES



Martin Luetjen,	Deputy Water Master,	Upper Fall River division
Geo. A. Pincock,	" " "	Henry's Fork "
W. F. Dawson,	" " "	& Hydrographer, Teton River div.
W. J. Kremer,	" " "	Heise division
Albert Terry,	" " "	Rigby "
L. P. Dawson,	" " "	Idaho Falls division
Antone Christensen,	" " "	Blackfoot "
Wm. Burton,	" " "	Swan Valley canals
Fred Fredrickson,	" " "	Sand Creek Canals (Fremont Co.)
L. E. Gibson,	" " "	Minidoka dam
W. N. McConnel,	" " "	& Hydrographer, Milner dam
Joseph Markham,	Superintendent,	Jackson Lake dam
Miss Frances Woodburn,	Forwarding Agent,	Ashton, Idaho

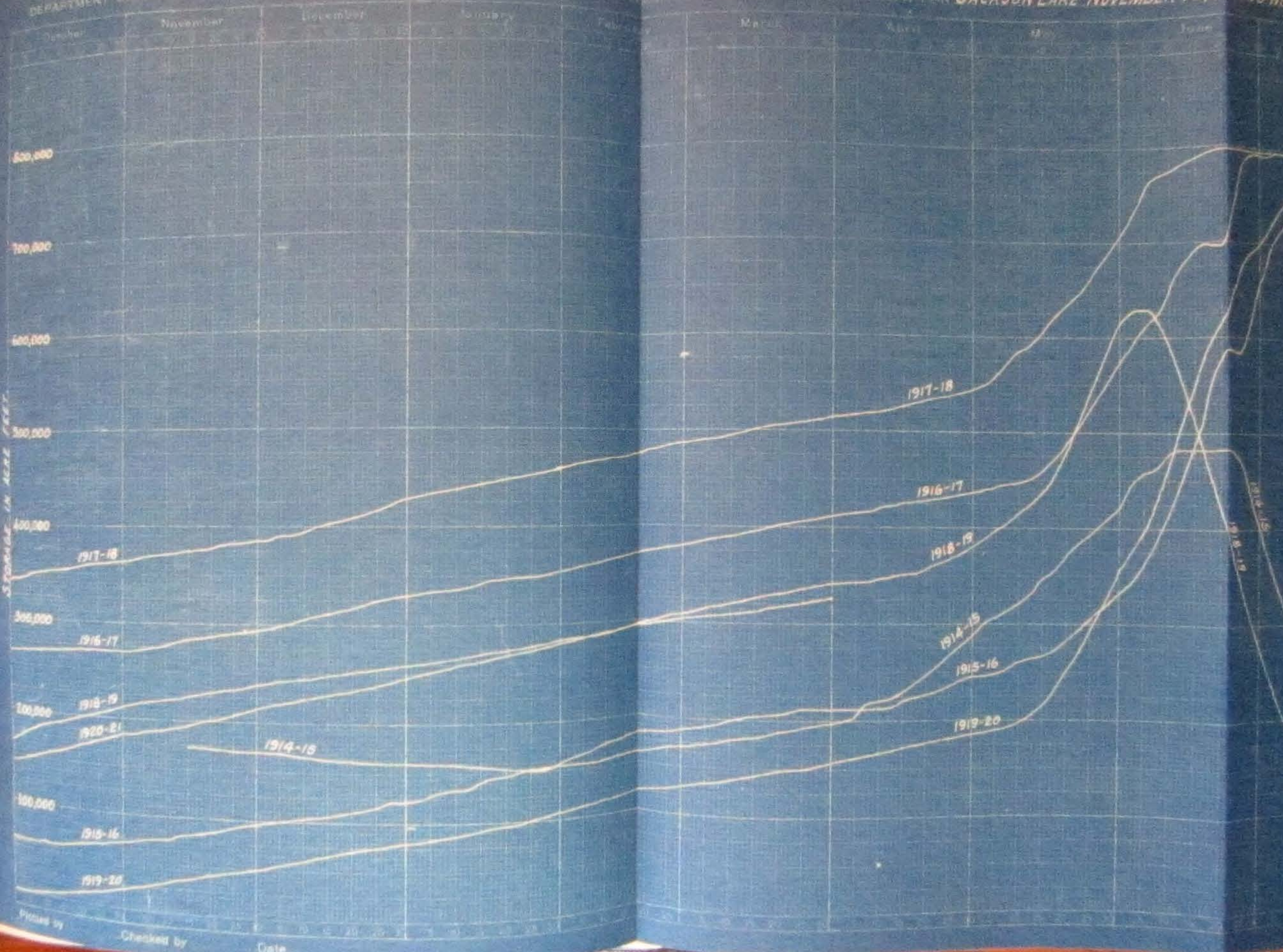
Ernest Luetjen, W. A. Winters, Harold Fuqua, Mrs. J. F. Johnson, Thelma Shupe, E. L. Jennings, James Thorne, Oliver L. Kofoed, J. A. Clough and H. R. Wallis, Gage Readers.

DESCRIPTIVE OUTLINE OF 1920 DISTRIBUTION.

As a result of the insufficient water supply available during the season of 1919, Jackson Lake reservoir was practically empty when the outlet gates were closed on October 3, 1919, to begin the storage of water for the next summer. The following winter contained many periods of unusually low temperatures, but because of the snow which accompanied the numerous blizzards, the total winter precipitation is believed to have been nearly normal. In fact reports about the first of May indicated that the snow which had accumulated in the high mountains of the upper Snake drainage area was of more than average depth, was well packed and of high water content. Practically all streams above Idaho Falls remained at a low stage throughout the month of April but rose rapidly with the arrival of warmer weather during the month of May. The discharge of Snake River was well sustained from about the middle of May until the latter part of June. The maximum discharge for the year at the Heise

gaging station was reached on June 10. By June 21 the flow at Heise was reduced to 16,100 second-feet, after which it increased slightly only to drop again from 17,400 second-feet on June 24 to 13,300 second-feet on June 27. (These discharges are for regular days from midnight to midnight.) This decrease was undoubtedly the result of cool weather but was of such magnitude that, in order to insure the filling of decreed rights, orders were issued to allow the entire natural flow of the river to pass the Moran gaging station beginning on the afternoon of June 27 and on June 28 all canals were cut to their record rights. Warmer weather, together with rain storms in the upper drainage area, eased the situation immediately thereafter so that, on the evening of June 28, the flow from Jackson Lake was reduced while on July 1 the outlet gates were again closed entirely and the entire flow of the river was stored until July 6, when some water was again released. (See Plate X) The first storage was turned out on July 9 after the reservoir had filled to a maximum capacity for the year of 746,280 acre-feet.

On July 10 all license and permit rights were cut off and the first of the 1908 decrees in the lower valley also became invalid. From July 11 to July 20 the natural flow decreased gradually until on July 21 it became necessary to cut all decreed rights having a date of priority subsequent to March 26, 1903, and to also take a part of the large right of the U. S. Reclamation Service of that date. Thereafter decreed rights were ordered cut as follows:



Plotted by _____
 Checked by _____
 Date _____

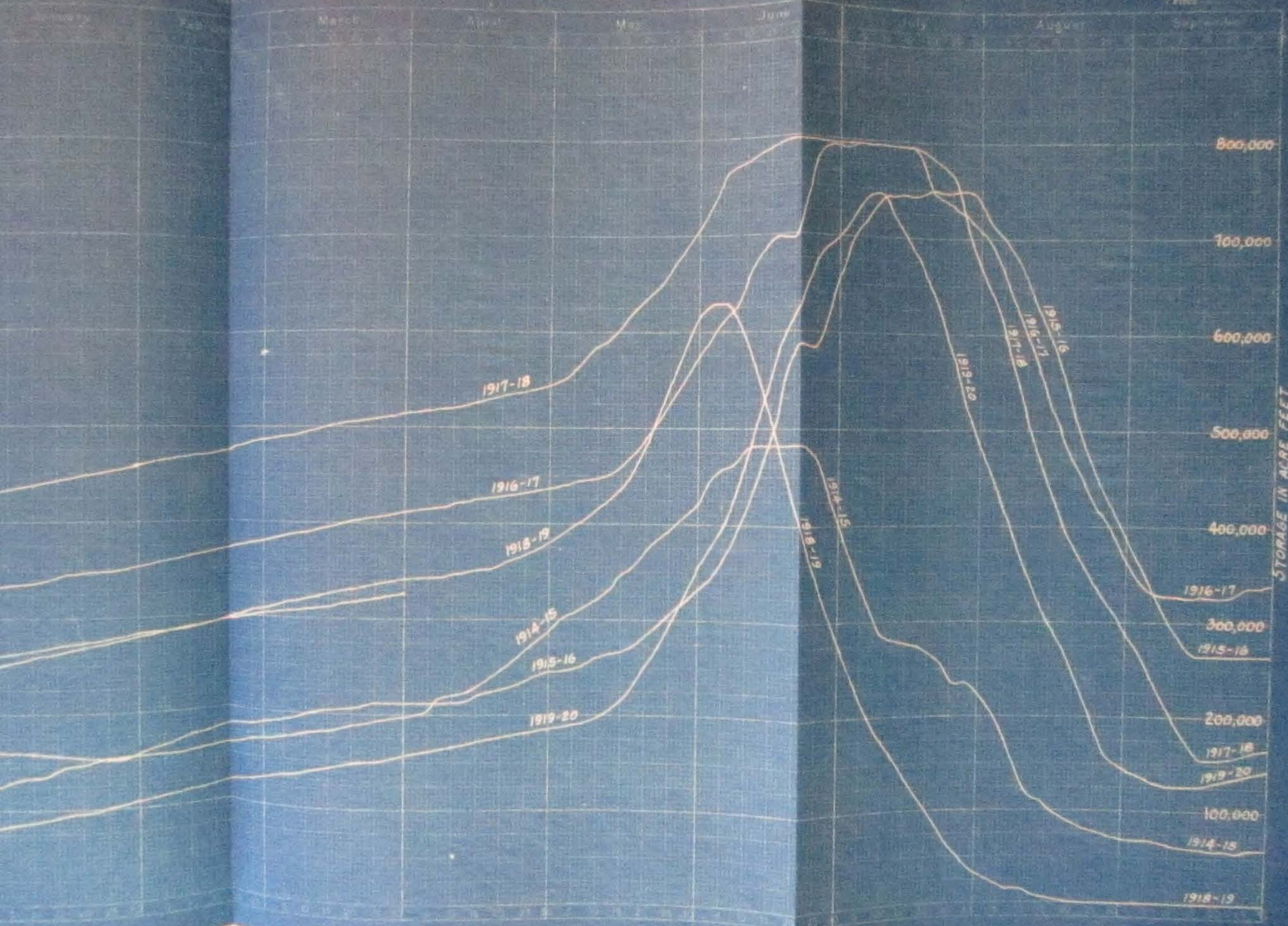


Plate II illustrates graphically the rate at which Jackson Lake reservoir was filled or drawn down during the period from November 15, 1914 to March 31, 1921 inclusive. All graphs are plotted on the basis of 1919 capacity tables.

WATER SUPPLY.

The amount and relative distribution of the run-off of Snake River during the year 1920, as compared to that of other years will be of interest to most water users.

Plate III shows by diagrams and tables the relation of the run-off for the year ending September 30, 1920 to that of other climatic years for which records are available at both the Moran and Neeley gaging stations. It should be noted that in the table which summarizes the data for the Moran station, beginning with the year 1910, corrections have been applied to take account of the storage in Jackson Lake which is held over from one climatic year to another. Data for the Montgomery's Ferry and Neeley stations however, represent total discharges without storage corrections. For this reason, as well as because of the effect of variations in the amount of water diverted above these lower stations, the Moran computed total run-off quantities are probably most nearly representative of natural conditions.

The following comparison will be of particular interest:

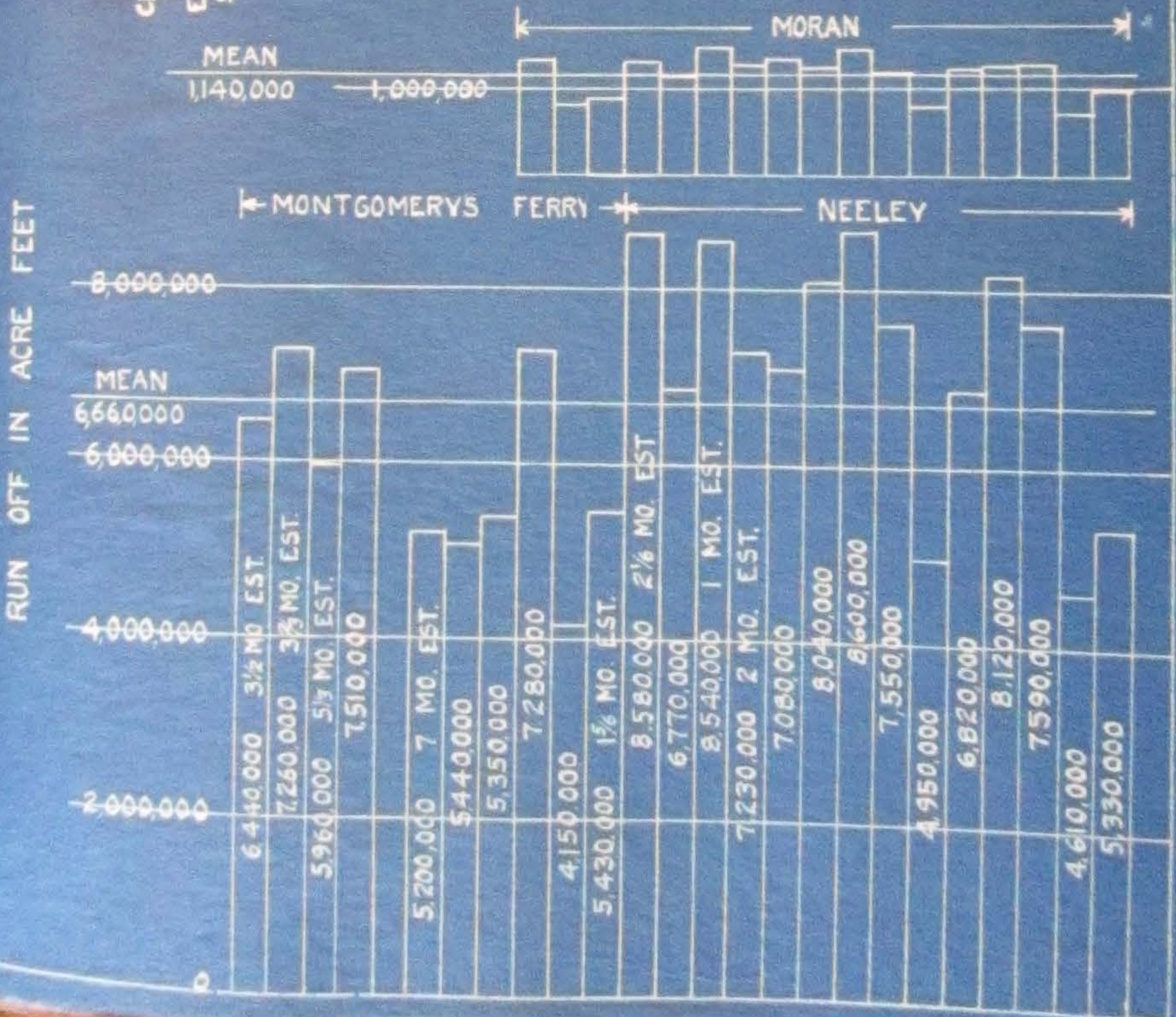
Station	Mean annual run-off for 17 yrs. ending Sept. 30, 1920	Run-off for year ending Sept. 30, 1919	% of mean	Run-off for year ending Sept. 30, 1920	% of mean
Moran	1,140,000	685,190	60.1	993,105	87.1
Neeley	6,863,000	4,610,000	67.2	5,330,000	77.7

TOTAL ANNUAL RUN OFF DIAGRAMS, SNAKE RIVER

YEAR	JACKSON		LAKE	MORAN	
	G.H. SEPT 30	CAP. SEPT 30	ANNUAL DIFFER.	RUN OFF	TOTAL RUN OFF
1904				1,301,910	1,301,910
1905				779,570	779,570
1906				899,220	899,220
1907				*1,282,000	*1,282,000
1908				1,123,600	1,123,600
1909	36.55	116,620		1,461,300	1,461,300
1910	36.35	112,900	-3,720	1,241,790	1,238,070
1911	34.23	74,160	-38,740	1,384,530	1,345,790
1912	36.30	111,970	37,810	1,176,300	1,214,110
1913	34.10	71,820	-40,150	1,476,150	1,436,000
1914	36.58	117,180	45,360	1,104,000	1,149,360
1915	33.38	58,960	-58,220	828,350	770,130
1916	44.05	264,550	205,590	1,016,590	1,222,180
1917	47.66	341,440	76,890	1,161,150	1,238,040
1918	39.21	167,130	-174,310	1,422,510	1,248,200
1919	30.02	340	-166,790	851,980	685,190
1920	37.95	142,920	142,580	850,525	993,105

CLIMATIC YEAR ENDING SEPT. 30
 1896 1897 1898 1899 1901 1902 1903 1904 1905 1906 1907 1908 1909 1910 1911 1912 1913 1914 1915 1916 1917 1918 1919 1920

*PARTIALLY ESTIMATED



The percentage relationship to the 17 year means differs so much at these two stations that the records at first appear to be inconsistent. However, we know that the amount of water diverted above the Neeley station for irrigation during the season of 1919 was considerably below the average. 1920, on the other hand, was a favorable season for the use of water for irrigation since the natural flow was well sustained during the period of maximum demand; hence it seems reasonable to believe that diversions above Neeley were then above the 17 year average in their total amount. The annual water master's reports indicate that diversions above Neeley during the season of 1920 exceeded those of 1919 by about 700,000 acre-feet. If we can assume those of the year 1920 to be as much above the mean as those for 1919 were below and if we approximate the effect at the Neeley station of Jackson Lake storage overdraft or hold over, some such corrections as the following should be applied:

	1919	1920
Jackson Lake storage adjustment	-140,000	+130,000
Variation from mean of diversions above Neeley	-350,000	+350,000

These, without taking account of changes on Willow Creek, Blackfoot and Portneuf Rivers, would indicate that the natural run-off at the Neeley station during 1919 was 60.0 per cent and that of 1920, 84.7 per cent of the 17 year average. In other words the percentages appear much more consistent with those obtained from the Moran records.

JACKSON LAKE STORAGE versus FLOOD WATER DIVERSIONS IN IDAHO.

During the latter part of June and the early part of July the discharge of the river fluctuated considerably. Decreases would follow each short period of cool weather, while higher temperatures and fre-

quent rains in the upper part of the river basin usually resulted in a rising stage. Under these conditions it was impossible to predict in advance, even from one day to the next, whether the natural flow of the river would increase or decrease and for this reason it was exceedingly difficult to secure an equitable distribution of the available supply.

At the beginning of this period many Idaho canals were diverting a large excess over and above their decreed rights, and the question as to whether these canals should be cut to their decrees while water was still being stored at Jackson Lake at once assumed importance and was discussed at a meeting of the directors of the Farmers' Protective Irrigation Association held in Idaho Falls on June 26, and again at a more representative meeting at the same place on June 28. Mr. W. G. Swendsen, Commissioner of Reclamation, was in attendance at the latter meeting and explained that while Idaho statutes could not grant authority to regulate the flow or diversion of water within the State of Wyoming, such joint regulation might be accomplished either by mutual agreement or under orders from a Federal Court. When it was understood that the Federal Government had obtained Wyoming permits to store water in Jackson Lake, whereas no record rights covering so-called flood or high water diversions in Idaho were in existence, it was evident that the record rights to store water in Wyoming should be recognized and take precedence over all non-record usury rights but should not of course be allowed to infringe on any prior record rights in Idaho. Operations were therefore continued upon this basis.

In any year when the Jackson Lake reservoir is filled to capacity in advance of the beginning of regulation farther down the river this point would not arise, and in a year when the natural flow decreases steadily and rapidly as in 1919, it would have no particular importance,

but in 1920 it meant the loss of flood water to several canals in the Idaho Falls-Blackfoot region for about one week, with a consequent gain in storage credited, at the reservoir stage then existing, to the Twin Falls rights.

DOMESTIC WATER.

Domestic water allowances, as granted during the season of 1919 to canals which would otherwise have been cut dry, were a source of much trouble and were detrimental to certain rights which were cut off in the order of their priority to furnish the water required for this purpose.

Consequently as soon as the 1920 irrigation season was sufficiently far advanced to indicate that the entire decreed rights of certain canals would probably later become invalid, the directors of the two water users associations of the upper valley and the members of the advisory committee of three were requested to meet at Idaho Falls to discuss this problem. At the first meeting which was held on July 27 a plan which earlier in the season had been tentatively approved by the advisory committee was outlined as follows:

No water for domestic use should be allowed except upon presentation of a written order authorizing the temporary transfer of water from a canal with a valid water right.

Discussion of this plan necessarily involved the question of temporary transfers. The discussion indicated some difference of opinion on both questions; hence it was decided to hold another general meeting on July 31, after opportunity had been afforded to better determine the sentiment on these questions in each section of the district. The consensus of opinion as summarized at these meetings indicated that the

water users were opposed to granting any domestic water allowances if it was possible for canals needing a supply for such purposes to obtain same through their own efforts, either by purchase or transfer. The majority of the water users favored the continuation of the practice of allowing temporary transfers although opposition to this plan was voiced by some of the canals in the North Fork territory.

Mr. F. A. Banks announced that this summer there would be surplus storage available at Jackson Lake reservoir amounting to about 50,000 acre-feet, which would be sold at the rate of \$1.00 per acre-foot. This meant that water for domestic purposes could be purchased so long as this available supply was not exhausted.

MUNICIPAL WATER RIGHTS.

Prior to 1920 the cities of Idaho Falls and St. Anthony had always been accorded the privilege of pumping water from Snake River into their respective mains, even during periods of greatest shortage, upon the theory that water so pumped was for domestic use. The question was now raised therefore, as to whether any exceptions to the decision to grant no domestic allowances from the river should be made in the cases of these two municipalities. On this point the majority of the water users seemed to feel that these cities should provide themselves immediately, either by purchase or transfer, with sufficient water to supply their needs during the period when their decreed rights were not in good standing.

This situation had previously been called to the attention of the mayor of Idaho Falls and also taken up with the officials of the Utah

TEMPORARY TRANSFERS.

Since the majority of the water users of District No. 36, as previously indicated, were in favor of continuing the system of temporary transfers authorized by the State Commissioner of Reclamation as an emergency measure for use during the season of 1919, this authorization was not revoked. Such transfers were only encouraged, however, when it was apparent that the results would be beneficial.

During 1920 this privilege was probably most satisfactorily utilized in the Henrys Fork area, where transfers were made through a central committee of three water users who endeavored to prorate the water pooled with them in such a way as to furnish the maximum possible benefits. This committee consulted with the hydrographer and deputy water masters as to the needs of the different canals and by handling transfers in this way eliminated many of the former objections. In all 24 transfers were effected in this section, while about 30 temporary transfer orders were received and honored during the season in the remainder of the district.

EXCHANGE OF NATURAL FLOW FOR STORAGE.

Arrangements were made in several instances to exchange storage from Jackson Lake reservoir for natural flow from individual canals. Exchanges of this character were of particular value to those canals which were reduced, through cuts, to rights which were insufficient to afford desirable operating heads. Written requests were required a sufficient length of time in advance to permit the necessary regulation at the outlet of Jackson Lake; then the canals were either shut down or in some instances cut dry and the natural

DAILY DISCHARGE IN SECOND FEET OF CANALS DIVERTING FROM SNAKE RIVER FOR JUNE 1920

Table with columns for canal names (e.g., BLACKFOOT, GREAT WESTERN, TREGO) and days of the month (1-30), plus a 'TOTAL' column. The table contains numerical data representing daily discharge in second feet for each canal.

DAILY DISCHARGE IN SECOND FEET OF CANALS DIVERTING FROM SNAKE RIVER FOR JULY 1920

Table with columns for canal names and days 1-31, plus a TOTAL column. Rows include various canal names like 'FALLS AND WILLOW CRR', 'ENTERPRISE', 'NORTH SIDA MINIDOKA', etc.

DAILY DISCHARGE IN SECOND FEET OF CANALS DIVERTING FROM SNAKE RIVER FOR AUGUST 1920

CANAL NAME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	TOTAL	
RILEY	23	23	22	0	0	0	6	22	21	21	20	20	19	20	16	15	15	14	19	19	18	10	8	8	8	8	8	8	8	8	8	8	396
ROBINSON	248	246	250	223	245	228	227	244	244	238	237	223	228	222	184	191	184	241	244	249	258	258	258	258	258	258	258	258	258	258	258	7927	
SMALL ROCK AND WILLOW CRK	373	372	372	373	370	377	391	394	377	377	380	383	396	399	603	627	616	586	564	561	529	463	456	456	456	456	456	456	456	456	456	16019	
FAIRBANKS FRIEND	304	357	351	351	357	364	348	367	352	352	350	347	351	351	344	357	354	306	281	287	21	10	104	291	291	291	292	292	181	174	171	8249	
INTERSTATE	90	89	91	91	90	86	80	83	83	89	89	76	129	170	114	93	96	111	124	117	148	148	127	79	109	111	114	109	54	51	51	5052	
NELSON	0	0	0	0	0	0	0	0	0	0	1	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
MCCOY AND CARL	5	5	5	5	5	6	5	6	6	6	7	8	9	9	9	9	9	9	8	8	9	9	9	9	9	9	9	9	9	9	9	9	6
ANDERSON	6	6	6	6	6	6	0	0	0	0	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
ROSS AND RAND	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	60
BUTLER ISLAND	53	53	53	57	51	47	47	50	50	50	50	49	49	49	48	46	46	46	46	46	48	48	48	48	48	48	48	48	48	48	48	48	1583
WALKER	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	62
NEWMAN	439	433	430	430	430	430	430	450	450	450	450	450	456	456	450	424	393	392	392	401	381	387	347	324	326	353	353	353	353	353	353	353	12446
CHENEY	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	211
BOYER	251	249	249	249	253	251	248	251	251	251	249	248	248	246	253	260	260	258	257	214	192	194	148	162	161	161	161	169	151	150	150	6781	
BOY	178	178	178	180	183	181	177	185	176	181	180	180	179	178	180	178	184	180	180	184	180	180	183	189	183	127	134	128	127	132	136	4868	
KITE AND HORN	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	189
BURGESS	799	799	799	799	799	799	799	806	799	799	799	799	799	799	799	799	799	799	799	799	799	799	799	799	799	799	799	799	799	799	799	799	25089
CLARK AND EDWARDS	70	69	69	69	69	69	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	2199
LOVBERG	43	44	44	43	44	43	45	46	45	45	45	44	44	43	40	36	31	30	48	39	19	28	46	46	46	46	46	46	46	46	46	46	1731
JENNINGS	7	7	6	6	6	6	6	7	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	173
LA BELLE	136	134	136	130	135	134	134	129	139	132	134	128	128	129	123	133	140	138	139	147	141	140	141	141	140	140	141	141	130	129	129	4147	
CONSOLIDATED FEEDER	129	125	101	121	129	52	125	82	49	55	54	47	44	46	43	67	100	104	108	112	112	110	112	101	97	102	98	100	78	87	89	2777	
LENGROD	122	120	118	116	116	134	124	148	148	87	58	48	49	51	54	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	2759
LEID	128	112	119	112	128	115	84	113	112	114	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	2628
TEXAS FEEDER	154	136	133	164	253	252	210	248	297	292	244	203	196	186	143	118	143	161	170	210	230	228	216	211	206	210	215	219	127	115	96	3826	
NELSON COREY	16	15	16	16	15	15	15	15	15	15	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	423
HILL PETTINGER	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25
MORGAN	5	5	5	6	6	6	5	7	6	6	6	6	6	4	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	148
ROSTAN	11	9	9	7	6	6	6	7	6	6	7	6	6	5	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	190
LONG ISLAND	408	396	398	391	409	400	374	413	410	401	306	288	282	279	259	241	241	236	233	281	268	252	252	253	241	241	248	240	197	182	176	9176	
ISLAND	197	140	164	155	161	163	149	160	156	148	154	138	135	132	127	122	119	119	116	180	163	159	146	113	111	113	121	122	84	77	75	4143	
RIBBY	160	160	160	156	162	156	156	153	163	156	160	159	159	156	152	156	160	159	150	165	163	162	162	159	157	158	91	91	85	89	85	4310	
DILLS	22	23	23	27	26	26	22	22	22	22	23	23	27	27	25	22	21	21	21	16	3	3	3	3	3	3	3	3	3	3	3	3	871
WEST LA BELLE AND WHITE	113	109	110	109	109	109	107	109	107	107	107	107	105	109	102	100	100	100	100	103	103	103	103	103	103	103	106	106	57	57	58	3130	
PARIS AND LEWISVILLE	325	323	349	341	344	306	277	280	280	278	278	277	246	245	235	229	306	296	296	322	312	314	229	229	211	214	218	163	107	104	107	8061	
NORTH RIBBY	45	49	49	47	48	49	48	49	47	47	47	47	47	46	43	47	46	46	49	50	50	49	49	49	49	49	49	49	49	49	49	1478	
BUTLER AND MARKET LAKE	226	229	227	237	261	251	247	247	144	178	205	219	229	237	237	240	247	183	247	188	213	219	212	212	212	205	184	178	168	168	171	6639	
DRGOOD	26	29	27	29	11	27	24	27	27	29	27	28	44	29	46	36	49	49	24	29	34	25	27	23	23	25	25	28	25	24	24	24	911
KENNEDY AND BURGRAFF	10	12	14	12	14	14	14	6	12	14	14	12	14	16	8	8	14	14	12	8	3	6	6	6	6	6	6	6	6	6	6	6	327
GREAT WESTERN	408	410	408	410	387	372	368	368	363	362	356	354	347	347	343	341	340	339	334	337	336	316	245	208	211	204	210	210	192	197	197	9814	
IDRHO	135	150	149	149	149	156	145	145	149	0	684	0	0	149	147	145	626	623	626	630	639	601	635	596	575	528	473	441	135	144	139	17033	
PORTER	209	209	209	209	175	172	168	168	168	168	168	168	166	166	166	166	166	166	166	169	166	139	99	86	84	83	84	15	84	84	89	4597	
MOOREVILLE	86	85	81	80	85	85	82	80	84	84	84	83	77	77	77	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	1947	
SNAKE RIVER VALLEY	556	493	432	467	459	628	603	707	693	707	622	695	691	691	699	699	723	667	713	719	681	674	676	667	639	603	609	612	612	609	127	18129	
TOTAL DIVERSION HEISE TO WOODVILLE	7323	7259	7281	7241	7337	7560	7207	7481	7298	6511	6849	6051	6066	6905	6676	6606	6638	6574	6572	6754	6460	6242	5989	5926	5946	5788	5702	5263	4680	2972	3394	197242	
RESERVATION	241	439	458	458	473	476	474	477	479	470	481	486	8	458	463	470	377	353	321	316	232	8	8	8	8	8	8	8	8	8	8	8	3191
BLACKFOOT	360	363	397	367	353	357	348	322	206	179	170	176	160	154	287	306	334	329	303	305	348	340	270	219	203	203	210	199	181	183	186	3203	
NEW LAWSIDE	153	151	158	153	154	153																											

DAILY DISCHARGE IN SECOND FEET OF CANALS DIVERTING FROM SNAKE RIVER FOR SEPTEMBER 1920

Table with columns for canal names (e.g., RILEY, BOGARD, HILL ROCK AND WILLOW CRK) and days of the month (1-30), plus a TOTAL column. The table contains numerical data representing discharge in second feet.

in the South Fork or main river for the period from June 1 to September 15 is shown on Plates IV, V, VI and VII.

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

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

These tables are prepared upon the following time interval basis:

1920 DISTRIBUTION WATER DISTRICT NO 36

DATE	JACKSON LAKE			MORAN				Z-OCEAN		DATE	HEISE					MORAN-HEISE				REXBURG		HEISE + RILEY + REXBURG	DATE		
	1920	GAGE	CAP AC FT	DRAINAGE	GAGE	DISCH	STD	NAT	DISCH		MORAN	1920	GAGE	DISCH	+ RILEY	STD	Z-O	NAT	TOT GAIN	LOSS	LOSS			GAIN	NAT
JUN 1	4870	364170		048	30	0	30	0	30	JUN 2	399	16330	16345	0	0	16345	16315	0	0	16315	573	2990	19335	JUN 3	
2	4904	371640		048	30	0	30	0	30	3	380	15390	15406	0	0	15406	15376	0	0	15376	501	2300	17706	4	
3	4937	378210		048	30	0	30	0	30	4	390	15880	15897	0	0	15897	15867	0	0	15867	456	1890	17787	5	
4	4971	386480		048	30	0	30	0	30	5	414	17080	17099	0	0	17099	17069	0	0	17069	446	1790	18889	6	
5	5012	395580		048	30	0	30	0	30	6	450	18980	19003	0	0	19003	18973	0	0	18973	478	2090	21033	7	
6	5059	406090		048	30	0	30	0	30	7	473	20240	20265	0	0	20265	20235	0	0	20235	509	2310	22579	8	
7	5115	418640		048	30	0	30	0	30	8	502	21900	21925	0	0	21925	21895	0	0	21895	536	2440	24368	9	
8	5180	433300		048	30	0	30	0	30	9	552	24900	24923	0	0	24923	24893	0	0	24893	565	2780	27703	10	
9	5257	450780		048	30	0	30	0	30	10	567	25840	25863	0	0	25863	25833	0	0	25833	614	3250	29113	11	
10	5334	468350		048	30	0	30	0	30	11	548	24660	24685	0	0	24685	24655	0	0	24655	649	3580	28265	12	
11	5407	485080		048	30	0	30	0	30	12	523	23430	23445	0	0	23445	23415	0	0	23415	670	3770	27215	13	
12	5480	501930		048	30	0	30	0	30	13	521	23010	23036	0	0	23036	23006	0	0	23006	688	3840	26876	14	
13	5551	518400		048	30	0	30	0	30	14	527	23970	23990	0	0	23990	23960	0	0	23960	696	4000	27340	15	
14	5622	534940		048	30	0	30	0	30	15	524	23190	23210	0	0	23210	23180	0	0	23180	688	3900	27110	16	
15	5693	551550		048	30	0	30	0	30	16	509	22300	22327	0	0	22327	22297	0	0	22297	670	3700	26027	17	
16	5760	567330		048	30	0	30	0	30	17	489	21140	21167	0	0	21167	21137	0	0	21137	661	3630	24797	18	
17	5818	581020		048	30	0	30	0	30	18	462	19630	19659	0	0	19659	19629	0	0	19629	665	3700	23359	19	
18	5872	593830		048	30	0	30	0	30	19	431	17960	17987	0	0	17987	17957	0	0	17957	684	3910	21897	20	
19	5923	609960		048	30	0	30	0	30	20	397	16230	16255	0	0	16255	16225	0	0	16225	650	3590	19845	21	
20	5960	614800		048	30	0	30	0	30	21	395	16130	16160	0	0	16160	16130	0	0	16130	602	3140	19300	22	
21	6005	625560		045	27	0	27	0	27	22	406	16680	16689	0	0	16689	16662	0	0	16662	569	2830	19519	23	
22	6056	637820		045	27	0	27	0	27	23	421	17440	17448	0	0	17448	17421	0	0	17421	561	2770	20218	24	
23	6106	649860		045	27	0	27	0	27	24	417	17240	17259	0	0	17259	17232	0	0	17232	562	2810	20049	25	
24	6156	661960		045	27	0	27	0	27	25	396	16180	16200	0	0	16200	16173	0	0	16173	555	2760	18960	26	
25	6203	673350		045	27	0	27	0	27	26	364	14630	14646	0	0	14646	14619	0	0	14619	540	2640	17286	27	
26	6233	680670		046	28	0	28	0	28	27	394	13250	13265	0	0	13265	13237	0	0	13237	518	2470	15735	28	
27	6259	687010		128	472	0	472	0	472	28	362	14530	14544	0	0	14544	14072	0	0	14072	471	2070	16614	29	
28	6268	689200		483	3620	0	3620	0	3620	29	422	17490	17514	0	0	17514	13894	0	0	13894	452	1930	19444	30	
29	6287	693830		347	1830	0	1830	0	1830	30	400	16380	16398	0	0	16398	14568	0	0	14568	469	2090	18488	JUL 1	
30	6306	698480		342	1770	0	1770	0	1770	JUL 1	394	16080	16103	0	0	16103	14333	0	0	14333	502	2400	18503	2	
JUL 1	6334	705350		193	500	0	500	0	500	2	356	14260	14278	0	0	14278	13778	0	0	13778	490	2310	16588	3	
2	6365	712960		067	56	0	56	0	56	3	343	13890	13906	0	0	13906	13850	0	0	13850	469	2140	16046	4	
3	6396	720580		065	52	0	52	0	52	4	354	14160	14178	0	0	14178	14126	0	0	14126	456	2040	16218	5	
4	6426	727990		061	46	0	46	0	46	5	352	14070	14086	0	0	14086	14040	0	0	14040	453	2030	16116	6	
5	6453	734660		057	41	0	41	0	41	6	335	13300	13321	0	0	13321	13280	0	0	13280	444	1970	15291	7	
6	6479	741090		088	95	0	95	0	95	7	315	12420	12444	0	0	12444	12349	0	0	12349	419	1780	14224	8	
7	6491	744060		347	1830	0	1830	0	1830	8	325	12850	12874	0	0	12874	11044	0	0	11044	400	1650	14524	9	
8	6499	746040	Minimum	389	2330	0	2330	0	2330	9	326	12890	12914	0	0	12914	10584	0	0	10584	367	1420	14334	10	
9	6500	746280		490	505	3950	247	3703	0	9950	10	354	14160	14184	241	0	13943	10234	6	0	10240	341	1250	15434	11
10	6476	740350	5440	652	6450	2743	3707	0	6450	11	400	16380	16405	2674	0	13731	9955	69	0	10024	312	1080	17435	12	
11	6434	729970	10380	750	8220	5232	2988	0	8220	12	443	18600	18625	5101	0	13524	10405	131	0	10536	302	1030	19655	13	
12	6399	721310	8660	688	7090	4366	2724	0	7090	13	412	16980	17002	4257	0	12745	9912	109	0	10021	295	968	17970	14	
13	6369	713950	7360	639	6210	3711	2499	0	6210	14	383	15780	15804	3618	0	12186	9594	93	0	9687	282	868	16672	15	
14	6337	706090	7860	643	6280	3963	2317	0	6280	15	386	15680	15704	3864	0	11840	9424	99	0	9523	268	775	16479	16	
15	6307	698720	7370	639	6210	3716	2494	0	6210	16	378	15290	15314	3623	0	11691	9104	93	0	9197	250	668	15982	17	
16	6274	690660	8060	636	6520	4063	2457	0	6520	17	381	15440	15464	3961	0	11503	8944	102	0	9046	243	614	16078	18	
17	6235	681150	9510	687	7080	4795	2285	0	7080	18	384	15590	15614	4675	0	10939	8534	120	0	8654	240	583	16197	19	
18	6195	671410	9740	690	7130	4911	2219	0	7130	19	381	15440	15464	4788	0	10676	8334	123	0	8457	238	557	16021	20	
19	6153	661240	10170	702	7350	5127	2223	0	7350	20	380	15390	15390	4999	0	10391	8040	128	0	8168	234	523	15913	21	
20	6108	650340	10900	718	7630	5495	2135	0	7630	21	381	15440	15464	5358	0	10106	7834	137	0	7971	231	490	15953	22	
21	6055	637580	12760	764	8480	6433	2047	0	8480	22	396	16080	16104	6272	0	9832	7624	161	0	7785	229	466	16570	23	
22	5997	623640	13940	790	8960	7028	1932	0	8960	23	393	16330	16340	6852	0	9									

DAILY SUMMARY OF DATA AT AND BETWEEN SNAKE

HEISE-WOOD			WOOD		WOODVILLE				HEISE-WOODVILLE				DIV WOOD-PORT		PORT		PORTERVILLE				WOOD-PORT				BLACK RIVER		P-B		BLACK		BL	
STD	ZC	NAT	Tn Bal	GAGE	DISCH	STD	NAT	TOTRAIN	LOSS	STRAIN	MIN	TOTAL	STD	NAT	Tn Bal	GAGE	DISCH	STD	NAT	TOTRAIN	LOSS	STRAIN	MIN	GAGE	DISC	+PORT	DIV	Tn Bal	GAGE	DISC		
0	0	5713	13616	910	13550	0	13550	-66	0	0	-66	1844	0	1844	11706	647	12120	0	12120	414	0	414	593	194	12314	240	12084	774	111			
0	0	6388	11313	865	11860	0	11860	542	0	0	542	1992	0	1992	9862	603	10380	0	10380	512	0	512	575	160	10540	245	10295	724	92			
0	0	6252	11535	854	11450	0	11450	-85	0	0	-85	2122	0	2122	9328	592	9960	0	9960	632	0	632	540	108	10068	246	9822	711	84			
0	0	6904	11985	877	12300	0	12300	315	0	0	315	2133	0	2133	10167	614	10810	0	10810	643	0	643	545	114	10924	257	10667	740	94			
0	0	6856	14177	913	13850	0	13850	-327	0	0	-327	2206	0	2206	11644	646	12080	0	12080	436	0	436	540	169	12249	272	11977	777	104			
0	0	7297	15278	943	14810	0	14810	-468	0	0	-468	2265	0	2265	12545	666	12890	0	12890	346	0	346	540	108	12998	281	12717	797	110			
0	0	7646	16719	977	16130	0	16130	-539	0	0	-539	2358	0	2358	13772	690	13870	0	13870	98	0	98	490	53	13923	288	13635	826	131			
0	0	7544	20159	1023	17950	0	17950	-2209	0	0	-2209	2241	0	2241	15709	724	15290	0	15290	-419	0	-419	430	12	15302	302	15000	866	140			
0	0	7514	21599	1050	19030	0	19030	-2569	0	0	-2569	2402	0	2402	16628	743	16090	0	16090	-538	0	-538	520	83	16173	323	15850	891	151			
0	0	7572	20693	1048	18950	0	18950	-1743	0	0	-1743	2529	0	2529	16421	740	15880	0	15880	-541	0	-541	550	121	16001	322	15679	891	151			
0	0	7468	19747	1039	18590	0	18590	-1157	0	0	-1157	2534	0	2534	16056	732	15460	0	15460	-596	0	-596	580	169	15629	289	15340	884	151			
0	0	8204	18672	1037	18510	0	18510	-162	0	0	-162	2424	0	2424	16086	729	15250	0	15250	-336	0	-336	600	207	15457	277	15180	879	151			
0	0	8357	19033	1030	18230	0	18230	-803	0	0	-803	2626	0	2626	15604	719	14750	0	14750	-854	0	-854	540	108	14858	275	14583	863	141			
0	0	8449	18661	1015	17630	0	17630	-1031	0	0	-1031	2695	0	2695	14935	711	14330	0	14330	-605	0	-605	520	83	14413	271	14142	850	141			
0	0	8850	17177	936	16370	0	16370	-307	0	0	-307	2671	0	2671	14199	697	13670	0	13670	-329	0	-329	390	2	13672	288	13384	830	131			
0	0	8767	16030	966	15700	0	15700	-330	0	0	-330	2847	0	2847	12853	676	12720	0	12720	-133	0	-133			12720	283	12437	804	121			
0	0	8609	14750	947	14960	0	14960	210	0	0	210	2801	0	2801	12159	660	12000	0	12000	-159	0	-159			12000	269	11731	786	111			
0	0	8323	13574	925	14120	0	14120	546	0	0	546	2809	0	2809	11311	638	11050	0	11050	-261	0	-261	545	114	11164	276	10888	762	101			
0	0	8261	11584	883	12520	0	12520	936	0	0	936	2758	0	2758	9762	600	9500	0	9500	-262	0	-262	640	293	9793	251	9542	722	91			
0	0	8292	11008	856	11520	0	11520	512	0	0	512	2807	0	2807	8713	579	8710	0	8710	-3	0	-3	700	438	9148	287	8861	697	81			
0	0	8767	10752	856	11520	0	11520	768	0	0	768	2492	0	2492	9028	582	8820	0	8820	208	0	208	570	152	8972	294	8678	692	81			
0	0	9084	11134	859	11630	0	11630	496	0	0	496	2512	0	2512	9118	583	8860	0	8860	258	0	258	565	144	9004	301	8703	692	81			
0	0	8984	11085	857	11560	0	11560	475	0	0	475	2925	0	2925	8635	575	8570	0	8570	-65	0	-65	390	2	8572	300	8272	681	71			
0	0	8557	10403	837	10820	0	10820	417	0	0	417	2845	0	2845	7975	556	7860	0	7860	-115	0	-115	420	8	7868	285	7583	662	71			
0	0	8344	8942	813	9950	0	9950	1008	0	0	1008	2815	0	2815	7135	536	7140	0	7140	5	0	5	440	17	7157	285	6872	637	61			
0	0	7722	8013	787	9020	0	9020	1007	0	0	1007	2424	0	2424	6596	512	6300	0	6300	296	0	296	470	36	6336	260	6076	602	51			
0	0	8017	8597	801	9520	0	9520	923	0	0	923	2791	0	2791	6729	521	6610	0	6610	-119	0	-119	445	20	6630	237	6393	622	51			
0	0	7740	11704	860	11670	0	11670	-34	0	0	-34	2924	0	2924	8746	572	8460	0	8460	286	0	286	550	121	8581	192	8389	686	51			
0	0	7902	10586	851	11340	0	11340	754	0	0	754	2931	0	2931	8409	566	8230	0	8230	-179	0	-179	580	169	8399	228	8171	680	51			
0	0	7447	11056	847	11190	0	11190	134	0	0	134	2780	0	2780	8410	561	8050	0	8050	-360	0	-360	582	173	8223	238	7985	671	71			
0	0	7260	9328	814	9980	0	9980	652	0	0	652	2613	0	2613	7367	536	7140	0	7140	227	0	227	560	136	7276	223	7053	642	71			
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0	0	7511	8605	798	9410	0	9410	805	0	0	805	2678	0	2678	6732	529	6890	0	6890	158	0	158	575	160	7050	231	6819	631	61			
0	0	7385	7906	776	8630	0	8630	724	0	0	724	2707	0	2707	5923	498	5800	0	5800	-123	0	-123	610	227	6027	227	5800	546	51			
0	0	7487	6727	747	7630	0	7630	903	0	0	903	2622	0	2622	5008	474	4990	0	4990	-18	0	-18	625	259	5249	217	5032	553	51			
0	0	7599	6925	743	7490	0	7490	565	0	0	565	2684	0	2684	4806	467	4750	0	4750	-56	0	-56	590	188	4938	211	4727	545	51			
0	0	7780	6554	738	7320	0	7320	766	0	0	766	2289	0	2289	5031	472	4920	0	4920	-111	0	-111	570	152	5072	204	4868	550	41			
21	0	7810	7603	762	8140	218	7921	537	1	0	538	2372	0	2372	5768	496	5740	216	5524	-28	3	-25	541	109	5849	202	5647	586	51			
21	0	7730	9734	825	10980	2640	7740	646	13	0	659	2444	0	2444	7936	548	7580	2611	4969	-356	29	327	550	121	7701	221	7480	657	51			
21	0	7384	12250	877	12300	5054	7246	50	26	0	76	2451	0	2451	9849	596	9350	4943	4407	499	111	388	570	152	9502	229	9279	707	91			
21	0	7149	10800	851	11340	4215	7125	540	21	0	561	2780	0	2780	8560	564	8160	4034	4126	400	181	219	570	152	8312	212	8100	672	81			
21	0	7028	9623	824	10340	3579	6761	717	18	0	735	2788	0	2788	7552	596	7140	3422	3718	412	157	255	550	121	7261	206	7055	638	71			
21	0	7079	9379	814	9980	3824	6156	601	19	0	620	2846	0	2846	7134	527	6820	3656	3164	314	168	-146	543	112	6932	222	6710	623	61			
21	0	7288	8673	799	9440	3584	5856	767	18	0	785	2818	0	2818	6622	510	6220	3433	2787	402	151	251	450	23	6243	212	6031	600	61			
21	0	7088	8969	804	9620	3920	5700	651	20	0	671	2872	0	2872	6748	521	6610	3748	2862	-138	172	34	505	67	6677	222	6455	618	61			
21	0	7270	8906	805	9660	4681	5029	754	23	0	777	2589	0	2589	7071	522	6640	4474	2166	431	157	274	560	136	6776	222	6554	616	61			
21	0	7295	8705	797	9370	4743	4627	665	24	0	689	2599	0	2599	6771	514	6360	4577	1783	411	166	245	460	29	6389	214	6175	604	61			
67	0	7303	8543	791	9160	4907	4263	617	25	0	642	2680	0	2680	6480	506	6080	4652	1428	400	255	745	440									

RIVER GAGING STATIONS FROM JACKSON LAKE WYOMING TO MILNER IDAHO

ACKFOOT			PORT-BLACK			CUM CORR		DATE	NEELEY				B-N	DATE	LAKE WALCOTT			NSMINC		SSMINC		NS-SS MIN CANS			MIN	MINIDOKA						
NO	STD	NAT	TOT	LOSS	GEN	NO	STD	APPR	1920	GAGE	DISCH	STD	NAT	GAIN	1920	GAGE	CAP	ALT	DRAFT	GAGE	DISCH	GAGE	DISCH	TOTAL	STD	NAT	TN	BAL	GAGE	DISCH	STD	NAT
30	0	11100	988	0	988	0	0	0	JUN 4	746	14240	0	14240	3170	JUN 5	4546	100730	-489	929	1490	530	977	2467	0	2467	11284	800	9640	0	9640		
10	0	9310	985	0	985	0	0	0	5	705	12450	0	12450	3140	6	4562	102660	-973	929	1490	537	997	2487	0	2487	8990	751	8190	0	8190		
70	0	8370	952	0	952	0	0	0	6	692	11900	0	11900	3030	7	4572	104460	-907	928	1480	533	986	2466	0	2466	8527	767	8640	0	8640		
60	0	9860	807	0	807	0	0	0	7	712	12750	0	12750	2890	8	4573	105190	-368	927	1480	532	983	2463	0	2463	9919	822	10370	0	10370		
20	0	11220	757	0	757	0	0	0	8	739	13930	0	13930	2710	9	4574	104100	550	927	1480	533	986	2466	0	2466	12014	830	12490	0	12490		
30	0	11990	727	0	727	0	0	0	9	756	14700	0	14700	2710	10	4576	104340	-121	928	1480	532	983	2463	0	2463	12116	883	12600	0	12600		
70	0	13170	465	0	465	0	0	0	10	730	15810	0	15810	2640	11	4579	104700	-182	929	1490	533	986	2476	0	2476	13152	919	14020	0	14020		
70	0	14860	140	0	140	0	0	0	11	816	17560	0	17560	2700	12	4578	104580	60	928	1480	528	971	2451	0	2451	15169	958	15630	0	15630		
70	0	15950	100	0	100	0	0	0	12	837	18620	0	18620	2670	13	4575	104220	182	927	1480	522	954	2434	0	2434	16368	959	15670	0	15670		
50	0	15950	271	0	271	0	0	0	13	838	18670	0	18670	2720	14	4577	104460	-121	926	1480	522	954	2434	0	2434	16115	947	15160	0	15160		
50	0	15650	310	0	310	0	0	0	14	832	18360	0	18360	2710	15	4577	104460	0	928	1480	520	948	2428	0	2428	15932	946	15120	0	15120		
30	0	15430	250	0	250	0	0	0	15	827	18110	0	18110	2680	16	4574	104100	182	929	1490	518	942	2432	0	2432	15860	943	15000	0	15000		
10	0	14730	147	0	147	0	0	0	16	814	17460	0	17460	2730	17	4562	102660	726	928	1480	517	939	2419	0	2419	15767	932	14550	0	14550		
70	0	14170	28	0	28	0	0	0	17	804	16970	0	16970	2800	18	4561	103260	-302	906	1420	520	948	2368	0	2368	14300	908	13580	0	13580		
30	0	13330	54	0	54	0	0	0	18	728	16190	0	16190	2860	19	4567	103260	0	897	1390	521	951	2341	0	2341	13849	894	13030	0	13030		
70	0	12270	167	0	167	0	0	0	19	765	15110	0	15110	2840	20	4566	103140	60	890	1380	520	948	2328	0	2328	12842	862	11810	0	11810		
50	0	11560	171	0	171	0	0	0	20	731	14470	0	14470	2910	21	4565	103020	60	892	1390	521	951	2341	0	2341	12189	842	11070	0	11070		
50	0	10650	232	0	232	0	0	0	21	734	13710	0	13710	3060	22	4562	102660	182	892	1390	527	968	2358	0	2358	11534	798	9580	0	9580		
10	0	9240	302	0	302	0	0	0	22	702	12320	0	12320	3080	23	4581	104940	-1149	911	1440	529	974	2414	0	2414	8757	713	7170	0	7170		
10	0	8430	431	0	431	0	0	0	23	677	11290	0	11290	2860	24	4575	104220	363	923	1470	534	989	2459	0	2459	9194	771	8750	0	8750		
70	0	8270	408	0	408	0	0	0	24	674	11160	0	11160	2890	25	4574	104100	60	926	1480	533	986	2466	0	2466	8754	766	8610	0	8610		
70	0	8270	433	0	433	0	0	0	25	673	11120	0	11120	2850	26	4567	103260	423	928	1480	531	980	2460	0	2460	9083	767	8640	0	8640		
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10	0	7400	183	0	183	0	0	0	27	630	10210	0	10210	2810	28	4575	104220	-121	928	1480	521	951	2431	0	2431	7658	702	6880	0	6880		
10	0	6710	162	0	162	0	0	0	28	632	9530	0	9530	2820	29	4568	103380	423	928	1480	510	919	2399	0	2399	7554	697	6760	0	6760		
30	0	5840	236	0	236	0	0	0	29	611	8780	0	8780	2940	30	4571	103740	-182	928	1480	504	902	2382	0	2382	6216	688	6530	0	6530		
60	0	6640	247	0	247	0	0	0	30	621	9140	0	9140	2500	JUL 1	4582	105070	-670	929	1490	515	934	2424	0	2424	6046	706	6990	0	6990		
70	0	8450	61	0	61	0	0	0	JUL 1	666	10840	0	10840	2390	2	4585	105430	-182	930	1490	518	942	2432	0	2432	8226	738	7830	0	7830		
0	0	8260	89	0	89	0	0	0	2	665	10800	0	10800	2540	3	4578	104580	428	928	1480	514	931	2411	0	2411	8817	751	8190	0	8190		
10	0	7990	5	0	5	0	0	0	3	661	10640	0	10640	2650	4	4573	103980	302	927	1480	511	922	2402	0	2402	8540	726	7510	0	7510		
10	0	7170	117	0	117	0	0	0	4	638	9760	0	9760	2590	5	4571	103740	121	928	1480	509	916	2396	0	2396	7485	716	7250	0	7250		
10	0	7150	120	0	120	0	0	0	5	637	9720	0	9720	2570	6	4570	103620	60	929	1490	508	913	2403	0	2403	7377	713	7170	0	7170		
0	0	7310	97	0	97	0	0	0	6	641	9870	0	9870	2560	7	4564	102900	363	929	1490	509	916	2406	0	2406	7827	713	7170	0	7170		
80	0	6880	61	0	61	0	0	0	7	627	9350	0	9350	2470	8	4554	101690	610	929	1490	512	925	2415	0	2415	7545	684	6420	0	6420		
10	0	5950	150	0	150	0	0	0	8	602	8480	0	8480	2530	9	4539	99880	913	928	1480	521	951	2431	-49	2480	6962	656	5730	-270	6000		
0	0	5110	78	0	78	0	0	0	9	576	7620	0	7620	2510	10	4527	98440	726	927	1480	529	974	2454	723	1726	5892	633	5170	-721	5894		
20	0	4820	93	0	93	0	0	0	10	566	7300	0	7300	2480	11	4515	96990	731	927	1480	534	989	2469	743	1726	5562	626	5010	-564	5574		
10	0	4930	62	0	62	0	0	0	11	566	7300	0	7300	2370	12	4515	96990	0	928	1480	534	989	2469	743	1726	4831	632	5150	-424	5574		
10	216	5534	103	0	103	0	0	0	12	584	7880	216	7664	2130	13	4540	100010	-1523	930	1490	537	997	2487	761	1726	3870	646	5480	-458	5938		
0	2618	4979	110	0	110	0	0	0	13	642	9910	2618	7299	2320	14	4574	104100	-2062	930	1490	533	1000	2490	764	1726	5358	674	6180	607	5573		
0	4943	4177	159	0	159	0	0	0	14	681	11450	4943	6507	2390	15	4589	105910	-913	928	1480	547	1030	2510	784	1726	8027	696	6730	1249	4781		
0	4026	3994	-80	8	-72	0	0	0	15	658	10920	4026	6494	2500	16	4586	105550	182	928	1480	546	1020	2500	774	1726	8202	704					

T	N-M	DATE	L MIL	PALAT		NSTFCAN		PA+NSTFCAN			SSTFCANAL				MURTAUGH C				MIL		MILNER		M-M	
				LOSS	1920	GAGE	GAGE	DISC	GAGE	DISCH	TOTAL	STD	NAT	GAGE	DISCH	STD	NAT	GAGE	DISC	STD	NAT	TN BAL		GAGE
40	1644	JUNE	1088	206	58	857	3090	3148	0	3148	1029	3440	0	3440	15	0	15	3037	667	2190	0	2190	-847	
20	800	7	1092	205	57	858	3090	3147	0	3147	1030	3440	0	3440	15	0	15	1588	659	2120	0	2120	532	
20	-113	8	1090	200	54	858	3090	3144	0	3144	1033	3460	0	3460	15	0	15	2021	764	3120	0	3120	1099	
20	-451	9	1090	202	55	857	3090	3145	0	3145	1032	3460	0	3460	15	0	15	3750	1010	5660	0	5660	1910	
20	-476	10	1090	204	56	857	3090	3146	0	3146	1032	3460	0	3460	15	0	15	5869	1041	6000	0	6000	131	
20	-484	11	1090	207	58	857	3090	3148	0	3148	1033	3460	0	3460	15	0	15	5977	1141	7100	0	7100	1123	
20	-868	12	1090	204	56	856	3080	3136	0	3136	1038	3490	0	3490	15	0	15	7379	1271	8640	0	8640	1261	
30	-461	13	1090	205	57	857	3090	3147	0	3147	1041	3510	0	3510	0	0	0	8973	1308	9130	0	9130	157	
20	698	14	1092	202	55	856	3080	3135	0	3135	1040	3510	0	3510	0	0	0	9025	1276	8710	0	8710	-315	
20	954	15	1092	200	54	856	3080	3134	0	3134	1039	3500	0	3500	0	0	0	8526	1249	8360	0	8360	-166	
20	812	16	1092	205	57	860	3100	3157	0	3157	1040	3510	0	3510	0	0	0	8453	1238	8240	0	8240	-223	
20	860	17	1090	205	57	860	3100	3157	0	3157	1038	3490	0	3490	12	0	12	8341	1227	8090	0	8090	-251	
30	1217	18	1090	206	58	860	3100	3158	0	3158	1042	3520	0	3520	31	0	31	7231	1121	6880	0	6880	-961	
20	720	19	1090	207	58	860	3100	3158	0	3158	1040	3510	0	3510	32	0	32	6880	1109	6750	0	6750	-130	
20	819	20	1091	207	58	860	3100	3158	0	3158	1040	3510	0	3510	27	0	27	6335	998	5530	0	5530	-805	
10	1032	21	1090	206	58	860	3100	3158	0	3158	1039	3500	0	3500	30	0	30	5122	961	3140	0	3140	12	
20	1119	22	1091	207	58	860	3100	3158	0	3158	1038	3490	0	3490	24	0	24	4998	816	3640	0	3640	-758	
80	1954	23	1091	208	59	855	3080	3139	0	3139	1038	3490	0	3490	36	0	36	2915	531	1060	0	1060	1855	
70	1587	24	1092	208	59	860	3100	3159	0	3159	1039	3500	0	3500	36	0	36	475	597	1570	0	1570	1095	
50	444	25	1090	209	59	865	3130	3189	0	3189	1041	3510	0	3510	180	38	0	38	2013	676	2280	0	2280	267
10	144	26	1091	208	59	860	3100	3159	0	3159	1039	3500	0	3500	183	39	0	39	1912	714	2640	0	2640	728
20	443	27	1090	209	59	860	3100	3159	0	3159	1039	3500	0	3500	180	38	0	38	1943	525	1470	0	1470	-473
10	860	28	1088	209	59	859	3100	3159	0	3159	1040	3510	0	3510	183	18	0	18	453	410	408	0	408	-45
10	778	29	1089	209	59	861	3110	3169	0	3169	1039	3500	0	3500	0	0	0	211	454	600	0	600	389	
10	794	30	1090	206	58	861	3110	3168	0	3168	1040	3510	0	3510	0	0	0	82	329	180	0	180	98	
10	-314	JUL 1	1093	207	58	863	3120	3178	0	3178	1041	3510	0	3510	174	35	0	35	-193	504	880	0	880	1073
20	-944	2	1092	207	58	861	3110	3168	0	3168	1041	3510	0	3510	183	39	0	39	273	597	1570	0	1570	1297
10	396	3	1090	208	59	861	3110	3169	0	3169	1040	3510	0	3510	0	0	0	1151	683	2340	0	2340	1189	
10	627	4	1092	208	59	863	3120	3179	0	3179	1040	3510	0	3510	170	38	0	38	1468	614	1710	0	1710	242
10	1030	5	1091	209	59	861	3110	3169	0	3169	1040	3510	0	3510	181	38	0	38	793	HD	1280	0	1280	487
50	335	6	1092	208	59	861	3110	3169	0	3169	1040	3510	0	3510	181	38	0	38	533	529	1040	0	1040	507
70	207	7	1091	209	59	862	3110	3169	0	3169	1043	3530	0	3530	181	38	0	38	433	531	1060	0	1060	627
10	657	8	1091	210	60	859	3100	3160	0	3160	1043	3530	0	3530	183	39	0	39	441	HD	536	0	536	95
20	1125	9	1086	209	59	858	3090	3149	0	3149	977	3130	0	3130	0	0	0	141	211	38	0	38	-103	
20	1232	10	1074	189	47	815	2880	2927	-73	3000	962	3040	40	3000	0	0	0	-237	186	23	23	0	260	
14	722	11	1054	168	35	766	2630	2665	-229	2894	952	2980	-20	3000	0	0	0	-475	180	20	20	0	495	
14	552	12	1043	168	35	743	2520	2555	-19	2574	929	2850	-150	3000	0	0	0	-395	176	18	18	0	413	
14	-319	13	1046	175	39	754	2570	2609	35	2574	935	2880	-120	3000	0	0	0	-539	176	18	18	0	357	
18	-1610	14	1051	187	46	810	2850	2896	-42	2938	1037	3490	490	3000	0	0	0	-906	174	17	17	0	923	
13	-822	15	1052	203	56	821	2900	2956	383	2573	1046	3540	540	3000	158	14	14	0	-330	172	16	16	0	346
11	1297	16	1080	206	58	852	3060	3118	1337	1781	1047	3550	550	3000	196	35	35	0	29	176	13	13	0	-11
8	1272	17	1094	206	58	864	3120	3178	1410	1768	1048	3560	560	3000	170	34	34	0	158	HD	329	329	0	171
0	591	18	1083	206	58	851	3060	3118	1608	1510	1044	3530	530	3000	170	34	34	0	-52	216	41	41	0	93
13	868	19	1068	206	58	838	2990	3048	2275	773	1043	3530	530	3000	173	35	35	0	-533	172	16	16	0	549
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6	332	21	1051	208	59	823	2920	2979	2493	486	1043	3530	530	3000	173	35	35	0	-264	167	14	14	0	278
0	512	22	1032	209	59	805	2820	2879	2473	400	1035	3480	480	3000	174	36	36	0	-195	166	14	14	0	209
0	474	23	1037	193	50	809	2840	2890	2490	400	1037	3490	490	3000	152	25	25	0	-255	166	14	14	0	269
0	383	24	1045	174	38	818	2880	2918	2518	400	1045	3540	540	3000	114	9	9	0	-147	166	14	14	0	161
4	-281	25	1048	175	39	821	2880	2919	2559	360	1047	3550	546	2704	114	6	6	0	-195	168	15	15	0	210
14	-177	26	1060	176	40	830	2920	2960	2665	295	1049	3560	1351	2209	114	9	9	0	-179	175	18	18	0	197
10	-211	27	1067	176	40	834	2930	2970	2690	280	1049	3560	1460	2100	114	7	7	0	-157	176	18	18	0	175
0	-240	28	1072	175	39	837	2940	2979	2701	278	1047	3550	1468	2082	114	6	6	0	-135	175	18	18	0	153
0	418	29	1080	180	42	833	2940	2982	2696	286	1047	3550	1406	2144	111	6	6	0	-220	179	20	20	0	240
0	-154	30	1075	186	46	833	2920	2966	2685	281	1045	3540	1431	2109	0	0	0	0	-212	177	19	19	0	231
0	32	31	1078	184	44	837	2940	2984	2716	268	1049	3560	1548	2018	0	0	0	0	-244	178	19	19	0	263

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

1920 DISTRIBUTION WATER DISTRICT NO 36

DATE	JACKSON LAKE			MORAN				Z OCEAN		DATE	HEISE					MORAN-HEISE				REXBURG		HEISE +RILEY +REXBO	DATE	DIY HEISE			
	1920	GAGE	Cap Ac Ft	Drift All	GAGE	DISCH	STD	NAT	Disc		MORAN	1920	GAGE	DISCH	+RILEY	STD	Z Oc	NAT	Tot Gmin	Loss Sr	Loss			Gmin Nat	GAGE	DISCH	1920
27	56.51	541720	17830	890	10820	8989	1831	0	10820	28	414	17080	17102	8764	0	8338	6282	225	0	6507	222	459	17541	29	7433	175	0
28	58.79	524210	16810	860	10260	8475	1785	0	10260	29	400	16380	16402	8263	0	8139	6142	212	0	6364	226	455	16857	30	7349	175	0
29	55.14	509800	15110	808	9300	7618	1682	0	9300	30	371	14960	14966	7428	0	7538	5666	190	0	8856	226	455	15421	31	6909	175	0
30	54.52	495470	14330	796	9080	7225	1855	0	9080	31	363	14580	14601	7044	0	7557	5521	181	0	8702	224	462	15063	1	7328	175	0
1	53.82	481640	13830	782	8820	6973	1847	0	8820	AUG 1	359	14390	14413	6799	0	7614	5593	174	0	8767	232	615	14928	2	7259	175	0
2	52.83	469030	12610	763	8470	6357	2113	0	8470	2	351	14030	14053	6198	0	7855	5583	159	0	8747	236	649	14712	3	7281	175	0
3	52.25	456690	12340	761	8430	6221	2209	0	8430	3	354	14160	14182	6065	0	8117	5752	156	0	8908	264	696	14878	4	7241	175	0
4	51.65	443500	11990	771	8610	6650	1960	0	8610	4	350	13980	13980	6484	0	7496	4370	166	0	8536	263	692	14672	5	7337	175	0
5	51.08	429920	11580	778	8740	6846	1894	0	8740	5	350	13980	13980	6675	0	7305	5240	171	0	8411	258	662	14449	6	7360	175	0
6	50.48	403630	11330	754	8060	6483	1577	0	8060	6	333	13200	13200	6321	0	6879	5140	162	0	8302	257	663	13863	7	7207	175	0
7	49.82	388910	10720	785	8570	7422	1448	0	8570	8	347	13840	13862	7236	0	6626	4992	186	0	8178	255	654	14516	9	7292	175	0
8	49.17	374520	10390	770	8600	7255	1345	0	8600	9	339	13480	13501	7074	0	6427	4901	181	0	8082	254	650	14151	10	6511	175	0
9	48.55	360880	10640	751	8240	6877	1363	0	8240	10	333	13200	13221	6705	0	6516	4981	172	0	8153	252	646	13861	11	6849	175	0
10	47.98	348890	10490	733	7730	6297	1433	5	7735	11	322	12720	12740	6140	5	6595	5005	157	0	8162	251	636	13376	12	6051	175	0
11	47.44	336670	11720	700	7310	5909	1401	10	7320	12	306	12090	12050	5761	10	6279	4730	148	0	8178	255	678	12728	13	6066	175	0
12	46.89	324760	11910	694	7290	6005	1285	6	7296	13	302	11860	11879	5855	6	6018	4583	150	0	8133	268	740	12619	14	6905	175	0
13	46.35	313170	11590	682	6990	5843	1147	16	7006	14	293	11490	11510	5697	16	5797	4504	146	0	8150	264	721	12231	15	6676	175	0
14	45.94	304390	8780	598	5480	4427	1053	14	5494	15	252	9860	9876	4316	14	5546	4332	111	0	8493	256	682	10558	16	6606	175	0
15	45.53	295690	8700	592	5380	4386	994	16	5396	16	244	9550	9565	4276	16	5273	4169	110	0	8279	254	673	10238	17	6658	175	0
16	45.12	287000	8670	588	5310	4381	929	18	5328	17	238	9330	9345	4271	18	5056	4017	110	0	8127	242	618	9963	18	6514	175	0
17	44.70	278170	8830	589	5330	4452	878	16	5346	18	233	9140	9154	4341	16	4797	3808	111	0	8919	244	627	9781	19	6572	175	0
18	44.23	268320	9850	621	5890	4966	924	15	5905	19	240	9400	9413	4842	15	4556	3508	124	0	8632	248	645	10058	20	6754	175	0
19	43.65	256270	12050	675	6860	6075	785	14	6874	20	268	10470	10485	5923	14	4548	3611	152	0	8763	251	659	11144	21	6460	175	0
20	43.05	243860	12410	681	6970	6257	719	14	6984	21	270	10350	10365	6101	14	4450	3581	156	0	8737	265	730	11295	22	6268	175	0
21	42.43	231200	12660	682	6990	6383	607	14	7004	22	272	10630	10640	6223	14	4403	3636	160	0	8796	283	831	11471	23	5989	175	0
22	41.81	218620	12580	679	6930	6342	583	15	6945	23	268	10470	10478	6183	15	4220	3533	159	0	8692	286	852	11330	24	5926	175	0
23	41.17	205790	12870	683	7000	6489	511	15	7015	24	270	10350	10358	6327	15	4216	3543	162	0	8705	284	847	11405	25	5946	175	0
24	40.53	193020	12730	679	6930	6418	512	14	6944	25	268	10470	10478	6258	14	4206	3534	160	0	8694	287	874	11352	26	5793	175	0
25	39.89	180380	12640	681	6970	6373	597	14	6984	26	273	10670	10678	6214	14	4450	3694	159	0	8853	299	945	11623	27	5702	175	0
26	39.27	168320	12080	677	6900	6090	810	15	6915	27	274	10710	10718	5938	15	4765	3803	152	0	8953	313	1030	11748	28	5563	175	0
27	38.85	160160	8140	569	4980	4104	876	14	4994	28	252	9860	9869	4001	14	5854	4875	103	0	8978	334	1170	11039	29	4280	175	0
28	38.63	155940	4220	425	2800	2128	672	14	2814	29	179	7300	7301	2075	14	5212	4487	53	0	8540	356	1330	8631	30	3973	175	0
29	38.40	151530	4410	423	2770	2223	547	14	2784	30	167	6930	6931	2167	14	4750	4147	56	0	8203	364	1380	8311	31	3394	175	0
30	38.20	147690	3840	401	2480	1936	544	13	2493	31	159	6690	6695	1888	13	4794	4202	48	0	8250	362	1370	8065	SEP 1	3026	175	0
31	38.04	144630	3060	369	2080	1543	537	0	2080	SEP 1	141	6180	6183	1504	0	4679	4103	39	0	4142	362	1370	7553	2	3376	175	0
1	37.82	141590	3040	363	2010	1533	477	0	2010	2	133	6120	6123	1495	0	4628	4113	38	0	4151	360	1350	7473	3	3337	175	0
2	37.74	138990	2640	346	1820	1331	489	0	1820	3	128	5820	5821	1298	0	4523	4001	33	0	4034	365	1390	7211	4	3229	175	0
3	37.60	136310	2640	344	1790	1331	459	0	1790	4	125	5740	5741	1298	0	4443	3951	33	0	3984	364	1380	7121	5	3228	175	0
4	37.45	134480	2830	353	1890	1427	463	0	1890	5	125	5740	5741	1391	0	4350	3851	36	0	3887	363	1410	7151	6	3171	175	0
5	37.32	131020	2460	356	1930	1240	630	0	1930	6	131	5900	5901	1209	0	4692	3971	31	0	4002	375	1460	7361	7	3399	175	0
6	37.22	129140	1880	348	1840	948	892	0	1840	7	132	5930	5931	924	0	5007	4091	24	0	4115	378	1560	7491	8	3563	175	0
7	37.12	127250	1890	348	1840	953	887	0	1840	8	130	5870	5871	929	0	4942	4031	24	0	4055	378	1590	7461	9	3621	175	0
8	37.07	126310	940	286	1200	474	726	0	1200	9	126	5760	5761	462	0	5293	4561	12	0	4573	378	1560	7321	10	3522	175	0
9	37.06	126120	190	230	735	96	639	0	735	10	102	5140	5140	94	0	5046	4305	2	0	4407	373	1630	6770	11	3313	175	0
10	37.06	126120		213	620	0	620	0	620	11	095	4960	4960	0	0	4960	4340	0	0	4340	402	1660	6620	12	3442	175	0
11	37.06	126120		212	614	0	614	0	614	12	088	4790	4790	0	0	4790	4176	0	0	4176	398	1630	6420	13	3174	175	0
12	37.06	126120		181	435	0	435	0	435	13	082	4650	4650	0	0	4650	4215	0	0	4215	391	1580	6230	14	3123	175	0
13	37.06	126120		171	385	0	385	0	385	14	071	4380	4380	0	0	4380	3995	0	0	3995	388	1560	5940	15	3150	175	0
14	37.06	126120		171	385	0	385	0	385	15	067	4290	4290	0	0	4290	3905	0	0	3905	381	1500	5790	16		175	0
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16	37.10	126870		080	78	0	78	0	78	17	062	4180	4180	0	0	4180	4102	0	0	4102							

DAILY SUMMARY OF DATA AT AND BETWEEN

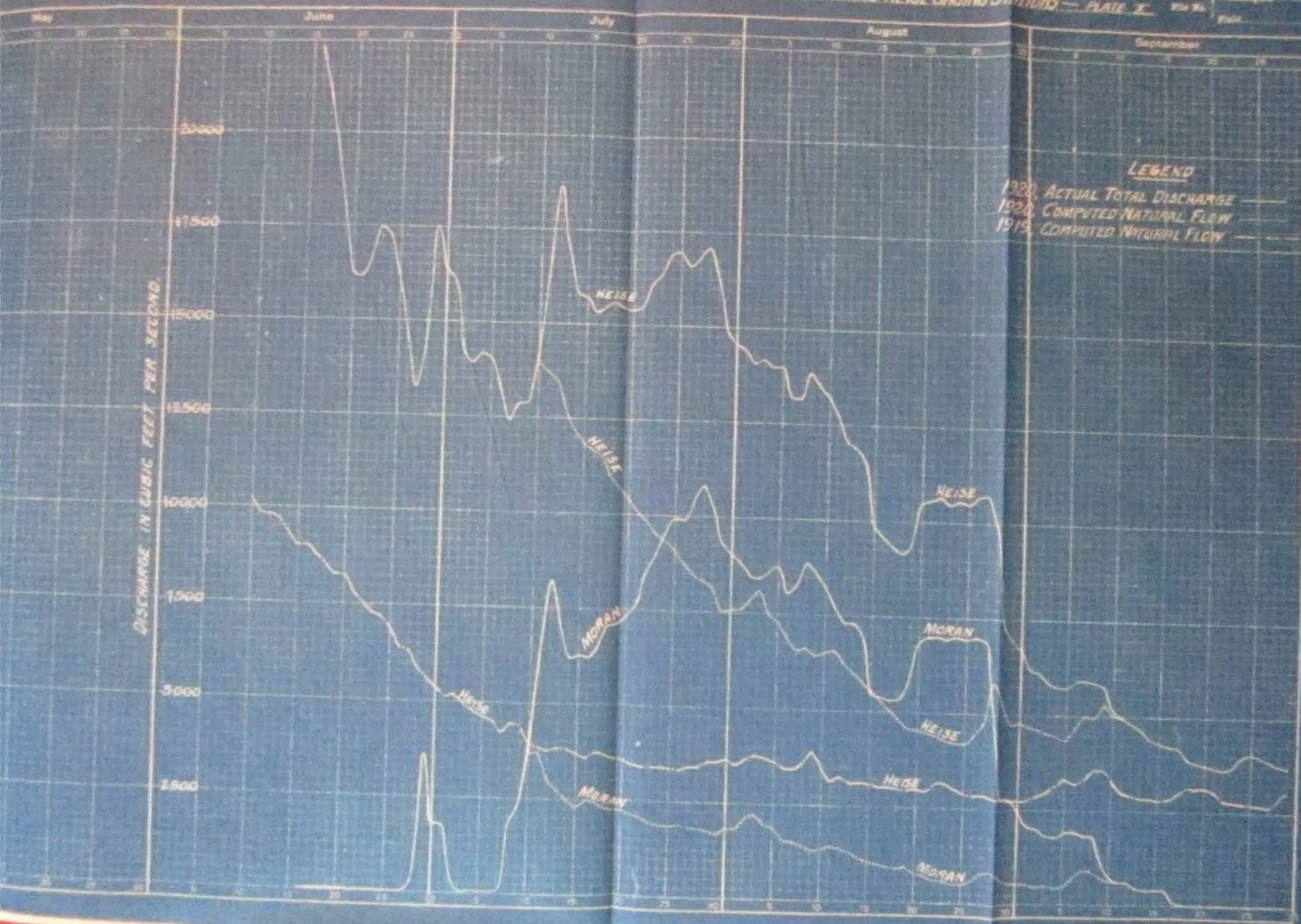
HEISE-WOOD			WOOD	WOODVILLE				HEISE-WOODVILLE				DIY WOOD-PORT			PORT	PORTERVILLE				WOOD-PORT			BLACK RIVER			P-B	BLACK	BLACK		
STD	ZOR	NAT	Tn Bal	GAGE	DISCH	STD	NAT	Tot Gn	Loss	Loss	Gn Net	Total	STD	NAT	Tn Bal	GAGE	DISCH	STD	NAT	Tot Gn	Loss	Gn Net	GAGE	DISC	+PORT	DAYS	Tn Bal	GAGE	DISCH	
915	0	6518	10108	825	10380	7805	2575	272	44	0	316	2871	501	2370	7509	536	7140	6990	150	-369	314	-55	669	352	7492	218	7274	632	7790	66
898	0	6481	9503	812	9910	7524	2586	402	41	0	443	2678	526	2152	7232	529	6890	6540	350	-342	258	-84	565	144	7034	216	6818	622	6710	66
484	0	6415	8512	793	9230	6897	2333	718	37	0	755	2306	339	1967	6924	514	6360	6223	77	-564	275	-289	450	23	6383	211	6172	605	6200	66
392	0	6396	7735	786	8980	6417	2363	1245	35	0	1280	2215	182	2033	6765	512	6300	6075	225	-465	360	-105	450	23	6323	214	6109	601	6200	66
416	0	6843	7669	780	8770	6349	2421	1101	34	0	1135	2592	343	2249	6178	499	5840	5610	230	-338	396	58	440	17	5857	201	5656	584	5710	66
385	0	6896	7431	775	8600	5782	2818	1169	31	0	1200	2618	74	2544	5982	491	5570	5400	170	-412	308	-104	500	62	5632	198	5434	575	5500	66
380	0	6861	7637	776	8630	5655	2975	993	30	0	1023	2803	85	2718	5827	488	5460	5280	180	-367	290	-77	410	5	5465	198	5267	570	5330	66
356	0	6981	7335	771	8460	6096	2364	1125	32	0	1157	2786	687	2129	5674	483	5290	5140	150	-384	299	-85	460	29	5319	188	5131	564	5240	66
378	0	6572	7288	757	7970	5854	2116	682	33	0	715	2788	706	2082	5182	472	4920	4870	50	-262	278	16	505	67	4987	194	4793	532	4770	66
375	0	6232	6656	742	7460	5314	2146	804	32	0	836	2146	-83	2189	5314	480	5190	5100	90	-124	257	133	525	89	5279	207	5072	562	5000	66
1083	0	6428	6363	738	7320	5516	1804	957	33	0	990	1765	1	1764	5555	485	5360	5350	10	-195	165	-30	568	149	5509	202	5307	573	5350	66
949	0	6349	7218	755	7900	6251	1649	682	36	0	718	1704	1	1703	6196	506	6080	6088	-8	-116	162	46	558	133	6213	208	6005	600	6090	66
705	0	5806	7640	768	8350	6334	2016	710	35	0	745	1626	0	1626	6724	517	6470	6182	288	254	152	-102	570	152	6622	202	6420	614	6450	66
592	0	6257	7012	753	7830	6079	1751	818	34	0	852	1613	1	1612	6217	506	6080	5920	160	-137	158	21	540	108	6188	195	5993	597	6020	66
482	0	5569	7325	758	8000	5627	2373	675	31	5	711	1791	0	1791	6209	510	6220	5475	745	11	152	163	512	74	6294	219	6073	604	6300	66
380	15	5671	6662	741	7420	5352	2068	758	29	-5	782	1788	0	1788	5632	486	5400	5304	96	-232	48	-184	535	102	5502	208	5294	575	5300	66
286	0	6669	9714	725	6880	5590	1290	1166	29	6	1201	2118	864	1254	4762	462	4580	4646	-66	-182	80	-102	545	114	4694	201	4493	539	4590	66
-32	17	6691	5553	726	6880	5701	1179	1325	28	-1	1352	2133	815	1318	4747	465	4680	4720	-40	-67	166	99	570	152	4832	215	4617	545	4700	66
-47	7	6646	3952	696	5940	4341	1599	1988	22	7	2017	1889	282	1607	4051	440	3870	3970	-100	-181	89	-92	597	201	4071	196	3875	510	4070	66
-47	20	6685	3580	680	5440	4302	1138	1860	21	-4	1877	1825	764	1061	3615	424	3360	3453	-93	-255	85	-170	572	158	3515	171	3338	482	3380	66
-77	20	6571	3449	671	5170	4327	843	1721	21	-2	1740	1936	785	1151	3234	413	3020	3372	-352	-214	170	-44	565	144	3164	189	2973	462	3000	66
243	0	6324	3209	658	4780	4071	709	1571	22	16	1609	1848	785	1063	2932	404	2750	3105	-355	-182	181	-1	556	130	2880	184	2696	448	2780	66
372	0	6382	3304	656	4720	4446	274	1416	24	15	1455	1816	806	1010	2904	399	2600	3458	-858	-304	182	-122	543	112	2712	181	2531	437	2590	66
419	5	6036	4684	685	5600	5474	126	916	30	9	955	2150	1034	1116	3450	417	3170	4149	-979	-280	291	11	540	108	3278	194	3084	470	3190	66
476	0	5792	5027	701	6100	5594	506	1073	31	14	1118	1754	1008	746	4346	446	4120	4248	-128	-226	338	112	540	108	4228	273	4005	516	4300	66
588	0	5401	5482	712	6460	5604	856	978	31	14	1023	1642	900	742	4818	459	4550	4452	98	-268	252	-16	550	121	4671	209	4462	531	4510	66
583	0	5343	5404	717	6620	5569	1051	1216	31	15	1262	1760	872	888	4860	462	4680	4482	198	-180	215	35	525	89	4769	211	4558	535	4600	66
09	0	5337	5459	719	6690	5686	1004	1231	32	15	1278	1749	854	895	4941	467	4890	4644	249	-51	191	140	510	72	4962	209	4753	502	4750	66
485	0	5308	5559	727	6950	5742	1208	1391	31	14	1436	1706	842	864	5244	477	5260	4803	457	16	97	113	560	136	5396	221	5175	540	5150	66
348	0	5354	5921	740	7390	5835	1555	1469	31	14	1514	1698	859	839	5692	491	5740	4953	787	48	23	71	663	347	6087	213	5874	591	5870	66
258	0	5305	6185	753	7830	5650	2180	1645	30	15	1690	1610	814	796	6220	505	6260	4813	1447	40	23	63	720	488	6748	193	6555	612	6390	66
103	0	4383	6759	759	8040	4084	3956	1281	20	14	1315	1947	0	1547	6493	512	6540	4066	2474	47	18	65	770	617	7157	193	6964	624	6940	66
119	0	4092	4658	722	6790	2184	4606	2132	10	14	2156	1519	0	1519	5271	478	5360	2173	3187	89	11	100	660	340	5700	176	5524	571	5420	66
0	0	3324	4917	712	6460	2156	4304	1543	11	14	1568	1408	0	1408	5052	462	4820	2145	2675	-232	11	-221	667	357	5177	152	5025	558	5110	66
0	0	3426	4639	700	6070	1879	4191	1431	9	13	1453	1614	0	1614	4456	444	4220	1855	2365	-236	24	-212	720	488	4708	156	4552	531	4510	66
0	0	3376	4177	684	5560	1496	4064	1383	8	0	1391	1735	0	1735	3825	425	3610	1430	2180	-215	66	-149	640	293	3903	150	3753	497	3810	66
0	0	3337	4136	676	5320	1433	3832	1184	7	0	1191	1720	0	1720	3600	414	3260	1420	1840	-340	68	-272	600	207	3467	170	3297	477	3420	66
0	0	3229	3982	657	4750	1292	3458	768	6	0	774	1765	0	1765	2985	403	2930	1211	1719	-55	81	26	590	188	3118	157	2961	467	3050	66
0	0	3228	3893	653	4640	1292	3348	747	6	0	753	1765	0	1765	2875	397	2750	1233	1517	-125	59	-66	570	152	2902	166	2736	467	2870	66
0	0	3171	3980	653	4640	1384	3256	660	7	0	667	1703	0	1703	2937	396	2720	1351	1369	-217	33	-184	570	152	2872	158	2717	461	2760	66
0	0	3359	3962	654	4670	1203	3467	708	6	0	714	1788	0	1788	2882	396	2720	1148	1572	-162	55	-107	560	136	2856	155	2701	448	2780	66
0	0	3563	3928	655	4700	919	3781	772	5	0	777	1776	0	1776	2924	398	2780	871	1909	-144	48	-96	562	139	2919	157	2762	446	2850	66
0	0	3621	3840	653	4640	924	3716	800	5	0	805	1746	0	1746	2894	397	2750	885	1865	-144	39	-105	565	144	2894	157	2737	447	2770	66
0	0	3522	3799	649	4520	460	4060	721	2	0	729	1762	0	1762	2758	396	2720	442	2278	-38	18	-20	583	175	2895	157	2738	445	2830	66
0	0	3313	3457	634	4110	94	4016	653	0	0	653	1486	0	1486	2624	389	2510	92	2418	-114	2	-112	610	227	2737	149	2588	440	2730	66
0	0	3442	3178	627	3920	0	3920	742	0	0	742	1428	0	1428	2492	389	2510	0	2510	18	0	18	565	144	2654	156	2498	436	2670	66
0	0	3174	3246	620	3750	0	3750	504	0	0	504																			

TWEEN SNAKE RIVER GAGING STATIONS FROM JACKSON LAKE WYOMING TO MILNER IDAHO

LACKFOOT			PORT-BLACK			Cum Loss STD	Corr Annul STD	DATE 1920	NEELEY				B-N DATE 1920	LAKE WALCOTT			NSMINC		SSMINC		N5-SSMINCAN		MIN		MINIDOKA				
Asc	Std	Nat	Asc	Loss	Std				Asc	Disch	Std	Nat		Gain	Asc	Cap	Ac Ft	Draft	Asc	Disch	Asc	Disch	Total	Std	Nat	In Bal	Asc	Disch	Std
690	6990	100	-184	0	-184	-122	0	30	629	9420	6990	2430	2330	31	4562	102660	60	929	1490	557	997	2487	2487	0	6993	682	6380	3950	2430
640	6540	100	-178	0	-178	-122	0	31	621	9140	6540	2600	2500	Aug 1	4557	102050	308	928	1480	556	994	2474	2474	0	6974	677	6250	3650	2400
620	6120	100	48	163	211	-122	0	Aug 1	606	8610	6120	2490	2390	2	4560	102410	-132	929	1480	558	1000	2480	2480	0	5948	660	5830	3340	2350
120	6020	100	11	55	66	-122	0	2	603	8510	6020	2490	2390	3	4568	103380	-489	929	1490	553	986	2476	2476	0	5545	623	4940	2450	2300
710	5610	100	54	0	54	-122	0	3	593	8180	5610	2570	2470	4	4570	103620	-121	930	1490	552	983	2473	2473	0	5586	636	5240	2670	2250
500	5400	100	66	0	66	-122	0	4	584	7880	5400	2480	2380	5	4567	103260	182	929	1490	559	1000	2490	2490	0	5572	632	5150	2670	2200
380	5280	100	113	0	113	-122	0	5	579	7720	5280	2440	2340	6	4567	103260	0	928	1480	558	1000	2480	2480	0	5240	625	4980	2540	2150
240	5140	100	109	0	109	-122	0	6	576	7620	5140	2480	2380	7	4568	103500	-121	930	1490	564	1020	2510	2510	0	4989	605	4530	2050	2100
970	4870	100	177	0	177	-122	0	7	569	7400	4870	2530	2430	8	4570	103620	-60	911	1440	565	1020	2460	2460	0	4880	603	4490	1960	2050
200	5100	100	128	0	128	-122	0	8	574	7560	5100	2460	2360	9	4581	104940	-666	887	1380	558	1000	2380	2380	0	4514	601	4580	2120	2050
850	5380	100	143	0	143	-122	0	9	581	7880	5350	2530	2430	10	4591	106150	-610	873	1340	552	983	2323	2323	0	4947	634	5200	2670	2050
090	6088	2	85	0	85	-24	-98	10	602	8480	5990	2490	2390	11	4594	106510	-182	872	1340	550	977	2317	2317	0	5981	672	6120	3620	2050
640	6182	258	20	0	20	-24	0	11	612	8820	6182	2638	2580	12	4591	106150	182	868	1330	550	977	2307	2307	0	6695	675	6200	3562	2050
020	5920	100	27	0	27	-24	0	12	603	8510	5920	2590	2490	13	4591	106150	0	847	1270	551	980	2250	2250	0	6260	666	5980	3390	2050
190	5475	715	115	0	115	-24	0	13	606	8610	5475	3135	2420	14	4585	105430	363	860	1300	549	974	2274	2274	0	6699	660	5830	2695	2050
500	5304	196	206	0	206	-120	96	14	591	8110	5400	2710	2610	15	4577	104460	489	870	1330	546	965	2295	2295	0	6304	640	5340	2630	2100
690	4646	44	197	0	197	-64	-56	15	567	7330	4590	2740	2640	16	4559	102290	1094	868	1330	548	971	2301	2301	0	6123	635	5220	2480	2100
320	4720	100	203	0	203	-64	0	16	571	7460	4720	2740	2640	17	4541	100130	1089	865	1320	547	968	2288	2288	0	6261	639	5320	2580	2100
070	3970	100	195	0	195	-64	0	17	550	6800	3970	2830	2730	18	4518	97350	1402	867	1320	547	968	2288	2288	0	5914	640	5340	2510	2100
520	3453	67	182	0	182	-31	-33	18	528	6130	3420	2710	2610	19	4486	93550	1916	867	1320	544	960	2280	2280	0	5766	643	5410	2700	2100
140	3372	-232	165	0	165	301	332	19	515	5740	3040	2700	2600	20	4450	89360	2112	865	1320	543	962	2282	2282	0	5570	639	5320	2620	2100
880	3105	-225	184	0	184	626	325	20	505	5460	2780	2680	2580	21	4422	86100	1644	890	1380	543	962	2342	2342	0	4762	612	4690	2010	2050
690	3458	-768	159	0	159	1494	-868	21	500	5310	2590	2720	2620	22	4404	84010	1054	905	1420	546	965	2385	2385	0	3979	584	4120	1400	2100
290	4149	-859	206	0	206	2453	-959	22	505	5460	3190	2270	2170	23	4395	82980	319	908	1430	546	965	2395	2395	0	3584	592	4380	2110	2100
200	4248	-48	195	0	195	2601	-148	23	535	6340	4100	2240	2140	24	4395	82980	0	911	1440	531	922	2362	2362	0	3978	596	4330	2090	2100
510	4452	58	48	0	48	2649	-42	24	551	6830	4410	2420	2320	25	4396	83090	-55	924	1470	531	922	2392	2392	0	4383	595	4310	1890	2100
600	4482	118	42	0	42	2625	18	25	555	6960	4500	2460	2360	26	4413	85050	-988	922	1470	533	928	2398	2398	0	3574	594	4290	1830	2100
750	4641	109	-3	0	-3	2616	9	26	564	7240	4650	2590	2490	27	4433	87380	-1175	864	1320	514	877	2197	2197	0	3268	584	4120	1530	2090
150	4803	347	-25	0	-25	2609	247	27	574	7560	5050	2510	2410	28	4465	91110	-1821	812	1180	505	855	2035	2035	0	3644	595	4310	1800	2090
870	4938	932	-4	15	11	1537	832	28	599	8380	5770	2610	2510	29	4503	95550	-2238	761	1060	491	818	1878	1878	0	4264	583	4050	1440	2090
390	4799	1591	-65	14	-151	46	1491	29	614	8290	6290	2600	2500	30	4552	101450	-2975	669	844	462	742	1586	1586	0	4329	591	4220	1620	2090
690	4013	2677	-274	53	-221	0	46	30	624	9240	4059	5181	2550	31	4587	105670	-2128	679	866	439	684	1550	-176	1726	5362	601	4240	925	2055
400	2103	3297	-124	70	-54	0	0	31	587	7980	2103	5877	2580	Aug 1	4595	106630	-484	707	928	429	661	1589	-137	1726	5907	643	5410	1259	2151
110	2079	3031	85	66	151	0	0	31	574	7560	2079	5481	2450	2	4598	106990	-182	707	928	416	628	1556	-170	1726	5822	646	5480	1725	2155
510	1851	2659	-42	4	-38	0	0	2	558	7050	1851	5199	2540	3	4598	106990	0	707	928	443	697	1625	-101	1726	5425	621	4890	1417	2173
810	1430	2380	57	0	57	0	0	3	537	6400	1430	4970	2590	4	4594	106510	242	766	1070	459	740	1810	240	1570	4832	593	4380	980	2400
420	1420	2000	123	0	123	0	0	4	521	5920	1420	4500	2500	5	4589	105910	302	820	1200	475	783	1983	883	1100	4239	594	4290	890	2400
050	1211	1839	89	0	89	0	0	5	507	5510	1211	4299	2460	6	4582	105070	423	826	1220	479	794	2014	1115	899	3919	583	4160	760	2400
870	1233	1637	134	0	134	0	0	6	503	5400	1233	4167	2530	7	4571	103740	670	826	1220	477	788	2008	1241	767	4062	583	4050	650	2400
760	1351	1409	43	0	43	0	0	7	500	5310	1351	3959	2550	8	4560	102410	670	796	1140	477	788	1928	1369	559	4052	521	4010	610	2400
780	1148	1632	79	0	79	0	0	8	497	5230	1148	4082	2450	9	4554	101930	242	739	1000	477	788	1788	1106	682	3684	576	3910	510	2400
850	871	1979	88	0	88	0	0	9	499	5280	871	4409	2430	10	4553	101570	182	718	953	476	785	1738	729	1009	3724	573	3840	440	2400
870	325	1985	133	0	133	0	0	10	502	5370	385	4485	2500	11	4560	102410	-423	718	953	450	716	1669	584	1085	3278	544	3270	-130	2400
130	442	2388	92	0	92	0	0	11	501	5340	442	4898	2510	12	4572	103860	-731	719	956	442	695	1651	153	1498	2858	524	2900	-500	2400
240	92	2648	152	0	152	0	0	12	496	5200	92	5108	2460	13	4577	104460	-302	719	956	441	692	1643	-60	1708	3250	544	3270	-130	2400
570	0	2670	172	0	172	0	0	13	494	5140	0	5140	2470	14	4582	105070	-308	721	960	441	692	1652	-74	1726	3180	534	3080	-334	2400
180	0	2480	119	0	119	0	0	14	486	4920	0	4920	2440	15	4580	104820	126	749	1030	448	710	1740	220	1520	3306	549	3360	-40	2400
260	0	2260	30	0	30	0	0	15	478</																				

DISCHARGE IN CUBIC FEET PER SECOND.

LEGEND
 1920, ACTUAL TOTAL DISCHARGE
 1920, COMPUTED NATURAL FLOW
 1919, COMPUTED NATURAL FLOW



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.

The fluctuations in the natural flow at these two stations are very clearly shown on this plate and will be of special interest not only in connection with discussions which have preceded but also with those which follow.

TWO OCEAN LAKE STORAGE DELIVERIES.

From August 10-30 stored water was released from the small reservoir which has been created by damming the outlet of Two Ocean Lake near Moran, Wyoming. This water was allowed to flow down the natural channel of the river in the same way as that from Jackson Lake reservoir and was to have been diverted and pumped into the Osgood Canal of the Utah-Idaho Sugar Company, a new canal located about 9 miles upstream from Idaho Falls. A total of 567 acre-feet was released during this period under orders to maintain a constant flow of 15 second-feet. Because of canal breaks or other difficulties the Osgood pumps were not operated continuously, so that when proper allowance was made for natural flow rights less than half of the storage released from the reservoir was actually utilized at the lower point.

The daily storage deliveries to this canal are shown at the top of Plate XI.

JACKSON LAKE STORAGE DELIVERIES.

The amount of stored water released each day from Jackson Lake

RIES

18	19	20	21	22	23	24	25	26	27	28	29	30	31	SEPT 1	2	3	4	5	6	7	8	9	10	11	12	13
20	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

RIES

18	19	20	21	22	23	24	25	26	27	28	29	30	31	SEPT 1	2	3	4	5	6	7	8	9	10	11	12	13
14	12	15	14	10	7	8	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	9	8	0	0	0	23	33	55	58	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	8	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	20	21	19	20	18	20	21	21	21	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	16	28	27	25	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
60	64	68	68	70	68	57	53	58	54	36	14	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	42	114	116	115	27	30	2	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	95	145	146	140	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-200	135	207	202	259	267	234	270	183	187	187	-119	-142	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	16	72	294	284	188	168	140	130	147	136	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
769	769	732	740	724	712	704	714	712	712	678	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	2	1	2	1	2	1	2	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1181	431	70	501	608	754	1643	2122	2312	2197	2035	1878	1586	0	0	437	412	121	0	0	0	0	0	0	0	53	12
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
291	272	458	477	413	388	785	802	653	627	473	594	485	575	241	334	0	0	0	0	0	0	0	0	0	0	0
2169	2517	2531	2493	1866	1594	1651	1655	1635	1561	1525	1586	1624	1606	1638	1769	1642	1439	1069	1066	1110	1104	1097	1062	871	885	236
10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	0	6	6	6	6	6	6	6	6	6	6	6
7	5	5	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2452	2502	2516	2478	1851	1584	1641	1645	1625	1551	1515	1576	1614	1596	1628	1769	1636	1433	1063	1060	1104	1098	1091	1056	865	879	230

RIES

18	19	20	21	22	23	24	25	26	27	28	29	30	31	SEPT 1	2	3	4	5	6	7	8	9	10	11	12	13
1107	1849	2212	1841	1777	1641	719	270	86	0	0	0	0	-176	-137	-170	-101	0	529	1014	1112	1115	1020	729	584	0	-60
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8	11
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18	-17	-28	-18	2	54	43	-14	-59	-39	-131	-12
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	0	0	0	0	0	0	0	142	105	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	142	105	0

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 compensated by short period interpolations.

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. Natural 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 these several factors, however, the method heretofore followed appears to be the most practicable which can be devised.

Below the Moran gaging station stored water losses were determined and applied in exactly the same manner as during the season of 1919,* viz., $2\frac{1}{2}$ per cent between the Moran and Heise stations and computed losses based upon the average of the two preceeding days between the Heise and Woodville and between the Woodville and Blackfoot stations, with minimum loss in each of the two latter sections never less than one-half of one per cent.

* Pages 27 and 28, Water Distribution and Hydrometric Work in District No. 36, 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. Since there was a net gain in the flow of the river between the Heise and Woodville stations on each day throughout the 1920 storage delivery period, the loss in this section was always computed at one-half of one per cent and since the $2\frac{1}{2}$ per cent from Moren to Heise was always constant, 97.0125 per cent of the stored water released at Jackson Lake for these upper valley canals should have been delivered to their head gates.

Storage released for the Minidoka and Twin Falls canals was charged with pro rata losses to the Blackfoot gaging station and while the percentage varied somewhat during the season, the total transmission loss averaged 7.017 per cent; hence delivery to these canals should have been upon the basis of 92.983 per cent of the amounts released from Jackson Lake.

It will be noted that the losses for each of these groups amount to only about one half of those noted for the season of 1919. This fact is explainable chiefly by the larger return flow noted during 1920 between the Heise and Blackfoot gaging stations. The greater part of this increase in return flow is attributable to the more favorable ground water conditions to be expected during a year of nearly normal water supply, but some of it undoubtedly is due to increased surface waste back to the river from some of the upper valley canal systems.

The surface return flow might of course be measured, in which case proper corrections could be applied. This possibility was dis-

cussed with the members of the water users advisory committee but since it appeared that the expense of the additional work involved would be disproportionate to the benefits to be derived another plan was adopted under which the entire inflow from Blackfoot River was credited to the upper valley canals. The flow of Blackfoot River at its mouth varies considerably and in much the same way as the waste from the upper canals. Both are practically negligible during prolonged periods of general water shortage while increases in both will probably be noted when the water supply is more plentiful and irrigation methods consequently less efficient. Some justification therefore exists for this counter-balancing arrangement in addition to the material saving in the work and expense of distribution which was effected. Whether or not the arrangement is reasonably fair to all concerned, however, depends largely upon the average amount of the surface return or waste entering Snake River between the Woodville and Blackfoot gaging stations and upon the proportion of the inflow from Blackfoot River which may be considered as excess diversion through the Reservation Canal.

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 or transferred for delivery through other canals, both the parties owning the right and those receiving the water are indicated in the first column.

Minus quantities in the table represent credits for natural flow delivered in lieu of, and later repaid from stored water as explained on pages 12 and 13 of this report.

Although in 1919 practically every Jackson Lake storage right was fully utilized, many were not exhausted during 1920.

The summaries at the end of the table are rather difficult to understand in some cases, because of the sales and exchanges previously mentioned and also on account of the complication of Lake Walcott deliveries and adjustment charges, which will be later discussed. The following notes concerning deliveries to the upper valley canals will perhaps be of assistance:

Poplar Irrigation District: The Riley Canal which supplies this district experienced several breaks during the season which prevented the acceptance of all the stored water which had been ordered.

Farmers Friend Canal Company: This company used all but 215 acre-feet of their Jackson Lake right and authorized the transfer of this unused balance to the Enterprise Canal.

Enterprise Canal Company: Some of the land under this canal could be better served through the Eagle Rock and Willow Creek Canal of the Progressive Irrigation District; hence, with the consent of the latter, part of the Enterprise storage was delivered in this way. The decreed rights of the Enterprise Canal are of comparatively recent date and hence are among the earliest to become invalid during any period of shortage in the natural flow. During 1920, however, this company received so much water through temporary transfers that it was possible to conserve their storage right and at the end of the season 1,772 acre-feet in addition to the 215 acre-feet transferred from the Farmers Friend Canal still remained to their credit at Jackson Lake.

Harrison Canal Company: The Harrison Canal also received a large amount of water through temporary transfers and on this account, even though some storage was sold to the Woodville Canal, closed the season with a large unused stored water balance.

Rudy Canal Company: Meter measurements secured during September indicated that an unexpected change of rating had occurred at this canal since the last previous measurement. In the final computations this change was prorated over the entire period which had elapsed between measurements. This resulted in a decreased draft from that shown by the summer computations and accounts for the apparent under-delivery of storage.

Burgess Canal Company: Practically the entire storage right of this company was utilized.

Lenroot Canal Company: Conditions for rating and regulating this canal during the season were very poor. The final computations show a slight underdelivery of storage but it is doubtful whether these figures are much better than those obtained from the summer computations which show a complete storage delivery.

All of the remaining canals in the upper valley owning storage rights in Jackson Lake closed the season with an unused balance to their credit.

The large apparent underdelivery to the Twin Falls Canal Company is due almost entirely to the excess discharges at the Neeley station shown by the final computations based on the recording gage records over those prepared from the single daily readings which were used during the operation period.

Beginning September 20 and continuing for the balance of the irrigation season the natural flow was more than sufficient to supply the demands of the Milner canals, and water in excess of normal leakage was wasted past the Milner dam. Normal wastage past this dam was charged against the two large Twin Falls canal companies in proportion to their relative ownership of the Milner dam, viz., 5/11 to the North Side canals and 6/11 to the South Side canal. All such charges are included in the quantities shown on Plate XI.

. LAKE WALCOTT STORAGE DELIVERIES.

Before undertaking to discuss the adjustments which apply to the Minidoka and Milner canals it seems advisable to call attention to the Lake Walcott Storage Delivery table which is shown at the bottom of Plate XI.

All storage deliveries from Lake Walcott during the season of 1920 were made upon the basis of storage at Jackson Lake and with the excep-

tion of small amounts to Gooding parties, to the Hillsdale Irrigation District and to the Murtaugh Canal or irregularities after September 15, all were repaid from Jackson Lake rights. In order to balance all amounts properly, however, it is necessary to include this table which takes into account the net gain in flow between the Neeley gaging station and Milner dam.

There were no Lake Walcott deliveries to any of the Milner canals during the period from July 15 to September 1 inclusive. Figures for the period from July 10 to 14 show deliveries either in excess of or below the quantities to which the respective canals were entitled from natural flow prior to the arrival of Jackson Lake storage. Distribution to the Minidoka and Milner canals during this period was outlined in a special agreement executed by the parties at interest.

The small plus or minus Lake Walcott charges against the two largest Milner or Twin Falls canals noted from September 1 to 15 may be considered as due to unavoidable irregularities of distribution and are inserted in this table simply to show a proper balancing of quantities.

After September 15 when the services of the deputy water masters were terminated, all distribution to the Milner canals was by mutual agreement and not in accordance with any orders from the water master or special deputy at Idaho Falls.

MINIDOKA AND MILNER ADJUSTMENTS.

Equitable distribution to all the lower valley canals without wastage past Milner dam was made especially difficult during the major part of the irrigation season because of the heavy demand for power

generated at the Minidoka plant of the U. S. Reclamation Service. In order to supply this power all the head which could be obtained was needed; hence the allowable variation in the stage of Lake Walcott was limited to a range of 5,000 acre-feet in capacity, from a gage height of 45.75 feet down to one of about 45.33 feet. This limitation largely nullified the use of Lake Walcott as a catch basin or equalizing reservoir and made it necessary to regulate the flow of the river almost entirely from Jackson Lake about 300 miles upstream from the Milner dam. So many factors affect the flow of the stream between these two points that exact control could not be expected, and on this account the lower valley canals were asked to come to some agreement as to the way in which unavoidable waste past Milner dam should be charged.

An agreement of this character was prepared and submitted in the form of a letter on July 27. It provides essentially that what might be termed extraordinary waste past Milner dam or waste due to faulty regulation should be prorated between the Minidoka and Milner canals in proportion to their respective seasonal diversions of stored water, while any waste which could be attributed to individual canals as a result of failure through canal breaks or other causes to take storage ordered, should be charged against the individual canals.

Another agreement dated July 9 provided for the adjustment of deliveries during the period July 10 to 14 (Milner dates) when, because of the delay in releasing the first storage from Jackson Lake it was necessary to reduce deliveries to the Milner canals somewhat and also to draw upon Lake Walcott.

In the actual operation during the storage delivery period wastage past Milner dam exceeded the normal amount on only two days; July 17,

MINIDOKA AND MILNER STORAGE CHARGE ADJUSTMENTS ON ACCOUNT OF DEFICIENCIES OVERD

ADJUSTMENTS FOR DEFICIENCIES EXISTING PRIOR TO THE TIME ALL THE RIGHTS WERE FILLED

DATE 1920	USRS MINIDOKA CANALS			TOTAL EXCESS CHARGED	DISTRIBUTION MINIDOKA EXCESS STORAGE DELIVERY CHARGE						NECESSARY CORRECTION				
	STORAGE DELIVERED	ORDERED	EXCESS CHARGED		USRS MINIDOKA		SS TWIN FALLS		NS TWIN FALLS		USRS MINIDOKA		SOUTH SIDE		
					PART	AMOUNT	PART	AMOUNT	PART	AMOUNT	EXC CHGD	AGRD SHARE CORRECTION	EXC CHGD	AGRD SHARE	
JULY 9	-49	0	-49	-49	0%	0	19/80	-12	61/80	-37	-49	0	+49	0	-
" 10	728	0	728	728	0%	0	19/80	173	61/80	555	728	0	-728	0	1
" 11	743	0	743	743	0%	0	19/80	176	61/80	567	743	0	-743	0	1
" 12	743	0	743	743	0%	0	19/80	177	61/80	566	743	0	-743	0	1
" 13	761	0	761	761	0%	0	19/80	181	61/80	580	761	0	-761	0	1

ADJUSTMENTS FOR OVERDELIVERIES TO THE TWIN FALLS CANALS

DATE 1920	SOUTH SIDE TWIN FALLS			NORTH SIDE TWIN FALLS			TOTAL EXCESS DELIVERED	DISTRIBUTION MILNER EXCESS STORAGE DELIVERY						NECESSARY CORRECTION			
	STOR DELD	ORDERED	EXCESS	STOR DELD	ORDERED	EXCESS		USRS MINIDOKA		SS TWIN FALLS		NS TWIN FALLS		USRS MINIDOKA		SOUTH SIDE TWIN FALLS	
								PART	AMOUNT	PART	AMOUNT	PART	AMOUNT	EXC CHGD	AGRD SHARE CORRECTION	EXC CHGD	AGRD SHARE
AUG 11	1108	778	330	2531	2508	23	353	40%	141	16%	56	44%	156	0	141	+141	330
" 12	1387	827	560	2653	2520	133	693	40%	67 3/8	16%	3	44%	9	0	681	+681	560
" 13	1250	690	560	2722	2515	207	767	40%	307	16%	123	44%	337	0	307	+307	560
" 14	1156	726	430	2692	2510	182	612	40%	245	16%	98	44%	269	0	245	+245	430
" 15	285	245	40	2566	2509	57	97	40%	39	16%	16	44%	42	0	39	+39	40
SEPT 1	241	0	241	1628	1000	628	869	40%	348	16%	139	44%	382	0	348	+348	241
" 2	352	0	352	1772	1000	772	1124	40%	449	16%	180	44%	495	0	449	+449	352
" 3	-17	0	-17	1636	1000	636	619	40%	248	16%	99	44%	272	0	248	+248	-17
" 4	-28	0	-28	1433	1000	433	405	40%	162	16%	65	44%	178	0	162	+162	-28

ADJUSTMENTS FOR EXTRAORDINARY WASTE OVER MILNER

DATE 1920	WASTE OVER MILNER DAM			TOTAL EXTRA WASTE	DISTRIBUTION EXTRAORDINARY MILNER WASTE						NECESSARY CORRECTION				
	TOTAL WASTE	ORDINARY	EXTRAORDINARY		USRS MINIDOKA		SS TWIN FALLS		NS TWIN FALLS		USRS MINIDOKA		SOUTH SIDE TWIN FALLS		
					PART	AMOUNT	PART	AMOUNT	PART	AMOUNT	EXC CHGD	AGRD SHARE CORRECTION	EXC CHGD	AGRD SHARE	
JULY 17	329	29	300	300	40%	120	16%	48	44%	132	0	120	+120	0	-
SEPT 2	533	22	511	511	40%	204	16%	82	44%	225	0	204	+204	0	-

*CHARGED ON PLATE XI AS STORED IN WALCOTT

NET TOTAL CORRECTION TO ACTUAL DELIVERY CHARGES

+18

REFERENCE NOTES

- a, SEE LETTER OF AGREEMENT DATED JULY 9, 1920, SIGNED BY JCY WHEELON RE
 - b, SEE LETTER OF AGREEMENT DATED JULY 27, 1920, SIGNED BY BARRY DIBBLE
 - c, INDIVIDUAL CHARGE AGAINST NORTH SIDE MINIDOKA CANAL ACCOUNT FAILURE.
- ALL QUANTITIES ARE LISTED IN SECOND FEET

CHARGE ADJUSTMENTS ON ACCOUNT OF DEFICIENCIES OVER DELIVERIES AND EXTRAORDINARY WASTE

EXISTING PRIOR TO THE TIME ALL THE RIGHTS WERE FILLED FROM JACKSON LAKE STORAGE ✓

AL	DISTRIBUTION MINIDOKA EXCESS STORAGE DELIVERY CHARGE						NECESSARY CORRECTION TO ACTUAL DELIVERY CHARGES								
	USRS MINIDOKA		SS TWIN FALLS		NS TWIN FALLS		USRS MINIDOKA			SOUTH SIDE TWIN FALLS			NORTH SIDE TWIN FALLS		
	PART	AMOUNT	PART	AMOUNT	PART	AMOUNT	EXC CHGD	AGRD SHARE	CORRECTION	EXC CHGD	AGRD SHARE	CORRECTION	EXC CHGD	AGRD SHARE	CORRECTION
-49	0%	0	19/80	-12	61/80	-37	-49	0	+49	0	-12	-12	0	-37	-37
728	0%	0	19/80	173	61/80	555	728	0	-728	0	173	+173	0	555	+555
743	0%	0	19/80	176	61/80	567	743	0	-743	0	176	+176	0	567	+567
743	0%	0	19/80	177	61/80	566	743	0	-743	0	177	+177	0	566	+566
761	0%	0	19/80	181	61/80	580	761	0	-761	0	181	+181	0	580	+580

ADJUSTMENTS FOR OVERDELIVERIES TO THE TWIN FALLS CANALS ✓

AL	DISTRIBUTION MILNER EXCESS STORAGE DELIVERY						NECESSARY CORRECTION TO ACTUAL DELIVERY CHARGES								
	USRS MINIDOKA		SS TWIN FALLS		NS TWIN FALLS		USRS MINIDOKA			SOUTH SIDE TWIN FALLS			NORTH SIDE TWIN FALLS		
	PART	AMOUNT	PART	AMOUNT	PART	AMOUNT	EXC CHGD	AGRD SHARE	CORRECTION	EXC CHGD	AGRD SHARE	CORRECTION	EXC CHGD	AGRD SHARE	CORRECTION
353	40%	141	16%	56	44%	156	0	141	+141	330	56	-274	23	156	+133
693	40%	673	16%	3	44%	9	0	681	+681	560	3	-557	133	9	-124
767	40%	307	16%	123	44%	337	0	307	+307	560	123	-437	207	337	+130
612	40%	245	16%	98	44%	269	0	245	+245	430	98	-332	182	269	+87
97	40%	39	16%	16	44%	42	0	39	+39	40	16	-24	57	42	-15
869	40%	348	16%	139	44%	382	0	348	+348	241	139	-102	628	382	-246
124	40%	449	16%	180	44%	495	0	449	+449	352	180	-172	772	495	-277
619	40%	248	16%	99	44%	272	0	248	+248	-17	99	+116	636	272	-364
405	40%	162	16%	65	44%	178	0	162	+162	-28	65	+93	433	178	-255

ADJUSTMENTS FOR EXTRAORDINARY WASTE OVER MILNER DAM ✓

AL	DISTRIBUTION EXTRAORDINARY MILNER WASTE						NECESSARY CORRECTION TO ACTUAL DELIVERY CHARGES											
	USRS MINIDOKA		SS TWIN FALLS		NS TWIN FALLS		USRS MINIDOKA			SOUTH SIDE TWIN FALLS			NORTH SIDE TWIN FALLS			STORED IN WALCOTT		
	PART	AMOUNT	PART	AMOUNT	PART	AMOUNT	EXC CHGD	AGRD SHARE	CORRECTION	EXC CHGD	AGRD SHARE	CORRECTION	EXC CHGD	AGRD SHARE	CORRECTION	EXC CHGD	AGRD SHARE	CORRECTION
300	40%	120	16%	48	44%	132	0	120	+120	0	48	+48	0	132	+132	300	0	-300
511	40%	204	16%	82	44%	225	0	204	+204	0	82	+82	0	225	+225	511	0	-511
CHARGES									+18				-864					+1657

LETTER OF AGREEMENT DATED JULY 9, 1920, SIGNED BY J.C. WHEELON, RE. SHEPHERD, AND BARRY DIBBLE.
 LETTER OF AGREEMENT DATED JULY 27, 1920, SIGNED BY BARRY DIBBLE.
 INDIVIDUAL CHARGE AGAINST NORTH SIDE MINIDOKA CANAL ACCOUNT FAILURE TO ACCEPT ALL STORAGE ORDERED AUGUST 9-12
 QUANTITIES ARE LISTED IN SECOND FEET

when this excess amounted to 300 second-feet, and September 2, when it totaled 511 second-feet. During two other periods, however, August 11 to 15 and September 1 to 4 respectively, the Milner canals accepted deliveries in excess of the quantities ordered, and as they claimed this excess could not be fully utilized, it seemed proper to consider the over-deliveries during these periods as unavoidable waste and prorate the charges accordingly.

All these adjustment charges are shown in detailed form in the tables on Plate XII, while the net total seasonal correction to actual delivery charges is indicated both at the bottom of the detail tables on this plate and also in the adjustment column on Plate XI.

Charges against individual canals because of failure to accept storage ordered are shown by notes on either Plate XI or Plate XII.

In computing storage deliveries, the small quantities sold by the U. S. Reclamation Service to Gooding parties, to the Hillsdale Irrigation District and to the Murtaugh Canal were included with the Minidoka diversions. Except to this extent, these small seasonal rights were eliminated from the readjustment of charges entirely. This arrangement is perhaps not strictly in accordance with the original agreement, but is believed to be justified in view of the almost negligible changes which would result from their inclusion in all readjustments.

RIVER LOSSES AND GAINS.

Losses and gains throughout different sections of Snake River are included in the data contained on Plates 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 XIII 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 general characteristics of these graphs are similar to those shown on Plate XI of the 1919 report and are probably subject to the same explanations. For example, we note the same tendency toward increased losses coincident with sharp increases in the river stage, while decreased losses or increased gains accompany rapid drops in the river.

The fact that 1920 losses are smaller than those for the preceding year and that gains from return flow are larger has already been mentioned.

The decreased demand for water following and coincident with the rains which began about August 25 is reflected in the difference between the shape of the Heise hydrograph and those for the two lower stations. Breaks in the Idaho Canal account for the peaks noted at the two lower stations on August 9 and 11 (Heise dates).

No attempt has been made in the diagrams to segregate the losses between Woodville and Blackfoot into two sections as might be done by the insertion of the records from the Porterville station, but the complete data are included on Plates VIII and IX.

Because of the higher river stages which existed throughout the summer of 1920 it was not practicable to continue the study of losses on short intermediate sections of the river in the manner followed during the latter part of the 1919 season.

Plate XIV contains graphs similar to those shown on Plate XIII, but covering the section between the Blackfoot and Neeley gaging stations. Neeley dates are here used. The average net gain indicated amounts to a little more than 2,400 second-feet, a slight increase over the mean for the previous year. This is consistent with other comparisons heretofore noted and should require no further comment.

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

The Lake Walcott graph shows at a glance how well the stage of this reservoir was maintained until after the middle of August when authority was granted, because of decreased power demands, to lower the water surface below the stage of 45.33 feet which had previously been given as a minimum. Prior to August 19 the lake water surface was below this minimum only on three days and then fell short by less than 0.2 foot. The increased stage noted during the latter part of August is attributable to the rains and decreased irrigation demands throughout the upper valley which have previously been referred to. These factors so increased the natural flow available to the Minidoka and Twin Falls canals that less storage was required to fill their

needs and as this storage was already en route from Jackson Lake, it was stored in Lake Walcott. Had the lake not been drawn down just before this time, a much larger unavoidable waste past Milner dam would have resulted.

The fluctuations in both lakes were much less pronounced than those during 1919 and doubtless, largely on this account, the loss curves show less consistent relationship. Attention is called, however, to the decreased loss between Neeley and Minidoka which coincides with the rapid drop in Lake Walcott from August 15 to 23. Some of the sharp changes noted in the loss curves for individual days can only be accounted for on the basis of the effect of wind on the two lakes. June 22 (Minidoka dates) affords a good example. Weather Bureau records for the Jerome station show one of the strongest wind movements during the month on June 23 and this date would correspond to June 22 at Minidoka.

From June 5 to September 22 (Minidoka dates) there was an average net loss between Neeley and Minidoka of 302 second-feet, while during the corresponding period there was an average net gain of 323 second-feet between Minidoka and Milner, or an average net gain for the entire section from Neeley to Milner of 21 second-feet. During the so-called stored water period from July 9 to September 18 (Minidoka dates) these quantities averaged as follows: Neeley to Minidoka 193 second-feet loss, Minidoka to Milner 372 second-feet gain and Neeley to Milner 179 second-feet gain.

Because of the small changes in the water surface elevation and the lack of any dependable capacity tables, no account has been taken in this report of the effect of Lake Milner storage.

Fluctuations at Lake Walcott were too small and of too short a duration to warrant making any study of bank storage.

DISTRIBUTION OF NATURAL FLOW ORIGINATING FROM HENRYS FORK AND TRIBUTARIES.

While the distribution of water originating above the so-called Rexburg gaging station on Haavys (North) Fork is not as yet complicated by storage delivery problems, the construction of two or three large reservoirs in the upper parts of the drainage area may be expected in the near future. In anticipation of some of the problems which will then arise, as well as for the purpose of affording more complete data upon which to base the distribution during the irrigation season, several new gaging stations were established early in the spring of 1920 in this portion of the district.

Later E. C. Howard who was hydrographer in this section during 1919, was appointed Deputy Water Master and placed in direct charge of all distribution above the Rexburg gaging station, subject only to general supervision and instructions from the Idaho Falls office.

An office was opened in the Wilcox Implement Warehouse at St. Anthony on June 1 and was thereafter, until September 15, maintained as headquarters for the local distribution.

W. F. Dawson was employed to act both as hydrographer and deputy water master for Teton River and canals diverting therefrom. Mr. Howard attended in person to the hydrometric work in the Henrys Fork and Fall River sections in addition to his other duties, while George Pincock and Martin Luetjen acted as deputy water masters on these streams. Mrs. E. C. Howard was employed upon a part time basis as clerk in the St. Anthony office.

This reorganization of the work with the added personnel employed, made possible a much more equitable distribution throughout this entire area than could ever have been obtained under the old systems hereto-

fore in use.

The following data concerning the work in the Henrys Fork, Fall and Teton River territory is abstracted from a brief report, prepared by Mr. Howard:

Daily reports were prepared and forwarded to the Idaho Falls office beginning June 8, and by June 20 sufficient hydrometric data had been obtained to define such changes of rating as had occurred since 1919 and make the data very dependable.

Because of capacity limitations the order to cut all canals to their record rights which became effective June 28 affected only a few canals in this area.

The discharge of the three streams which furnish the water supply continued to decrease after July 1, and by July 13 a slight shortage in the amount available to fill the right of the Consolidated Farmers Canal (the last canal diverting from Henrys Fork) was noted. Because of the early irrigation practiced and the abundant supply heretofore available, all lands were well watered and in good shape at this time, and on this account the sentiment of the water users appeared to be favorable to making up deficiencies through a voluntary percentage cut of all rights rather than by strict adherence to decrees. Consequently, with the agreement of the President of the Consolidated Farmers Canal, no action to remedy the shortage was taken until July 15, when a general meeting of all water users was convened at St. Anthony. At this meeting an agreement was reached to authorize cutting all canals as rapidly as might be required to make up deficiencies until a maximum decrease of 20 per cent was reached. John Fisher, Andrew Swendsen and Geo. Humsey were appointed as a committee to assist in proportioning these cuts. The latter were ordered on the morning of July 16 and additional water reached the last canal that evening. Distribution continued upon this basis for a period of about nine days, at the end of which time the full 20 per cent reduction was no longer sufficient to make up the shortage. Distribution thereafter was in accordance with decreed priorities, and all canals having a priority date subsequent to June 14, 1895, were ordered cut on July 25.

Beginning July 27 and continuing for the balance of the season regulation in this area was governed by lower river conditions and corresponded to orders received from the Idaho Falls office. This meant that rights in this section had to be cut to supply older priorities farther down on Snake River.

Domestic water allowances were eliminated following the decision reached at the meeting held in Idaho Falls on July 31, but in lieu thereof arrangements were made early in August to supply the most urgent needs of this character through temporary transfers. The water for these transfers was secured from the older rights, was pooled and then apportioned through a special water users committee composed of Geo. Harrigfeld, Wm. Lavery and John Fisher. This plan, which was evolved largely through the suggestions of John Empey, Water Master for District No. 36, who visited St. Anthony at this time, proved very successful and tended to eliminate sectional difficulties.

During September the demand for water decreased and very little regulation was necessary. The St. Anthony office was closed and the personnel reduced on the night of September 15. During the latter part

DAILY DISCHARGE IN SECOND FEET OF CANALS DIVERTING FROM HENRYS FORK AND TRIBUTARIES FOR JUNE 1920

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
YELLOWSTONE	0	3	6	14	18	18	20	20	24	32	32	34	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	
HARRISFIELD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
FRANKS OWN	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	
INTERCOURSE	120	116	114	114	128	137	141	140	140	140	148	148	144	138	138	160	164	160	156	156	156	156	156	156	156	156	156	156	156	156	
FALL RIVER	373	409	428	437	510	472	426	426	426	463	463	449	449	449	463	463	463	463	463	463	463	463	463	463	463	463	463	463	463	463	
NY RIVER	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	
CLUSTER	62	58	54	57	65	65	76	76	76	77	76	81	76	76	63	58	58	62	62	62	62	62	62	62	62	62	62	62	62	62	
BRADY	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	
LOAN	39	38	37	37	37	37	41	41	41	45	45	46	34	34	34	31	42	45	33	28	28	28	28	28	28	28	28	28	28	28	
WHEEL	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
TOTAL	655	662	677	740	858	620	819	836	840	929	947	968	963	848	1018	882	1019	1029	1036	877	912	843	875	1025	975	906	848	837	828	876	2642
DEWEY	25	25	26	26	26	26	26	26	27	28	28	28	29	30	31	32	30	30	30	28	28	28	28	28	28	28	28	28	28	28	
EAST CHURCH	52	52	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	
ST ANTHONY UNION	524	524	525	401	541	555	575	575	587	593	575	511	482	505	496	468	428	438	582	310	292	352	401	582	498	498	498	498	498	498	
FARMERS FRIEND	210	210	207	210	207	207	239	240	237	259	259	263	263	259	259	259	259	259	259	259	259	259	259	259	259	259	259	259	259	259	
TWIN GROVES	140	140	138	132	158	155	155	169	181	184	163	160	134	157	173	167	163	122	79	71	71	71	134	140	189	160	170	185	190	183	
SALES UNION	220	220	220	218	244	244	244	235	220	264	216	190	168	121	168	181	132	146	141	166	164	171	207	206	197	180	187	187	187	187	
LEWIS	370	370	370	374	398	370	370	370	370	388	330	310	310	310	314	350	350	326	282	274	282	284	294	302	270	266	270	263	263	263	
ST ANTHONY UNION FEEDER	122	122	121	118	118	120	120	133	131	125	128	97	97	96	94	81	88	74	58	60	60	75	65	91	101	70	65	64	64	64	
INDEPENDENT	308	305	304	321	374	388	418	418	444	434	414	330	334	354	378	328	258	266	277	264	260	261	311	328	311	283	271	271	271	271	
CONSOLIDATED FARMERS	210	210	216	249	242	242	262	263	294	294	291	276	272	245	227	245	245	211	177	177	215	227	232	226	239	213	206	191	175	183	
TOTAL	2238	2228	2222	2148	2405	2408	2467	2581	2596	2644	2457	2272	2107	2184	2270	219	185	179	1588	1439	1444	1877	1992	1948	1857	1619	1780	1761	1622	6185	
SHOONWAY	2	4	11	19	0	9	10	18	18	19	15	21	12	21	25	18	20	25	13	22	22	22	22	22	22	22	22	22	22	22	
WILSON	160	161	163	165	208	218	213	222	224	246	214	218	211	211	214	208	204	180	81	79	81	74	144	189	159	137	170	161	161	161	
LEWIS IRRIGATION	46	48	23	15	17	18	30	68	78	74	93	81	68	58	72	76	75	84	72	73	81	78	74	83	81	85	84	81	81	81	
LEWIS LICK	12	12	13	11	13	0	0	0	0	0	36	37	34	35	33	31	33	28	38	16	38	48	48	48	48	48	48	48	48	48	
PICKER	5	6	3	0	0	0	0	0	0	23	17	18	17	27	24	25	24	14	16	16	16	15	15	15	15	15	15	15	15	15	
DEWITT	10	10	12	12	33	37	0	26	37	38	45	54	51	48	58	54	57	57	55	48	48	48	48	48	48	48	48	48	48	48	
FRANK WINEYON	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	
FRANK SAUER	53	45	48	41	47	47	70	68	70	68	49	64	47	40	47	45	43	43	43	43	43	43	43	43	43	43	43	43	43	43	
LEWIS ISLAND FEEDER	352	339	225	383	389	394	405	399	428	359	364	369	359	359	384	374	368	344	328	295	295	295	295	295	295	295	295	295	295	295	
BEKANA	20	20	17	38	18	15	16	17	36	11	17	31	20	10	15	20	23	24	22	19	41	35	20	13	13	11	11	11	11	11	
ISLAND WARD	63	57	50	56	74	49	63	68	70	72	36	81	81	81	81	81	81	81	81	81	81	81	81	81	81	81	81	81	81	81	
WILLIAM JOHNSON	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	
CITY OF BELGOUR	48	51	49	63	60	63	53	56	58	63	69	74	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	
FARMERS IRRIGATION	16	170	190	180	182	181	208	210	235	258	229	221	223	198	257	248	248	245	241	276	248	237	233	242	237	242	232	232	232	232	
TOTAL	964	971	894	1024	1007	1033	1085	1195	1304	1208	1191	1210	1176	1201	1263	1246	1211	1184	1015	980	945	1051	1094	1031	1010	1013	1013	1013	1013	1013	

of the month Messrs. Howard and Dawson were occupied largely with hydrometric work, together with a small amount of construction and repairs.

Disputes arising over the distribution of water in Sand, Squirrel and Boom Creeks required some attention by Mr. Howard at various times during the season.

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

Plates XX and XXI 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. The numerous small irregularities noted are chiefly attributable to the fact that recording gage records are only available for the station on Henrys Fork near Rexburg. A time interval allowance of one day is made between the upper stations and the one near Rexburg. Data for the latter station have been computed upon the basis of the regular midnight to midnight day; hence do not coincide exactly with the special day records included on Plates VIII and IX.

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 no data have been included in the columns headed "Estimated Balance Below Diversions" for these two streams except for days when the flow was so small as to make it possible to estimate same with a reasonable degree of accuracy from personal observation and knowledge of conditions at these points.

Attention is directed to the fact that throughout most of the critical or low water portion of the season Teton River contributed no surface flow to Henrys Fork, while for a period of nearly three weeks only a small amount of waste water passed the lowest canal di-

DISTRIBUTION ON SAND CREEK, FREMONT COUNTY.

Distribution of the flow of Sand Creek in Fremont County was handled in a manner almost identical with that in effect in Swan Valley, except that prior to the appointment of a special deputy water master one or two disputes were settled in person by Mr. Howard.

NEW CONSTRUCTION AND REPAIRS.

The following new gaging stations were established early in the season:

Henry's Fork below outlet of Henry's Lake near Lake, Idaho
Henry's Fork above the mouth of Fall River near Ashton, Idaho
Fall River below all diversions near St. Anthony, Idaho
Teton River above all lower valley diversions near St. Anthony, Idaho
Canyon Creek below proposed dam site near Newdale, Idaho
Osgood Canal near Idaho Falls, Idaho
Murtaugh Canal near Milner, Idaho

In addition to the customary staff gage at each station cable measuring equipment was installed at the Fall and Teton River stations. New foot bridges were constructed at a number of the canal gaging stations while in several instances new gages were put in or old ones relocated.

The cable at the station on Henry's Fork near Rexburg was equipped with new anchorages and the concrete recording gage well and shelter at the station on Snake River near Blackfoot which was begun in 1919 was completed during the fall of 1920.

This latter work was done in accordance with the policy agreed to by the advisory committee of gradually installing permanent structures at all of the principal river gaging stations.

RECOMMENDATIONS.

Bills were introduced at the 1921 session of the Idaho State Legislature for the purpose of correcting the two defects in the present statutes to which attention was directed in the 1919 report, but both these measures failed of passage.

Since the Legislature will not be convened again in regular session for a period of two years, further suggestions or recommendations concerning needed legislation will be postponed until the next annual report is prepared.

Problems involving different phases of the distribution or change of methods now in use can probably best be settled in conference with the members of the advisory committee. The advisability of continuing to base actual distribution upon single daily gage readings especially below the Neeley station, the revision of the regulations for charging storage waste, the Blackfoot River situation and many other similar matters which have been mentioned will be treated in this way, hence will not be further referred to in this report.

EXPENDITURES.

A complete statement of expenditures covering the year ending March 31, 1921, follows. This statement includes all items which appeared in the annual water master's bill for the season of 1920, 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 64 per cent to the former and 36 per cent to the latter, in accordance with the relative expenditures during the 1920 irrigation season (May 1 to September 30) for what may be termed regular work. This method of division is the one prescribed in the resolutions adopted on April 28, 1919, by the special water users' committee of nine.

EXPENDITURES FOR WATER DISTRIBUTION AND HYDROMETRIC WORK

April 1, 1920 to March 31, 1921.

		Irrigation Season	Winter Season
<u>Water Master</u>			
John Empey,	Salary June 1-Sept.30, 122 days @ \$7	854.00	
	Expense (telephoning)	1.75	
	Auto hire June 1-Sept.30, 122 days @ \$5	610.00	
	Expense (special conference at Boise)		39.24
<u>Deputy Water Masters</u>			
W. J. Kremer,	Salary June 1-Sept.15, 107 days @ \$4	428.00	
	Auto hire do	428.00	
A.E.Christensen	Salary June 1-Sept.15, 107 days @ \$4	428.00	
	Auto hire do	428.00	
Albert Terry,	Salary do 107 days @ \$4	428.00	
	Auto hire do	428.00	
L. P. Dawson,	Salary June 1-Sept. 2; Sept. 4-6, 97 days @ \$4	388.00	
	Auto hire do	388.00	
Martin Luetjen,	Salary June 1-Sept.15, 107 days @ \$3	321.00	
	Auto hire do	321.00	
Geo. A. Pincock,	Salary June 3-Aug.15; Aug.17-29; Sept.1-10, 97 days @ \$4	388.00	
	Auto hire do	388.00	
W. N. McConnel,	Salary June 1-Sept.15, 3½ mo. @ \$50	175.00	
<u>Special Deputy</u>			
G.Clyde Baldwin,	Salary May 1-Sept.30, 5 mo. @ \$300	1500.00	
	Expenses do	108.96	
	Auto hire do	72.10	
	Salary Apr.1-30; Oct.1-Mar.31, 7 mo. @ \$300		2100.00
	Expenses do		143.19
	(special conference at Boise)		39.29
	Auto hire		34.60

Hydrographers

		Irrigation Season	Winter Season
T. R. Newell,	Salary May 1-Sept. 30, 5 mo. @ \$200	1000.00	
	Apr. 1-30 & Oct. 1-Mar. 31-7 mo. @ \$200		1400.00
	Expenses May 1-Sept. 30	107.96	
	Apr. 1-30 & Oct. 1-Mar. 31		86.89
	Auto hire May 1-Sept. 30	454.90	
	Apr. 1-30 & Oct. 1-Mar. 31		93.30
E. C. Howard,	Salary May 1-31, 1 mo. @ \$175	175.00	
	June 1-Sept. 30, 4 mo. @ \$180	720.00	
	Apr. 1-30, 1 mo. @ \$175		175.00
	Oct. 1-Mar. 31, 6 mo. @ \$180		1080.00
	Expenses May 1-Sept. 30	129.57	
	Apr. 1-30 & Oct. 1-Mar. 31		108.41
	Auto hire May 1-Sept. 30	597.30	
	Apr. 1-30 & Oct. 1-Mar. 31		70.50
C. F. Elford,	Salary Sept. 2-14, 13 days @ \$7.00	91.00	
	Expenses do	26.73	
	Auto hire do	17.50	
Wendell Dawson,	Salary May 1-31, 1 mo. @ \$125	125.00	
	June 1-July 31, 2 mo. @ \$150	300.00	
	Apr. 1-30, 1 mo. @ \$125		125.00
	Expenses May 1-July 31	46.35	
	Apr. 1-30		10.90
	Auto hire May 1-July 31	420.80	
	Apr. 1-30		60.90
W. F. Dawson,	Salary May 28-July 31, 2 3/30 mo. @ \$125	262.50	
	Aug. 1-Sept. 30, 2 mo. @ \$140	280.00	
	Oct. 1-6, 6/30 mo. @ \$140		28.00
	Expenses May 28-Sept. 30	81.99	
	Auto hire do	531.30	
L. L. Bryan,	Salary July 3-4; 6; Aug. 30-Sept. 2; Sept. 9	42.00	
	Expenses do	21.35	
	Auto hire do	9.30	

Stenographers

Ethel M. Klemm,	Salary May 1-June 30, 2 mo. @ \$115	230.00	
	Apr. 1-30, 1 mo. @ \$115		115.00
	July 1-Sept. 30, 3 mo. @ \$130	390.00	
	Oct. 1-7, 7/30 mo. @ \$130		30.33
E. Hazel Haugse,	Salary May 1-3, 3/30 mo. @ \$140	14.00	
Z. E. Howard,	Salary June 2-Sept. 15, 3 14/30 mo. @ \$50	173.33	
Hazel Cuppernull,	Salary Sept. 19-21, 3 days @ \$4	12.00	
DeEsta Sims,	Salary Sept. 28-30, 3 days @ \$5	15.00	
Mrs. Edith M. Cure,	Salary Oct. 1-Jan. 20, 3 20/30 mo. @ \$120		440.00
	Jan. 21-Mar. 31, 2 10/30 mo. @ \$150		303.54

Observers

		Irrigation Season	Winter Season
H. R. Wallis,	Salary May 1-31, 1 mo. @ \$15 June 1-Sept. 15, 3½ mo. @ \$50 Sept. 16-30, 2 wks. @ \$2 Apr. 1-30 & Dec. 1-Feb. 28, 4 mo @ \$15 Oct. 1-Nov. 30 & Mar. 1-31, 13 1/7 wks. @ \$2	15.00 175.00 4.00	60.00 26.29
Harold Fuqua,	Salary May 1-31 & Sept. 16-30, 1½ mo. @ \$5 June 1-Sept. 15, 3½ mo. @ \$12 Apr. 20-31, 11/30 mo. @ \$5	7.50 42.00	1.83
W. J. Kremer,	Salary Sept. 16-30, ½ mo. @ \$12	6.00	
Oliver Kofoed,	Salary June 3-Sept. 15, 105 days @ \$1 Sept. 16-30, ½ mo. @ \$5	105.00 2.50	
E. L. Jennings,	Salary June 1-Sept. 15, 107 days @ \$1	107.00	
Lena Byington,	Salary May 1-31, 1 mo. @ \$7.50 Apr. 1-30, 1 mo. @ \$7.50	7.50	7.50
J. A. Clough,	Salary May 1-31, 1 mo. @ \$10 June 1-Sept. 30, 122 days @ \$1 Apr. 1-30 & Oct. 1-Mar. 31, 7 mo. @ \$10	10.00 122.00	70.00
Thelma Shupe,	Salary May 1-31 & Sept. 16-30, 1½ mo @ \$5 June 1-Sept. 15, 107 days @ \$1 Apr. 10-30, 21/30 mo. @ \$5	7.50 107.00	3.50
E. Luetjen,	Salary May 1-31 & Sept. 16-30, 1½ mo @ \$8 Apr. 1-30 & Oct. 1-Mar. 31, 7 mo @ \$8	12.00	56.00
Tom Donnelly,	Salary May 1-31, 1 mo. @ \$5 Apr. 12-30, 19/30 mo. @ \$5	5.00	3.17
A. A. Lehmann,	Salary May 18-Sept. 30, 4 17/30 mo. @ \$15 Oct. 1-31, 1 mo. @ \$15	68.50	15.00
Axel Anderson,	Salary May 1-Sept. 30, 5 mo. @ \$15 Apr. 1-30 & Oct. 1-Mar. 31, 7 mo @ \$15	75.00	105.00
W. S. Pincock,	Salary May 1-Sept. 30, 5 mo. @ \$8 Mar. 29-Apr. 30, 1 2/30 mo. @ \$8	40.00	8.53
W. A. Winters,	Salary May 1-31 & Sept. 16-30, 1½ mo @ \$5 Apr. 23-30, 12/30 mo. @ \$5	7.50	1.33
Mrs. J. F. Johnson,	Salary May 1-31 & Sept. 16-30, 1½ mo @ \$5 Apr. 19-30, 12/30 mo. @ \$5	7.50	2.00
James Thorne,	Salary Apr. 5-23, 19/30 mo. @ \$7.50 Apr. 24-30, 7 days @ 50¢ May 1-31 & Sept. 12-15, 35 days @ 50¢ Sept. 16-30, ½ mo. @ \$7.50	17.50 3.75	4.75 3.50
P. W. Wernette,	Salary May 1-Sept. 30, 5 mo. @ \$5 Apr. 1-30 & Oct. 1-Mar. 31, 7 mo @ \$5	25.00	35.00
R. E. Reid,	Salary May 1-Sept. 30, 5 mo. @ \$10 Apr. 1-30 & Oct. 1-Mar. 31, 7 mo @ \$10	50.00	70.00
C. W. Kemper,	Salary May 1-Sept. 30, 5 mo. @ \$4 Apr. 1-30 & Oct. 1-Dec. 15, 3½ mo @ \$4	20.00	14.00
Mrs. Harold Lehman,	Salary May 1-Sept. 30, 5 mo @ \$10 Apr. 1-30, 1 mo @ \$10	50.00	10.00
J. P. Jensen,	Salary May 1-31, 1 mo. @ \$6 Apr. 1-30, 1 mo. @ \$6	6.00	6.00
Wm. Hall,	Salary June 1-Sept. 30, 4 mo. @ \$7.50 Oct. 1-26, 26/30 mo. @ \$7.50	30.00	6.50

	Irrigation Season	Winter Season
Telephone toll and rental, May 1-Sept. 30	341.85	
Miscellaneous field and office supplies Apr.1-30 & Oct.1-Mar.31	503.56	56.05
Materials and equipment for gaging stations	208.80	264.17
Premiums and filing fees for official bonds	<u>43.00</u>	<u>44.51</u>
Total expenditures during irrigation season (May 1-Sept.30)	16591.65	
Total expenditures during winter season (Apr.1-30 & Oct.1-Mar.31)		7358.52

SOURCES OF REVENUE

Normal Flow Fund	9541.55	2540.75
Stored Water Users (through State)	4926.16	82.65
Stored Water Users (through U.S. Geological Survey)	392.02	1345.86
U. S. Geological Survey	358.49	915.88
State of Idaho (Cooperative Stream Measurement Fund)	426.57	1297.89
State of Idaho (Commissioner of Reclamation)		78.53
U. S. Indian Service	568.24	512.95
U. S. Treasury (Federal Salary Bonus)	46.00	171.99
Water Users' Protector Association of the North Fork of Snake River and Tributaries		383.33
Canyon Irrigation District	87.42	8.53
Fall River Reservoir Association	64.00	5.16
North Fork Reservoir Association	151.40	15.00
Consolidated Wagon and Machine Company	<u>9.80</u>	<u>15.00</u>
	16591.65	7358.52

FUNDS AVAILABLE APRIL 1, 1921

Normal Flow Fund (a)	\$1092.07
U. S. Geological Survey (b)	326.49
State of Idaho (c) Cooperative Stream Measurement Fund	1000.00
U.S. Indian Service (b) Actual expenditures not exceeding	753.76
Stored Water Users (estimated) (a)	<u>609.50</u>
	\$3,781.82

- (a) Additional funds probably available on or about June 1, 1921
- (b) Represents amount available for expenditure prior to July 1, 1921
- (c) Amount allotted for expenditure prior to July 1, 1921
(subject to slight change)

WATER RIGHTS

During the past year a number of decreed water rights have been permanently transferred from one canal system to another. These transfers entailed many changes in the rights having their source in main Snake River and in the South Fork (Snake River above the mouth of Henrys Fork). Therefore the data contained on Plate XXII of the 1919 report are no longer applicable in all cases and on this account a revised tabular summary of these rights has been prepared and included as Plate XXIV of this report. Wherever two names appear in this summary 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. The column headed

1920 DISTRIBUTION WATER DISTRICT NO 36

DATE	DECREE	PARTY OR CANAL	TOTAL	REMNDR
1903	AUG 6 1000	USRS "FOSTER"	2726	1726
	JUN 16 350	TFNSLWCO "FOSTER"	3000	2650
1905	OCT 7 2250	TFNSLWCO "FOSTER"	3000	400
	JUN 1 36	RUDY	191.26	155.26
1903	SEP 1 110	SNAKE RIVER VALLEY	710	600
	JUN 1 100	LENROOT	220	120
	JUN 1 10	HILL-PETTINGER	13	3
		CT Carbon A Fagerstrom		
	MAR 26 1726	USRS "FOSTER"	2726	0
1902	JUN 1 3	HILL-PETTINGER	13	0
		F Roth		
	JUN 1 24	RILEY	24	0
	JUN 1 4	THORESON	4	0
		Reese & King		
	MAY 1 56	HEISE	56	0
	APR 14 140	CONSOL FEEDER	184	44
1900	OCT 11 400	TFNSLWCO "FOSTER"	3000	0
	OCT 11 3000	TESS CANAL CO "FOSTER"	3000	0
	JUN 16 6	TAYLOR AND GOSHEN	6	0
	JUN 16 180	OSGOOD	25245	7245
		Taylor and Goshen		
	JUN 1 14	RUDY	191.26	141.26
	APR 30 1	NELSON	1	0
		BCVCG Mattson		
	APR 30 1296	MATTSON & CRAIG	1776	4.8
		BCVCG Mattson		
1899	JUN 1 76	LENROOT	220	44
1898	APR 15 68	ENTERPRISE	188	120
1896	JUL 9 400	SNAKE RIVER VALLEY	710	200
1895	JUN 1 12	TEXAS FEEDER	280	268
		Texas Slough Irr Can Co		
	JUN 1 160	BURGESS	800	640
	MAR 22 120	ENTERPRISE	188	0
	FEB 6 1250	ABERDEEN SPRINGFIELD	1250	0
		Am Falls Power & Can Co		
	JAN 9 160	HARRISON	45928	29928
1894	AUG 18 400	PEOPLES	4242	242
	JUN 1 28	DILTS	28	0
		Dills & LaBelle Dirch Co		
	JUN 1 14	TEXAS FEEDER	280	254
		Texas Slough Irr Can Co		
1893	JUN 1 14	TEXAS FEEDER	280	240
		Texas Slough Irr Can Co		
	APR 30 855	WOODVILLE	855	
1892	JUN 1 5	LENROOT	220	39
		G-1-03 Amended		

REVISED TABULAR SUMMARY OF PRIM

DATE	DECREE	PARTY OR CANAL	TOTAL	REMNDR
1892	JUN 1 14	TEXAS FEEDER	280	226
		Texas Slough Irr Can		
	JUN 1 26	LOYDER	52	26
	MAY 1 130	CORBETT SLOUGH	23943	10943
1891	DEC 14 600	RESERVATION	600	0
		Idaho Can & Imp Co		
	JUN 1 48	NELSON COREY	168	12
		PC Carlson		
	JUN 1 6	ARNSBERGER	6	0
		Supplemental		
	JUN 1 15	LENROOT	220	24
		G-1-03 199 Amended		
	JUN 1 195	ISLAND	240	45
		Supplemental 105		
	JUN 1 14	TEXAS FEEDER	280	212
		Texas Slough Irr Can		
	JAN 24 400	GREAT WESTERN POK 549	149	
		Nan Sweden Irr Dist		
1890	NOV 24 72	NEY LAVA SIDE	152	80
	OCT 16 3494	BUTTE & MARKET LAKE	3494	0
	OCT 16 106	OSGOOD	25245	6135
		Butte & Market Lake		
	JUL 12 240	HARRISON	45928	5928
	JUN 10 240	BURGESS	800	400
	JUN 1 96	KITEV NORD	96	0
		Nord 43 Hatfield 32		
	JUN 1 6541	TREGO	6541	0
	JUN 1 459	KENNEDY & BURGRAFF	2451	1992
	JUN 1 26	LOYDER	52	0
		G-1-00 Error		
	FEB 21 178	SMITH & MAXWELL	178	0
		Smith, Jarvis Brennan		
1889	JUL 10 3668	BLACKFOOT	3668	0
	JUL 10 104	OSGOOD	25245	5145
		Blackfoot		
	JUL 10 140	GREAT WESTERN POK 549	135	
		Blackfoot		
	JUL 10 88	KENNEDY & BURGRAFF	2451	11.12
		Blackfoot		
	JUN 2 6	CHENEY	6	0
		Streeper		
	JUN 1 6	LENROOT	220	18
	JUN 1 30	RUDY	191.26	111.26
	JUN 1 3890	LONG ISLAND	5447	5058
	JUN 1 80	REID	150	70

DATE	DECREE	PARTY OR CANAL	TOTAL	REMNDR
1889	JUN 1 043	OSGOOD	25245	5102
		Long Island		
	JUN 1 043	HARRISON	45928	5885
		Long Island		
	JUN 1 024	KENNEDY & BURGRAFF	2451	1088
		Long Island		
	JUN 1 44	CONSOL FEEDER	184	0
		Sunnydell 20 Lyman 24		
	JUN 1 38	TEXAS FEEDER	280	174
		Liberty Park Irr Co		
	JUN 1 12	HARRISON	45928	4685
		OH Olive		
	MAY 11 700	IDAHO	740	40
	MAY 1 1043	CORBETT SLOUGH	23943	0
	MAY 1 775	OSGOOD	25245	4327
		Corbett Slough		
	MAY 1 222	KENNEDY & BURGRAFF	2451	306
		Corbett Slough		
	APR 15 300	FARMERS PROGRESS BOO	500	
	APR 6 200	SNAKE RIVER VALLEY TIG	0	
		Cedar Point Water Co		
	MAR 1 60	NEY LAVA SIDE	152	20
	JAN 12 5	KENNEDY & BURGRAFF	2451	306
		YS Lyle Amendment		
1888	AUG 13 100	RUDY	191.26	11.26
	AUG 13 40	IDAHO	740	0
	AUG 13 260	BOOMER	260	0
		Idaho Can & Imp Co		
	JUL 15 32	WHEARY RICK	412	38
		Watson Slough		
	JUL 15 166	PEOPLES	4242	76
		Watson Slough		
	JUL 15 302	WATSON SLOUGH	974	67.2
	JUN 15 120	RIGBY	160	40
	JUN 10 380	BURGESS	800	20
	JUN 1 80	DANSKIN	180	100
	JUN 1 334	ROSS & RAND	334	0
		Supplemental		
	JUN 1 92	LA BELLE	140	48
	JUN 1 38	TEXAS FEEDER	280	136
		Liberty Park Irr Co		
	JUN 1 2112	PARKS & LEWISVILLE	3512	140
	JUN 1 2888	HARRISON	45928	1797
		Parks & Lewisville		
	JUN 1 02	ROSTAN	64	56
		John Matson		

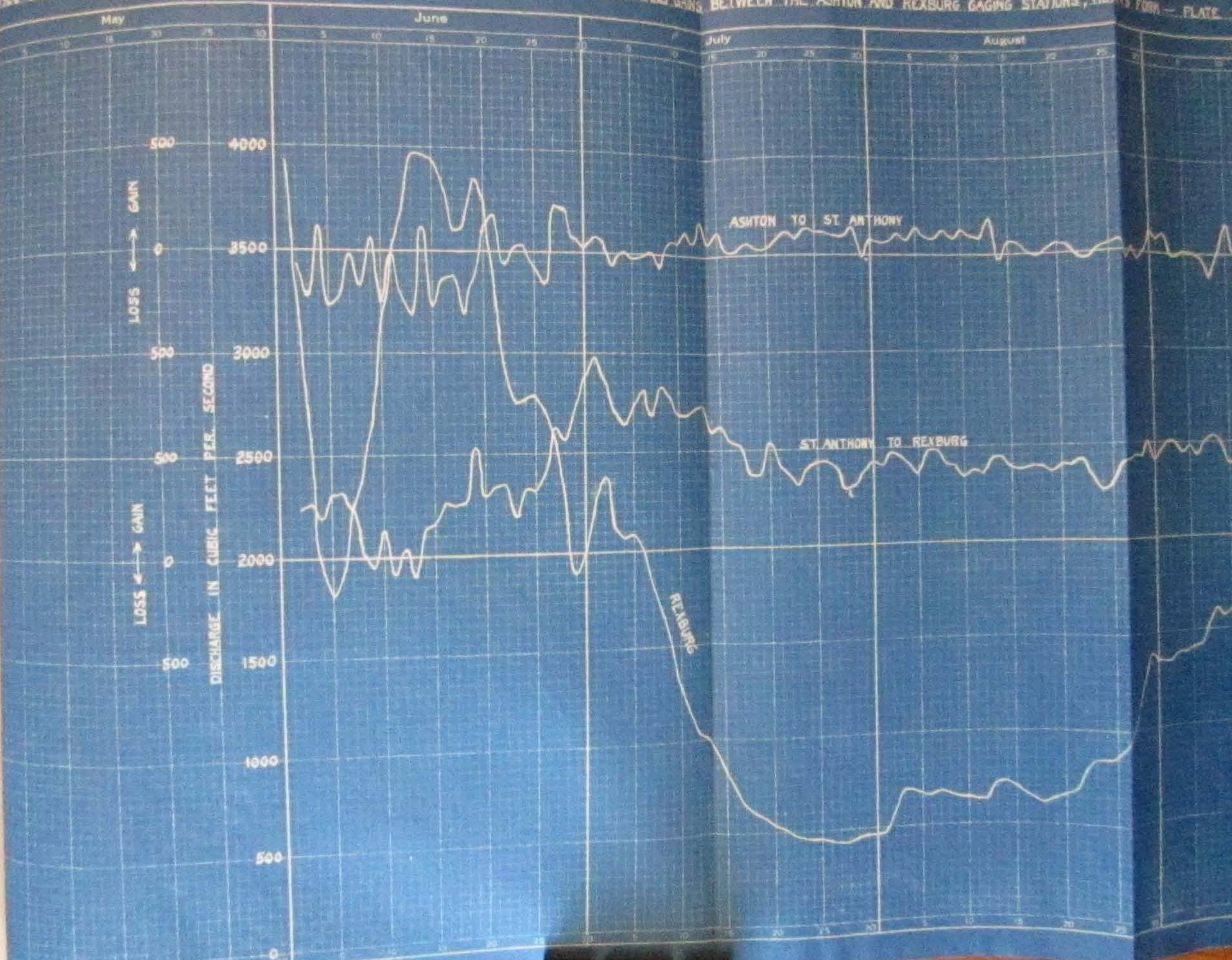
PRINCIPAL SOUTH FORK AND SNAKE RIVER WATER RIGHTS

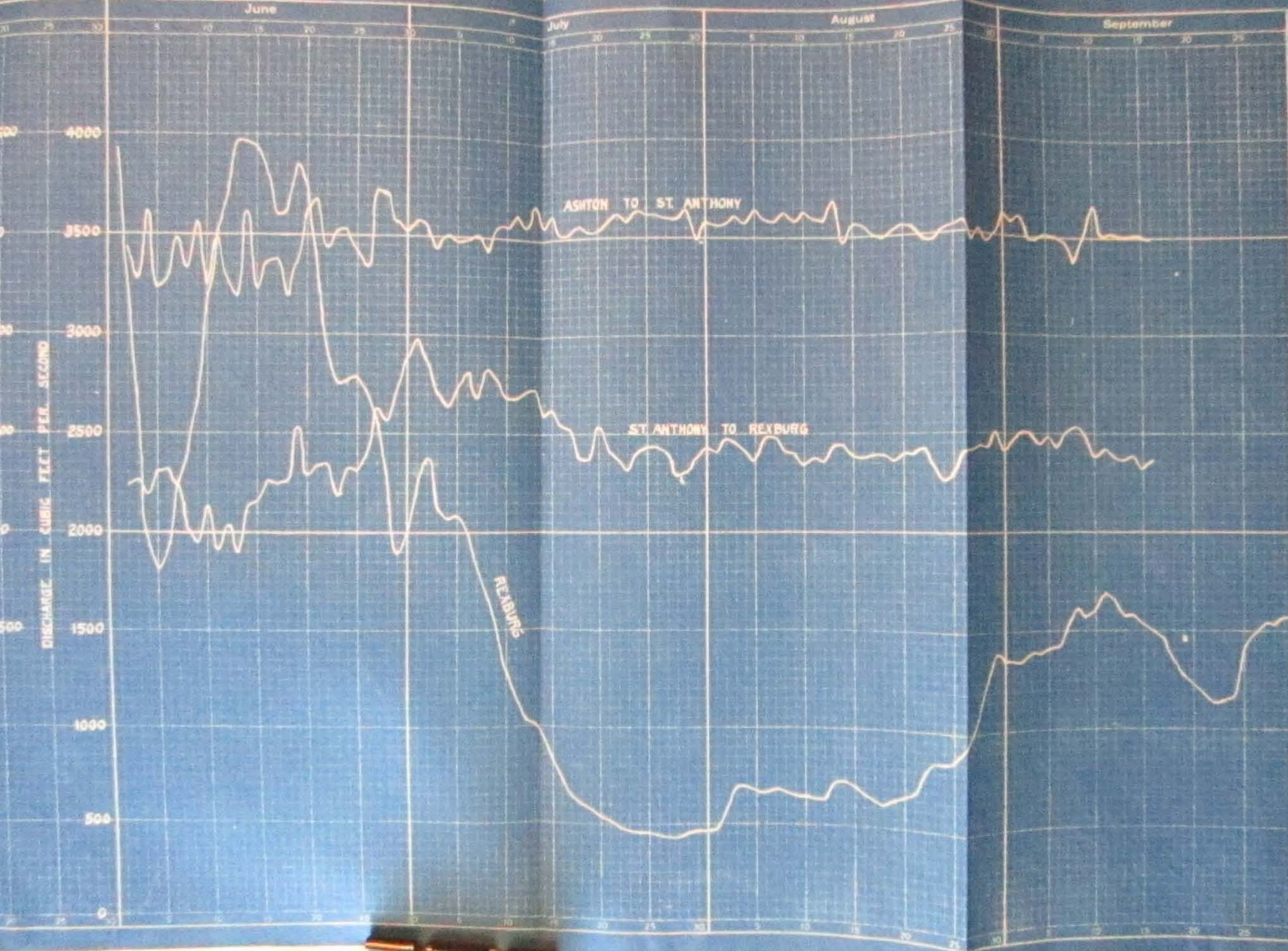
DATE	DECREE	PARTY OR CANAL	TOTAL	REMNDR
1882 JUN 1	2	RUDY C.E. Rostan	191.26	926
JUN 1	5834	LONG ISLAND	544.7	447.46
JUN 1	065	OSGOOD Long Island	252.45	4262
JUN 1	065	HARRISON Long Island	459.28	17.32
JUN 1	036	KENNEDY & BURGRAFF Long Island	24.51	27
MAY 13	32	WATSON SLOUGH H.M. Palmer	97.4	640
MAY 1	1	MORGAN	3	2
JAN 18	300	FARMERS FRIEND	302	2
1887 JUN 15	20	RIGBY	160	20
JUN 10	10	BURGESS	800	10
JUN 1	90	RIVERSIDE	100	10
JUN 1	98	TEXAS FEEDER Liberty Park Irr Co	280	98
JUN 1	12	NELSON & COREY	168	0
JUN 1	48	MATTSON CRAIG RACraig	17.76	0
JUN 1	5837	LONG ISLAND	544.7	389.09
JUN 1	064	OSGOOD Long Island	252.45	41.98
JUN 1	064	HARRISON Long Island	459.28	16.68
JUN 1	035	KENNEDY & BURGRAFF Long Island	24.51	235
JUN 1	30	ISLAND	240	15
1886 JUL 23	100	DANSKIN	180	0
JUN 15	10	RIGBY	160	10
JUN 10	10	BURGESS	800	0
JUN 1	16	WATSON SLOUGH Ely & Korteer	97.4	624
JUN 1	15	ISLAND	240	0
JUN 1	50	TEXAS FEEDER Tex Sl Irrig Lib Park Irrig	280	48
JUN 1	5837	LONG ISLAND	544.7	330.72
JUN 1	064	OSGOOD Long Island	252.45	41.34
JUN 1	064	HARRISON Long Island	459.28	16.04
JUN 1	035	KENNEDY & BURGRAFF Long Island	24.51	2
JUN 1	56	ROSTAN Watson C.E. Martin 4 th	64	0

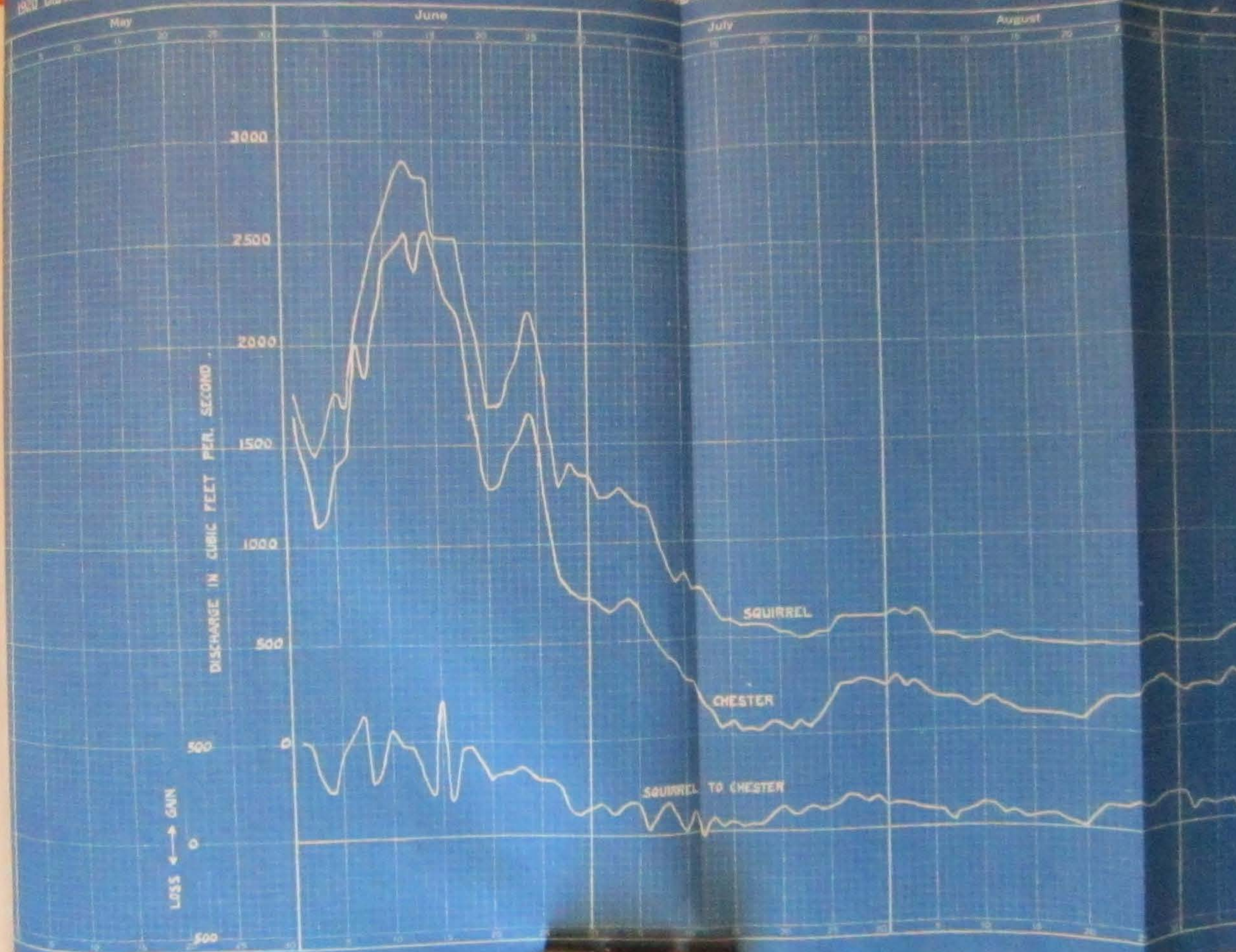
DATE	DECREE	PARTY OR CANAL	TOTAL	REMNDR
1886 JUN 1	2	RUDY Rostan	191.26	7.26
JUN 1	40	REID	150	30
MAY 3	38	WEARYRICK	41.2	0
MAY 1	2	MORGAN	3	0
JAN 7	120	GREAT WESTERN PORTER New Sweden Irr Dist	54.9	15
1885 JUN 30	22	PARSONS	22	0
JUN 15	10	RIGBY	160	0
JUN 10	124	HARRISON ST & WY Summers	459.28	364
JUN 10	1	STEELE ST & WY Summers	1	0
JUN 1	10	RIVERSIDE	100	0
JUN 1	48	TEXAS FEEDER Tex Sl Irrig Lib Park Irrig	280	0
JUN 1	100	PARKS & LEWISVILLE	351.12	40
JUN 1	48	LA BELLE	140	0
JUN 1	9	LENROOT	220	9
JUN 1	30	REID	150	0
JUN 1	5837	LONG ISLAND	544.7	272.35
JUN 1	064	OSGOOD Long Island	252.45	40.7
JUN 1	064	HARRISON Long Island	459.28	3
JUN 1	035	KENNEDY & BURGRAFF Long Island	24.51	165
JUN 1	1062	WEST LA BELLE	1062	0
JUN 1	37	OSGOOD West La Belle	252.45	37
JUN 1	101	WHITE West La Belle	101	0
JUN 1	60.74	BUTLER ISLAND	60.74	0
JUN 1	726	RUDY Butler Island	191.26	0
JUN 1	2	FARMERS FRIEND Butler Island	302	0
MAR 6	624	WATSON SLOUGH	97.4	0
MAR 6	76	PEOPLES Watson Slough	424.2	0
FEB 27	70	CLARK & EDWARDS	70	0
1884 JUN 4	34	OSGOOD Independent Irrig Co	252.45	3
JUN 1	20	NEW LAVASIDE	152	0
JUN 1	20	PARKS & LEWISVILLE	351.12	20
JUN 1	9	LENROOT	220	0

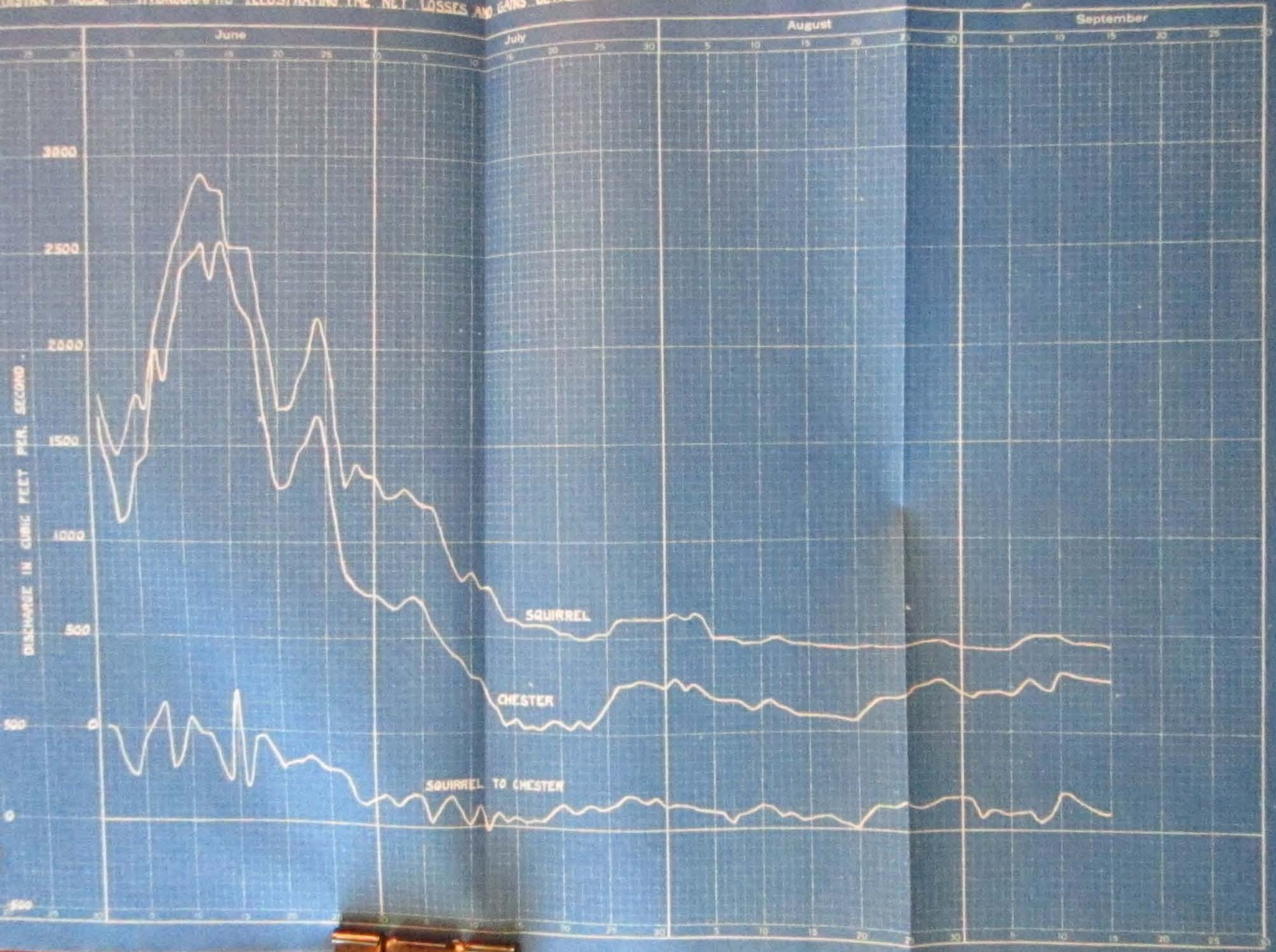
DATE	DECREE	PARTY OR CANAL	TOTAL	REMNDR
1884 JUN 1	5837	LONG ISLAND	544.7	213.98
JUN 1	064	OSGOOD Long Island	252.45	236
JUN 1	064	HARRISON Long Island	459.28	236
JUN 1	035	KENNEDY & BURGRAFF Long Island	24.51	130
APR 3	340	FARMERS PROGRESS	800	160
1883 JUN 10	50	NORTH RIGBY	50	0
JUN 1	20	PARKS & LEWISVILLE	351.12	0
JUN 1	15	NIELSEN-HANSEN	15	0
JUN 1	15	GREAT WESTERN FOR 549	549	0
JUN 1	5837	LONG ISLAND	544.7	155.61
JUN 1	064	OSGOOD Long Island	252.45	172
JUN 1	064	HARRISON Long Island	459.28	172
JUN 1	035	KENNEDY & BURGRAFF Long Island	24.51	0.95
1882 JUN 1	064	OSGOOD Long Island	252.45	108
JUN 1	064	HARRISON Long Island	459.28	108
JUN 1	035	KENNEDY & BURGRAFF Long Island	24.51	0.60
JUN 1	5837	LONG ISLAND	544.7	97.24
1881 JUN 1	065	OSGOOD Long Island	252.45	0.43
JUN 1	065	HARRISON Long Island	459.28	0.43
JUN 1	036	KENNEDY & BURGRAFF Long Island	24.51	0.24
JUN 1	5834	LONG ISLAND	544.7	38.90
1880 AUG 1	160	FARMERS PROGRESS	800	0
JUN 11	043	OSGOOD Long Island	252.45	0
JUN 11	043	HARRISON Long Island	459.28	0
JUN 11	028	KENNEDY & BURGRAFF Long Island	24.51	0
JUN 11	329	LONG ISLAND	544.7	0

NOTE - ALL DECREES ARE LISTED IN SECOND FEET.









verting from Henrys Fork.

Plate XXII contains hydrographs for the two gaging stations on Fall River and a graph showing indicated net gains above the lower or Chester station. The latter in particular shows apparent discrepancies or irregularities which would doubtless be smoothed out or altogether eliminated if recording gage records were available for each station. The large gains noted during June are probably due to unmeasured inflow from Squirrel Creek and other small tributaries which later in the season do not reach the main river.

The hydrograph for the Rexburg station and graphs showing gains and losses on Henrys Fork above and below St. Anthony are included on Plate XXIII. These curves are all plotted to agree with the Rexburg dates. The minimum flow past the Rexburg station during 1920 was about 80 second-feet larger than that of 1919, a fact which is consistent with the increases in return flow noted elsewhere in District No. 36 during 1920.

DISTRIBUTION IN SWAN VALLEY.

A deputy water master was appointed to look after the distribution of water in the Swan Valley area during the season. Arrangements were made with the local water users to settle all expense incident to this work directly, and in consequence no charges against canals in this section were included in the annual water master's bill. Copies of all instructions regarding cuts were forwarded to this deputy, who was directed to regulate his distribution accordingly.

FALL RIVER								HENRY'S FORK							TETON			
DATE	SQUIR-REL	CANALS ABOVE STATION	SQUIR CANALS ABOVE STATION	TOTAL DIVERS IONS	THEO BALANCE CHESTER	CHESTER	GAIN ABOVE CHESTER	ASHTON	ASHTON FALL RIVER CHESTER	DIVERS ASHTON TO ST ANTHONY	THEO BALANCE	ST AN THONY	GAIN ASHTON TO ST ANTHONY	DIVER. BELOW ST. AN THONY	THEO BALANCE	EST BALANCE BELOW DIVERS	ST. AN THONY	TOTAL DIVERS IONS
JUL 25	527	30	557	533	24	153	129	1280	1433	892	541	650	109	798	-148	15	901	743
26	598	34	632	525	107	255	148	1260	1515	885	630	730	100	821	-91	15	846	725
27	598	30	628	544	84	255	171	1260	1515	878	637	735	98	776	-41	15	820	642
28	598	30	628	521	107	268	161	1200	1468	881	587	735	148	768	-33	15	820	649
29	598	30	628	507	121	268	147	1280	1548	836	712	700	-12	760	-60	15	846	708
30	598	30	628	529	99	255	156	1290	1545	925	620	700	80	772	-72	15	820	724
31	598	16	614	490	124	242	118	1290	1532	893	639	700	61	747	-47	15	820	717
AUG 1	636	6	642	477	165	281	116	1260	1541	839	702	770	68	768	2		846	737
2	598	6	604	494	110	229	119	1260	1489	752	737	840	103	704	136		820	724
3	636	6	642	493	149	255	106	1280	1535	733	802	880	78	689	191		820	722
4	598	2	600	483	117	216	99	1290	1506	775	731	880	149	651	229		793	716
5	494	97	591	507	84	173	89	1260	1433	794	639	735	96	640	95		780	699
6	494	121	615	534	81	162	81	1260	1422	780	642	735	93	629	106		788	682
7	494	138	632	503	129	162	33	1240	1402	774	628	770	142	574	196		742	677
8	461	161	622	541	81	153	72	1230	1383	708	675	770	95	592	178		742	670
9	461	159	620	593	27	118	91	1230	1348	709	639	770	131	579	191		742	636
10	461	159	620	597	23	139	116	1240	1379	706	673	770	97	625	145		768	656
11	494	158	652	595	57	163	106	1280	1443	724	719	784	65	631	153		793	668
12	494	160	654	583	71	128	57	1200	1328	718	610	805	195	577	228		742	689
13	461	160	621	587	34	102	68	1280	1382	574	808	770	-38	604	166		742	624
14	461	160	621	578	43	88	45	1260	1348	609	739	805	66	602	203		718	608
15	461	160	621	580	41	88	47	1290	1378	631	747	805	58	612	193		718	619
16	449	160	609	577	32	88	56	1260	1348	544	804	805	1	648	157		693	590
17	443	158	601	573	28	88	60	1260	1348	533	815	805	-10	682	123		693	583
18	437	159	596	562	34	75	41	1240	1315	533	782	826	44	646	180		693	590
19	437	159	596	562	34	62	28	1220	1282	530	752	805	53	650	155		693	592
20	437	112	549	489	60	66	6	1220	1286	524	762	805	43	623	182		670	567
21	443	80	523	472	51	123	72	1200	1323	485	838	805	-33	541	264		670	565
22	437	80	517	472	45	169	124	1200	1369	451	918	882	-36	498	384		670	556
23	437	80	517	455	62	176	114	1200	1376	448	928	960	32	508	452		670	542
24	437	78	515	459	56	176	120	1180	1356	478	878	920	42	459	461		646	541
25	437	80	517	478	39	182	143	1180	1362	504	858	920	62	463	457		646	596
26	449	81	530	419	111	231	120	1200	1431	429	1002	960	-42	449	511		670	593
27	461	82	543	420	123	238	115	1180	1418	446	972	1000	28	391	609		693	620
28	461	82	543	419	124	254	130	1200	1454	412	1042	1000	-42	378	622		768	563
29	461	128	589	487	102	262	160	1230	1492	422	1070	1070	0	378	692		768	578
30	449	75	524	453	71	233	162	1200	1433	464	1029	1140	111	398	742		742	552
31	443	98	541	492	49	205	156	1200	1405	387	1018	1090	72	419	671		718	506
SEPT 1	437	98	535	510	25	176	151	1180	1356	368	988	1090	102	439	651		693	505
2	430	102	532	390	142	202	60	1200	1402	290	1112	1090	-22	391	699		693	501
3	424	115	539	435	104	202	98	1200	1402	251	1151	1140	-11	388	752		670	480
4	424	115	539	419	120	202	82	1180	1382	261	1121	1140	19	403	737		670	476
5	424	115	539	420	119	195	76	1180	1375	232	1143	1150	7	363	787		670	472
6	461	113	574	422	152	232	80	1200	1432	242	1190	1170	-20	371	799		742	525
7	494	121	615	436	179	270	91	1290	1560	251	1309	1180	-129	376	804		793	532
8	494	120	614	431	183	224	41	1260	1484	262	1224	1230	8	351	879		718	517
9	494	87	581	433	148	216	68	1230	1446	262	1184	1340	156	354	986		742	504
10	494	90	584	458	126	314	188	1260	1574	251	1323	1340	17	374	966		768	475
11	461	84	545	428	117	299	182	1260	1559	245	1314	1340	26	366	974		742	449
12	461	83	544	403	141	284	143	1260	1544	234	1305	1310	5	360	950		693	439
13	455	76	531	372	159	270	111	1230	1500	234	1266	1280	14	352	928		693	432
14	449	73	522	345	177	262	85	1230	1492	225	1267	1280	13	347	933		670	410
15	443	67	510	336	174	258	84	1200	1458	224	1234	1230	-4	347	883		670	405

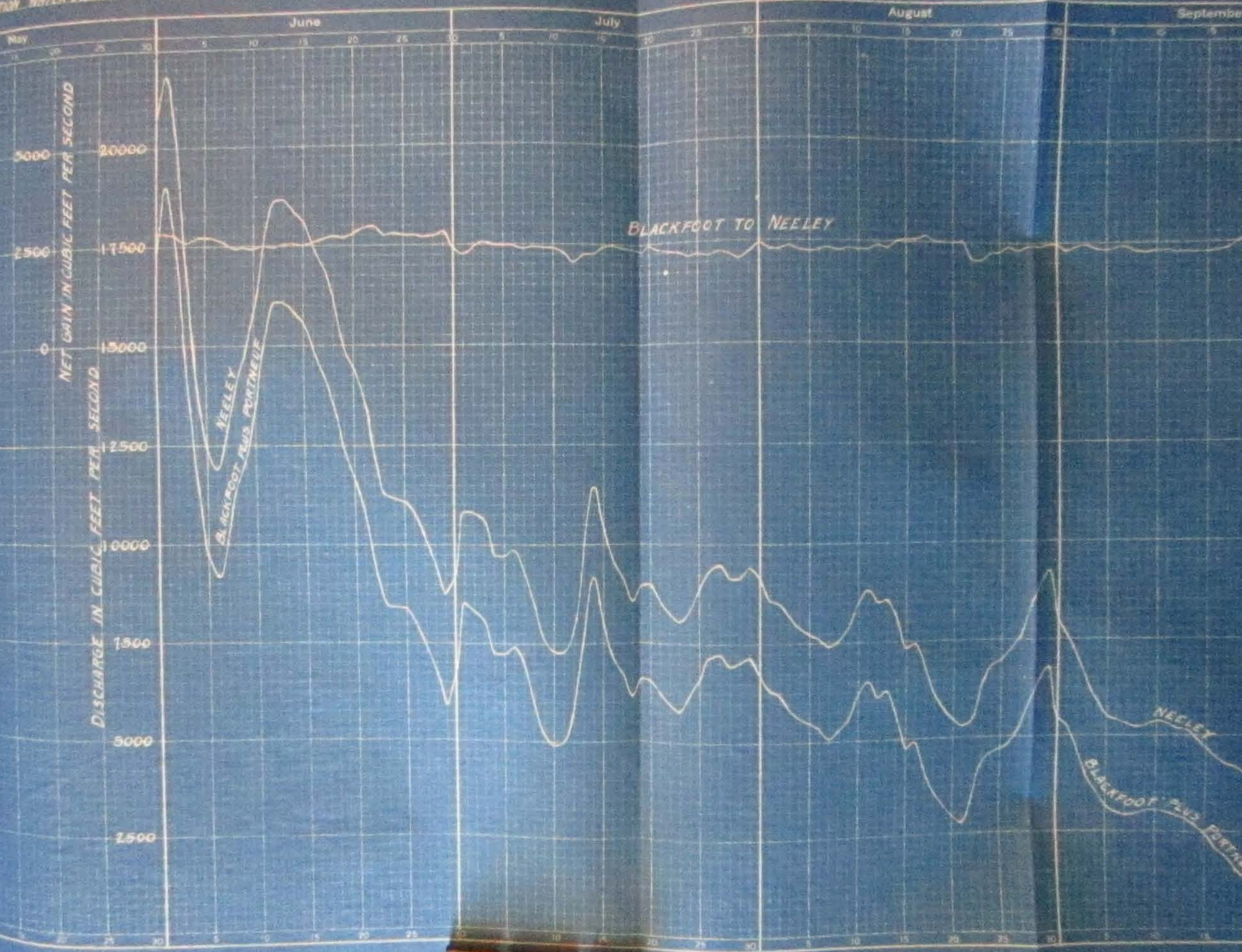
PLATE NO. XX

EST BALANCE	ST AN THONY	DATE	HENRY'S FORK
0	0	JUL 26	643
0	0	27	643
0	0	28	642
0	0	29	649
0	0	30	708
0	0	31	717
0	0	AUG 1	737
0	0	2	724
0	0	3	722
0	0	4	716
0	0	5	699
0	0	6	682
0	0	7	677
0	0	8	670
0	0	9	636
0	0	10	656
0	0	11	668
0	0	12	689
0	0	13	624
0	0	14	608
0	0	15	619
0	0	16	590
0	0	17	583
0	0	18	590
0	0	19	592
0	0	20	567
0	0	21	565
0	0	22	556
0	0	23	542
0	0	24	541
0	0	25	596
0	0	26	593
0	0	27	620
0	0	28	563
0	0	29	578
0	0	30	552
0	0	31	506
0	0	SEPT 1	505
0	0	2	501
0	0	3	480
0	0	4	476
0	0	5	472
0	0	6	525
0	0	7	532
0	0	8	517
0	0	9	504
0	0	10	475
0	0	11	449
0	0	12	439
0	0	13	432
0	0	14	410
0	0	15	405

FALL RIVER								HENRY'S FORK						TETON RIVER				BALANCE						
DATE	SQUIR-REL	CANALS ABOVE STATION	SQUIR CANALS ABOVE STATION	TOTAL DIVERSIONS	THEO. BALANCE CHESTER	CHESTER	GAIN ABOVE CHESTER	ASHTON	FALL RIVER CHESTER	ASHTON TO ST. ANTHONY	THEO. BALANCE	ST. ANTHONY	GAIN ASHTON TO ST. ANTHONY	DIVER BELOW ST. ANTHONY	THEO. BALANCE	EST. BALANCE BELOW DIVERS.	ST. ANTHONY	TOTAL DIVERSIONS	THEO. BALANCE	EST. BALANCE BELOW DIVERS.	BALANCE ST. ANTHONY	DATE	HENRY'S FORK REIDBURG	GAIN BELOW ST. ANTHONY
JUL 25	527	30	557	533	24	153	129	1280	1433	892	541	650	109	798	-148	15	901	743	158	0	10	JUL 26	943	433
26	598	34	632	525	107	255	148	1260	1515	885	630	730	100	821	-91	15	846	725	121	0	30	27	439	409
27	598	30	628	544	84	255	171	1260	1515	878	637	735	98	776	-41	15	820	642	178	0	137	28	435	298
28	598	30	628	521	107	268	161	1200	1468	881	587	735	148	768	-33	15	820	649	171	0	138	29	447	309
29	598	30	628	507	121	268	147	1280	1548	836	712	700	-12	760	-60	15	846	708	138	0	78	30	455	377
30	598	30	628	529	99	255	156	1290	1545	925	620	700	80	772	-72	15	820	724	96	0	24	31	455	431
31	598	16	614	490	124	242	118	1290	1532	893	639	700	81	747	-47	15	820	717	103	0	56	AUG. 1	466	410
AUG 1	636	6	642	477	165	281	116	1260	1541	839	702	770	68	768	2		846	737	109	0	111	2	583	472
2	598	6	604	494	110	229	119	1260	1489	752	737	840	103	704	136		820	724	96	0	232	3	696	464
3	636	6	642	493	149	255	106	1280	1535	733	802	880	78	689	191		820	722	98	0	289	4	696	407
4	598	2	600	483	117	216	99	1290	1506	775	731	880	149	651	229		793	716	77	0	306	5	673	367
5	494	97	591	507	84	173	89	1260	1433	794	639	735	96	640	95		780	699	81	0	176	6	659	483
6	494	121	615	534	81	162	81	1260	1422	780	642	735	93	629	106		768	682	86	0	192	7	673	481
7	494	138	632	503	129	162	33	1240	1402	774	628	770	142	574	196		742	677	65	0	261	8	663	402
8	461	161	622	541	81	153	72	1230	1383	706	675	770	95	592	178		742	670	72	0	250	9	650	400
9	461	159	620	593	27	118	91	1230	1348	709	639	770	131	579	191		742	636	106	0	297	10	645	348
10	461	159	620	597	23	139	116	1240	1379	706	673	770	97	625	145		768	656	112	0	257	11	636	379
11	494	158	652	595	57	163	106	1280	1443	724	719	784	65	631	153		793	668	125	0	278	12	636	358
12	494	160	654	583	71	128	57	1200	1328	718	610	805	195	577	228		742	689	53	0	281	13	726	445
13	461	160	621	587	34	102	68	1280	1382	574	808	770	-38	604	166		742	624	118	0	284	14	730	446
14	461	160	621	578	43	88	45	1260	1348	609	739	805	66	602	203		718	608	110	0	313	15	701	388
15	461	160	621	580	41	88	47	1290	1378	631	747	805	58	612	193		718	619	99	0	292	16	668	376
16	449	160	609	577	32	88	56	1260	1348	544	804	805	1	648	157		693	590	103	0	260	17	640	380
17	443	158	601	573	28	88	60	1260	1348	533	815	805	-10	682	123		693	583	110	0	233	18	618	385
18	437	159	596	562	34	75	41	1240	1315	533	782	826	44	646	180		693	590	103	0	283	19	640	357
19	437	159	596	562	34	62	28	1220	1282	530	752	805	53	650	155		693	592	101	0	256	20	654	398
20	437	112	549	489	60	66	6	1220	1286	524	762	805	43	623	182		670	587	103	0	285	21	682	397
21	443	80	523	472	51	123	72	1200	1323	485	838	805	-33	541	264		670	565	105	0	369	22	795	426
22	437	80	517	472	45	169	124	1200	1369	451	918	882	-36	498	384		670	556	114	0	498	23	847	349
23	437	80	517	455	62	176	114	1200	1376	448	928	960	32	508	452		670	542	128	0	580	24	842	262
24	437	78	515	459	56	176	120	1180	1356	478	878	920	42	459	461		646	541	105	0	566	25	852	286
25	437	80	517	478	39	182	143	1180	1362	504	858	920	62	463	457		646	596	50	0	507	26	912	405
26	449	81	530	419	111	231	120	1200	1431	429	1002	960	-42	449	511		670	593	77	0	588	27	997	409
27	461	82	543	420	123	238	115	1180	1418	446	972	1000	28	391	609		693	620	73	0	682	28	1130	448
28	461	82	543	419	124	254	130	1200	1454	412	1042	1000	-42	378	622		768	563	205	0	827	29	1260	433
29	461	128	589	487	102	262	160	1230	1492	422	1070	1070	0	378	692		768	578	190	0	882	30	1390	508
30	449	75	524	453	71	233	162	1200	1433	404	1029	1140	111	398	742		742	552	190	0	932	31	1350	418
31	443	98	541	492	49	205	156	1200	1405	387	1018	1090	72	419	671		718	506	212	0	883	SEPT. 1	1350	467
SEPT 1	437	98	535	510	25	176	151	1180	1356	368	988	1090	102	439	651		693	505	188	0	839	2	1350	511
2	430	102	532	390	142	202	60	1200	1402	290	1112	1090	-22	391	699		693	501	192	0	891	3	1390	499
3	424	115	539	435	104	202	98	1200	1402	251	1151	1140	-11	388	752		670	480	190	0	942	4	1390	448
4	424	115	539	419	120	202	82	1180	1382	261	1121	1140	19	403	737		670	476	194	0	931	5	1420	489
5	424	115	539	420	119	195	76	1180	1375	232	1143	1150	7	363	787		670	472	198	0	985	6	1420	435
6	461	113	574	422	152	232	80	1200	1432	242	1190	1170	-20	371	799		742	525	217	0	1016	7	1530	514
7	494	121	615	436	179	270	91	1290	1560	251	1309	1180	-129	376	804		793	532	261	0	1065	8	1610	545
8	494	120	614	431	183	224	91	1260	1484	262	1222	1230	8	351	879		718	517	201	0	1080	9	1570	490
9	494	87	581	433	148	216	68	1230	1446	262	1184	1340	156	354	986		742	504	238	0	1224	10	1610	386
10	494	90	584	458	126	314	188	1260	1574	251	1323	1340	17	374	966		768	475	293	0	1259	11	1690	431
11	461	84	545	428	117	299	182	1260	1559	245	1314	1340	26	366	974		742	449	293	0	1267	12	1650	383
12	461	83	544	403	141	284	143	1260	1544	239	1305	1310	5	360	950		693	439	254	0	1204	13	1570	366
13	455	76	531	372	159	270	111	1230	1500	234	1266	1280	14	352	928		693	432	261	0	1189	14	1570	381
14	449	73	522	345	177	262	85	1230	1492	225	1287	1280	13	347	933		670	410	260	0	1133	15	1530	337
15	443	67	510	336	174	258	84	1200	1458	224	1234	1230	-4	347	883		670	405	265	0	1148	16	1500	332

FALL RIVER								HENRY'S FORK					TETON RIVER				PLATE NO. XX							
DATE	SQUIRREL	CANALS ABOVE STATION	SQUIRREL CANALS ABOVE STATION	TOTAL DIVERSIONS	THEO. BALANCE CHESTER	CHESTER	GAIN ABOVE CHESTER	ASHTON	ASHTON FALL RIVER CHESTER	DIVERS TO ST. ANTHONY	THEO. BALANCE	ST. ANTHONY	GAIN ASHTON TO ST. ANTHONY	DIVER. BELOW ST. ANTHONY	THEO. BALANCE	EST. BALANCE BELOW DIVERS.	ST. ANTHONY	TOTAL DIVERSIONS	THEO. BALANCE	EST. BALANCE BELOW DIVERS.	ST. ANTHONY	DATE	HENRY'S FORK REBURG	GAIN BELOW ST. ANTHONY
JUNE 1	1760	13	1773	635	1138	1650	512	2730	4380	1211	3169	3100	-69	1027	2073		1900	964	236	3009	JUN 2	3250	241	
2	1570	22	1592	662	930	1400	470	2730	4130	1211	2919	2680	-239	1017	1663		1580	931	640	2312	3	2580	268	
3	1450	22	1472	677	795	1100	305	2520	3620	1209	2411	2290	121	1013	1277		1370	894	470	1753	4	1940	187	
4	1570	74	1644	740	904	1150	246	2420	3570	1080	2490	2220	-270	1068	1152		1370	1024	246	1498	5	1810	312	
5	1760	66	1826	859	967	1400	433	2310	3710	1275	2435	2220	-215	1130	1090		1510	1007	503	1593	6	1910	317	
6	1690	64	1754	820	934	1450	516	2310	3760	1288	2472	2450	-22	1120	1330		1720	1033	687	2017	7	2250	233	
7	2090	89	2179	819	1360	2000	640	2190	4190	1339	2851	2680	-171	1128	1552		1940	1083	853	2409	8	2410	1	
8	2300	99	2399	836	1563	1840	277	2290	4130	1357	2773	2840	67	1204	1636		2230	1155	1075	2711	9	2660	-51	
9	2520	112	2632	840	1792	2150	358	2390	4540	1360	3180	2930	-250	1235	1694		2610	1304	1306	3000	10	3130	130	
10	2670	127	2797	929	1868	2420	552	2290	4710	1422	3268	3270	-18	1222	2048		2760	1205	1535	3603	11	3510	-93	
11	2820	129	2949	947	2002	2480	478	2390	4870	1337	3533	3310	-223	1160	2150		2690	1191	1499	3649	12	3690	41	
12	2900	145	3045	966	2079	2550	471	2290	4840	1251	3589	3270	-319	1021	2249		3040	1210	1830	4079	13	3970	-109	
13	2820	164	2984	963	2021	2360	339	1980	4340	1194	3146	3270	124	1013	2257		2730	1176	1354	3811	14	3960	149	
14	2820	176	2996	648	2348	2550	202	2170	4720	1179	3541	3270	-271	1005	2265		2650	1126	1524	3789	15	3940	151	
15	2520	189	2709	1018	1691	2420	729	2070	4490	1257	3233	3100	-133	1013	2087		2730	1263	1467	3554	16	3820	266	
16	2520	216	2736	682	2054	2220	166	2070	4290	1235	3055	2930	-125	984	1946		2650	1246	1404	3350	17	3600	250	
17	2520	188	2708	1019	1689	2150	461	2070	4220	1066	3154	2840	-314	919	1921		2650	1211	1439	3365	18	3620	260	
18	2230	181	2411	1029	1382	1850	468	2070	3920	934	2986	2840	-146	857	1983		2500	1164	1336	3319	19	3850	531	
19	2020	176	2196	1036	1160	1550	390	2250	3800	803	2997	3100	103	795	2305		2190	1015	1175	3480	20	3770	290	
20	1690	180	1870	871	999	1290	291	1960	3250	664	2586	2770	184	775	1995		1900	950	950	2945	21	3290	345	
21	1690	181	1871	912	959	1290	331	1870	3160	649	2511	2440	-71	795	1645		1900	975	925	2570	22	2920	350	
22	1820	124	1944	843	1101	1450	349	1780	3230	812	2418	2440	22	875	1565		2050	1051	999	2564	23	2750	186	
23	1950	180	2130	979	1151	1520	369	1780	3300	974	2326	2360	34	912	1448		2190	1209	981	2429	24	2760	331	
24	2160	187	2347	1025	1322	1650	328	1760	3410	972	2438	2360	-78	952	1408		2270	1204	1068	2474	25	2790	316	
25	2020	174	2194	975	1219	1500	281	1670	3170	1037	2133	2290	-157	911	1379		2120	1191	929	2308	26	2720	412	
26	1570	174	1744	906	838	1120	282	1670	2790	1023	1767	2000	233	834	1166		1970	1210	760	1926	27	2550	624	
27	1280	177	1457	895	562	826	264	1670	2496	975	1521	1750	229	644	1106		1680	1123	557	1663	28	2220	557	
28	1400	182	1582	957	625	755	130	1670	2425	986	1439	1500	61	794	706		1470	1017	453	1159	29	1890	731	
29	1340	224	1564	959	605	719	114	1600	2319	908	1411	1440	29	853	587		1540	1012	528	1115	30	1990	875	
30	1340	223	1563	976	587	719	132	1570	2289	924	1365	1440	75	696	744		1540	993	547	1291	JUL 1	2270	979	
JUL 1	1230	226	1456	927	529	690	161	1660	2350	662	1688	1740	52	774	960		1470	917	553	1519	2	2380	861	
2	1230	231	1461	928	533	647	114	1660	2307	615	1692	1620	-72	756	864		1400	848	551	1415	3	2130	715	
3	1280	235	1515	929	586	690	104	1600	2290	733	1557	1560	3	759	801		1470	855	615	1416	4	2060	644	
4	1230	184	1414	877	537	719	182	1550	2269	753	1516	1490	-26	754	736		1470	863	602	1343	5	2080	737	
5	1180	182	1362	868	494	661	167	1540	2201	776	1425	1410	-15	782	628		1340	786	554	1182	6	2000	818	
6	1180	184	1364	832	532	551	19	1570	2121	784	1337	1340	3	747	593		1340	800	500	1133	7	1810	680	
7	1020	165	1185	805	380	481	101	1570	2051	801	1250	1180	-70	795	385		1270	824	446	837	8	1670	839	
8	885	185	1070	836	234	418	184	1470	1888	853	1035	1090	55	741	349		1200	837	363	712	9	1500	788	
9	798	185	983	691	292	389	97	1470	1859	914	945	1000	55	748	252		1140	805	335	587	10	1280	693	
10	840	192	1032	740	292	297	5	1450	1747	1032	715	840	125	660	180		1140	854	286	466	11	1150	684	
11	755	189	944	771	173	281	108	1420	1701	1030	671	738	67	703	35		1140	859	261	316	12	1040	724	
12	755	193	948	749	199	162	-37	1390	1552	1095	457	635	178	636	-1	15	1140	855	285	284	13	1010	726	
13	674	191	865	828	37	122	85	1390	1512	990	522	575	53	613	-38	15	1080	712	368	330	14	928	598	
14	598	194	792	780	12	39	27	1390	1429	966	463	575	112	578	-3	15	1020	820	200	197	15	821	624	
15	598	161	759	741	18	68	50	1390	1458	927	531	545	14	589	-44	15	1020	809	211	167	16	716	549	
16	562	176	738	738	0	25	25	1390	1415	889	526	545	19	600	-55	15	958	791	167	112	17	640	528	
17	562	155	717	722	-5	41	46	1400	1441	864	577	635	58	623	12	15	1020	807	213	225	18	600	375	
18	562	155	717	735	-18	25	43	1400	1425	810	618	652	37	609	43	15	958	807	151	194	19	574	380	
19	562	155	717	749	-32	61	93	1370	1431	801	630	668	38	781	-113	15	958	849	109	0	20	544	548	
20	527	155	682	759	-77	58	135	1340	1398	817	581	668	87	710	-42	15	958	834	124	0	21	515	433	
21	527	180	707	767	-60	25	85	1290	1315	797	518	635	117	679	-44	15	958	807	151	107	22	487	375	
22	494	182	676	700	-24	68	92	1260	1328	812	516	590	74	631	-41	15	901	717	104	143	23	459	316	
23	494	18	675	767	-92	39	131	1230	1269	858	411	530	119	608	-78	15	846	721	125	47	24	459	412	
24	527	139	666	688	-22	94	116	1280	1374	954	420	530	110	624	-94	15	846	732	174	20	451	431		

FALL RIVER								HENRY'S FORK					TETON RIVER				BALANCE							
DATE	SQUIRREL	CANALS ABOVE STATION	SQUIRREL ABOVE STATION	TOTAL DIVERSIONS	THEO. BALANCE CHESTER	GAIN ABOVE CHESTER	ASHTON	ASHTON FALL RIVER CHESTER	DIVERS ASHTON TO ST. ANTHONY	THEO. BALANCE	ST. ANTHONY	GAIN ASHTON TO ST. ANTHONY	DIVER. BELOW ST. ANTHONY	THEO. BALANCE	EST. BALANCE BELOW DIVERS.	ST. ANTHONY	TOTAL DIVERSIONS	THEO. BALANCE	EST. BALANCE BELOW DIVERS.	ST. ANTHONY	BALANCE HENRY'S FORK	DATE	HENRY'S FORK REIBURG	GAIN BELOW ST. ANTHONY
JUNE 1	1760	13	1773	635	1138	1650	512	2730	4380	1211	3169	3160	-69	1027	2073		1900	964	936	3009	JUN 2	3250	241	
2	1570	22	1592	662	930	1400	470	2730	4130	1211	2919	2680	-239	1017	1663		1580	931	649	2312	3	2580	268	
3	1450	22	1472	677	795	1100	305	2520	3620	1209	2411	2290	121	1013	1277		1370	894	476	1753	4	1940	187	
4	1570	74	1644	740	904	1150	246	2420	3570	1080	2490	2220	-270	1068	1152		1370	1024	346	1498	5	1810	312	
5	1760	66	1826	859	967	1400	433	2310	3710	1275	2435	2220	-215	1130	1090		1510	1007	503	1593	6	1910	317	
6	1690	64	1754	820	934	1450	516	2310	3760	1288	2472	2450	-22	1120	1330		1720	1033	687	2017	7	2250	233	
7	2090	89	2179	819	1360	2000	640	2190	4190	1339	2851	2680	-171	1128	1552		1940	1083	857	2409	8	2410	1	
8	2300	99	2399	836	1563	1840	277	2290	4130	1357	2773	2840	67	1204	1636		2230	1155	1075	2711	9	2660	-51	
9	2520	112	2632	840	1792	2150	358	2390	4540	1360	3180	2930	-250	1236	1694		2610	1304	1306	3000	10	3130	130	
10	2670	127	2797	929	1868	2420	552	2290	4710	1422	3288	3270	-18	1222	2048		2760	1205	1555	3603	11	3510	-93	
11	2820	129	2949	947	2002	2480	478	2390	4870	1337	3533	3310	-223	1160	2150		2690	1191	1499	3649	12	3690	41	
12	2900	145	3045	966	2079	2550	471	2290	4840	1251	3589	3270	-319	1021	2249		3040	1210	1830	4079	13	3970	-109	
13	2820	164	2984	963	2021	2360	339	1980	4340	1194	3146	3270	124	1013	2257		2730	1176	1554	3811	14	3960	149	
14	2820	176	2996	648	2348	2550	202	2170	4720	1179	3541	3270	-271	1005	2265		2650	1126	1524	3789	15	3940	151	
15	2520	189	2709	1018	1691	2420	729	2070	4490	1257	3233	3100	-133	1013	2087		2730	1263	1467	3554	16	3820	266	
16	2520	216	2736	682	2054	2220	166	2070	4290	1235	3055	2930	-125	984	1946		2650	1246	1404	3350	17	3600	250	
17	2520	188	2708	1019	1689	2150	461	2070	4220	1066	3154	2840	-314	919	1921		2650	1211	1439	3360	18	3620	260	
18	2230	181	2411	1029	1382	1850	468	2070	3920	934	2986	2840	-146	857	1983		2500	1164	1336	3319	19	3850	531	
19	2020	176	2196	1036	1160	1550	390	2250	3800	803	2997	3100	103	795	2305		2190	1015	1175	3480	20	3770	290	
20	1690	180	1870	871	999	1290	291	1960	3250	664	2586	2770	184	775	1995		1900	950	950	2945	21	3290	345	
21	1690	181	1871	912	959	1290	331	1870	3160	649	2511	2440	-71	795	1645		1900	975	925	2570	22	2920	350	
22	1820	124	1944	843	1101	1450	349	1780	3230	812	2418	2440	22	875	1565		2050	1051	999	2564	23	2750	186	
23	1950	180	2130	979	1151	1520	369	1780	3300	974	2326	2360	34	912	1448		2190	1209	981	2429	24	2760	331	
24	2180	187	2347	1025	1322	1650	328	1760	3410	972	2438	2360	-78	952	1408		2270	1204	1066	2474	25	2790	316	
25	2020	174	2194	975	1219	1500	281	1670	3170	1037	2133	2290	-157	911	1379		2120	1191	929	2308	26	2720	412	
26	1570	174	1744	906	838	1120	282	1670	2790	1023	1767	2000	233	834	1166		1970	1210	760	1926	27	2550	624	
27	1280	177	1457	895	562	826	264	1670	2496	975	1521	1750	229	644	1106		1680	1123	557	1663	28	2220	557	
28	1400	182	1582	957	625	755	130	1670	2425	986	1439	1500	61	794	706		1470	1017	453	1159	29	1890	731	
29	1340	224	1564	959	605	719	114	1600	2319	908	1411	1440	29	853	587		1540	1012	528	1115	30	1990	875	
30	1340	223	1563	976	587	719	132	1570	2289	924	1365	1440	75	696	744		1540	993	547	1291	JUL 1	2270	979	
JUL 1	1230	226	1456	927	529	690	161	1660	2350	662	1688	1740	52	774	966		1470	917	553	1519	2	2380	861	
2	1230	231	1461	928	533	647	114	1660	2307	615	1692	1620	-72	756	864		1400	849	551	1415	3	2130	715	
3	1280	235	1515	929	586	690	104	1600	2290	733	1557	1560	3	759	801		1470	855	615	1416	4	2060	644	
4	1230	184	1414	877	537	719	182	1550	2269	753	1516	1490	-26	754	736		1470	863	607	1343	5	2080	737	
5	1180	182	1362	868	494	661	167	1540	2201	776	1425	1410	-15	782	628		1340	786	554	1182	6	2000	818	
6	1180	184	1364	832	532	551	19	1570	2121	784	1337	1340	3	747	593		1340	800	540	1133	7	1810	680	
7	1020	165	1185	805	380	481	101	1570	2051	801	1250	1180	-70	795	385		1270	824	446	831	8	1670	839	
8	885	185	1070	836	234	418	184	1470	1888	853	1035	1090	55	741	349		1200	837	363	712	9	1500	788	
9	798	185	983	691	292	389	97	1470	1859	914	945	1000	55	748	252		1140	805	335	587	10	1280	693	
10	840	192	1032	740	292	297	5	1450	1747	1032	715	840	125	660	180		1140	854	260	466	11	1150	684	
11	755	189	944	771	173	281	108	1420	1701	1030	671	738	67	703	35		1140	859	281	316	12	1040	724	
12	755	193	948	749	199	162	-37	1390	1552	1095	457	635	178	636	-1	15	1140	855	285	284	13	1010	726	
13	674	191	865	828	37	122	85	1390	1512	990	522	575	53	613	-38	15	1080	712	368	330	14	928	598	
14	598	194	792	780	12	39	27	1390	1429	966	463	575	112	578	-3	15	1020	820	200	197	15	821	624	
15	598	161	759	741	18	68	50	1390	1458	927	531	545	14	589	-44	15	1020	809	211	20	167	16	716	549
16	562	176	738	738	0	25	25	1390	1415	889	526	545	19	600	-55	15	958	791	167	112	17	640	528	
17	562	155	717	722	-5	41	46	1400	1441	864	577	635	58	623	12	15	1020	807	213	10	225	18	600	375
18	562	155	717	735	-18	25	43	1400	1425	810	615	652	37	609	43	15	958	807	151	0	194	19	574	380
19	562	155	717	749	-32	61	93	1370	1431	801	630	668	38	781	-113	15	958	849	109	0	-4	20	544	548
20	527	155	682	759	-77	58	135	1340	1398	817	581	668	87	710	-42	15	958	834	124	0	82	21	515	433
21	527	180	707	767	-60	25	85	1290	1315	797	518	635	117	679	-44	15	958	807	151	0	107	22	482	375
22	494	182	676	700	-24	68	92	1260	1328	812	516	590	74	631	-41	15	901	717	184	0	143	23	459	316
23	494	181	675	767	-92	39	131	1230	1269	858	411	530	119	608	-78	15	846	721	184	0	47	24	459	412
24	527	139	666	688	-22	94	116	1280	1374	954	420	530	110	624	-94	15	846	732	114	0	20	25	451	431



NET GAIN IN CUBIC FEET PER SECOND

DISCHARGE IN CUBIC FEET PER SECOND

BLACKFOOT TO NEELEY

NEELEY
BLACKFOOT PLUS FORTNEUF

NEELEY
BLACKFOOT PLUS FORTNEUF

